To: Busch, Stephen (DEQ)[BUSCHS@michigan.gov]; Prysby, Mike (DEQ)[PRYSBYM@michigan.gov]
Cc: Poy, Thomas[poy.thomas@epa.gov]; Deltoral, Miguel[deltoral.miguel@epa.gov]
From: Crooks, Jennifer
Sent: Thur 2/26/2015 3:52:51 PM
Subject: HIGH LEAD: FLINT Water testing Results
Personal Address / Ex. 6 (Pb & Cu).pdf
Flint Technical Advisory Team List_R1.pdf

Hi, Steve and Mike. Thanks for talking with me yesterday, Steve, about the most recent TTHM results. We'll look forward to receiving them whenever you get them back from the lab.

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The citizen's name is:

Citizen name / Ex. 6

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From: Personal Email / Ex. 6
Sent: Thursday, February 26, 2015 9:08 AM
To: Crooks, Jennifer
Subject: Fwd: Re: Water testing Results

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Date: Feb 26, 2015 7:55 AM
Subject: Re: Water testing Results
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Tom—Since we have Susan Hedman's attention about Flint, is this high lead result enough to get Susan to push Mark Johnson with ATSDR to act on this? Or for Susan to get Tom Grubbs to look into this from a Distribution system perspective?

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City of Flint / Veolia Technical Advisory Committee

	COMPANY	NAME	TITLE	PHONE	DESIGNEE	CONTACT INFO	
1	General Motors	Randy Tanner	Head of Engineering	810-577-8552			Yes
2	MSU - Lansing	Dr. Joan Rose	Chair in Water Research	517-432-4412	**Dr. Joan Rose**	rosejo@msu.edu	Yes
3	Greater Flint Health Coalition	Kirk Smith	President	810-232-2228	**Kirk Smith**	ksmith@flint.org	Yes
4	County Drain Commissioner	Jeff Wright	Deputy Drain Commissioner	810-732-7870	**John O'Brien**	jfobrien@gcdcwws.com	Yes
5	U of M Flint	Michael Lane	Dir. Environmental Health & Safety	810-766-6763	**Michael Lane**	mjlane@umflint.edu	Yes
6	Mott Community	Larry Kohler	Executive Director		**Larry Koehler**	larry.koehler@mcc.edu	Yes
7	Genesys Pace Hospital	Donna Cole	Property Manager	810-606-5611	**Donna Cole**	donna.cole@genesys.org	Yes
8	Hurley Hospital	Melanie Gavulic	President / CEO		**Norb Birchmier**	mgavuli1@hurleymc.com	Yes
9	McLaren Hospital	Don Kooy	President / CEO		**Russell Hudson**	don.kooy@mclaren.org	Yes
10	Genesee County Medical Society	Pete Levine	Executive Director	810-733-9925	**Gerald Natzke**	plevine@gcms.org	Yes
11	Dept. of Environemental Quality	Mike Prysby	District Supervisor	517-290-8817	**Mike Prysby**	prysbym@michigan.gov	Yes
12	Genesee Health Department	Jim Henry			**Jim Henry**	jhenry@gchd.com	Yes

	City of Flint	Howard Croft	DPW Director	810-577-1202	**Howard Croft**	hcroft@cityofflint.com	Yes
	City of Flint	Daugherty Johnson	Utilities Administrator	810-577-8906	**Duffy Johnson**	djohnson@cityofflint.com	Yes
	City of Flint	Brent Wright	Plant Supervisor	810-787-6537	**Brent Wright**	bwright@cityofflint.com	Yes
	City of Flint	Mike Glasgow	Asstant Plant Supervisor		**Mike Glasgow**	mglasgow@cityofflint.com	Yes

To: Crooks, Jennifer[crooks.jennifer@epa.gov]
Cc: Busch, Stephen (DEQ)[BUSCHS@michigan.gov]; Rosenthal, Adam (DEQ)[ROSENTHALA@michigan.gov]
From: Prysby, Mike (DEQ)
Sent: Thur 2/26/2015 4:24:32 PM
Subject: RE: HIGH LEAD: FLINT Water testing Results

Jennifer,

I recall Adam showing me a high lead/copper sample result (perhaps it was this one)….as part of the city's routine lead-copper monitoring. If so, it was a stagnated sample as part of the sampling protocol. Adam mentioned that all other samples were below the AL…and the city will not exceed the lead AL. I will confirm this. The city; however, needs to take further action to help address Citizen name / Ex. 6 concern. The type of plumbing needs to be identified and sample tap location within the premise plumbing. They should offer to re-sample for PB after flushing the tap to demonstrate that flushing the tap will reduce the lead concentration. The city also needs to provide other lead-reduction strategies to Citizen name / Ex. 6

Michael Prysby, P.E.

District Engineer

Office of Drinking Water and Municipal Assistance

517 290-8817

From: Crooks, Jennifer [mailto:crooks.jennifer@epa.gov]
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From: Henry, Timothy
Sent: Thur 2/26/2015 5:26:44 PM
Subject: RE: HIGH LEAD: FLINT Water testing Results

Please share this and anything additional you get on Flint with Michael Wright (ORD – Cinci) who will be participating on the Technical Advisory Committee. If you have other info on the situation in Flint, please pass that on too.

Tim Henry
Deputy Director, Water Division
U.S. EPA (W-15J)
77 W. Jackson Blvd., Chicago, IL 60604-3590
Phone: 312.886.6107 Fax: 312.692.2578

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To: Hyde, Tinka; Henry, Timothy
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Personal Address / Ex. 6

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To: Crooks, Jennifer
Subject: Fwd: Re: Water testing Results

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Cc:

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Cc: Busch, Stephen (DEQ)[BUSCHS@michigan.gov]; Rosenthal, Adam (DEQ)[ROSENTHALA@michigan.gov]; Deltoral, Miguel[deltoral.miguel@epa.gov]; Poy, Thomas[poy.thomas@epa.gov]
From: Crooks, Jennifer
Sent: Thur 2/26/2015 10:15:29 PM
Subject: HIGH LEAD: FLINT Water testing Results
Flint lean level results Feb 2015 Personal Address / Ex. 6 (Pb Cu).pdf

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517 290-8817

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From: Deltoral, Miguel
Sent: Fri 2/27/2015 10:58:51 AM
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Sent: Thursday, February 26, 2015 10:53 AM
To: Busch, Stephen (DEQ); Prysby, Mike (DEQ)
Cc: Poy, Thomas; Deltoral, Miguel
Subject: HIGH LEAD: FLINT Water testing Results

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U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

From: Crooks, Jennifer
Sent: Thursday, February 26, 2015 04:15 PM
To: Prysby, Mike (DEQ)
Cc: Busch, Stephen (DEQ); Rosenthal, Adam (DEQ); Deltoral, Miguel; Poy, Thomas
Subject: HIGH LEAD: FLINT Water testing Results

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District Engineer

Office of Drinking Water and Municipal Assistance

517 290-8817

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From: Busch, Stephen (DEQ)
Sent: Fri 2/27/2015 6:48:01 PM
Subject: RE: HIGH LEAD: FLINT Water testing Results

Miguel and Jennifer,

Thank you for this information, we will take it under consideration.

The City of Flint:

- Has a 90th percentile lead level of 6.0 ppb based on 100 samples collected in its most recent monitoring period of 7/1/2014 – 12/31/2014, with 2 samples (23 & 37 ppb) over the AL.

- Has a 90th percentile copper level of 110 ppb based on 100 samples collected in its most recent monitoring period of 7/1/2014 – 12/31/2014, with no samples over the Cu AL.

- Has an Optimized Corrosion Control Program

- Conducts quarterly Water Quality Parameter monitoring at 25 sites and has not had any unusual results.

- Has never had a 90th percentile lead AL exceedance

- Continues to meet all applicable plant tap standards and treatment technique requirements at its WTP

- Has developed and implemented an Operational Evaluation of its treatment and distribution systems, and continues to adjust and update this OE based on updated quarterly results

My understanding from Ben Grumbles and the LCR Short Term Revisions is that "EPA regulations require water systems to develop a targeted sampling pool, focused on those sites with the greatest risk of lead leaching. All compliance samples used to determine the 90th percentile must come from that sampling pool." [40 CFR 141.80(c)(1)], 56 Fed Reg. 26518 (June, 7, 1991), [40CFR 141.90(a)(1)(v), and 40 CFR 141.90(h)(2)]. Our office continues to work with our community water systems to follow these and all other requirements of the current lead and copper regulations.

Personal Address / Ex. 6 the site in question, is not part of the City's established sample site pool. The residence consists of PVC plumbing materials, and has an iron pre-filter at the service connection.

Regarding TTHM, the most recent quarter monitoring from February 2015 was issued today by the lab.

While 2 of the 8 DBP compliance sites continue to have an LRAA that exceeds the standard, quarterly results at all 8 DBP compliance sites were below less than half the standard level of 80 ppb, the highest being 28.5 ppb. Only one site now has an OEL over 80 ppb, at 85 ppb.

Stephen Busch, P.E.

Lansing and Jackson District Supervisor

Office of Drinking Water and Municipal Assistance

MDEQ

517-643-2314

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Sent: Friday, February 27, 2015 11:05 AM
To: Deltoral, Miguel; Prysby, Mike (DEQ)
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I talked with Miguel Del Toral about his knowledge on research on lead. He said that high levels of iron, usually bring high levels of lead. The large amount of black sediment at Citizen name / Ex. 6 home, is most likely particulate lead, Miguel said, where the lead actually bonds to the iron sediment. While the particulates of lead/iron are small, they're very highly concentrated with lead—up to 95% lead.

Miguel was wondering if Flint is feeding Phosphates. Flint must have Optimal Corrosion Control Treatment—is it Phosphates? Or is it pH/Alkalinity Adjustment? The reason he asks, is because systems using the pH/Alkalinity adjustment have problems with lead levels in the 100's or higher—and they have problems with random lead particulate matter in the distribution system. Miguel said that we all know that flushing regularly helps reduce the lead concentrations, but not immediately. The City can't just flush in advance of taking the compliance samples, they have to flush the lines on a regular schedule.

The problem with high lead issues, is that the water has so many different variables, that it's hard to pinpoint what is causing what problem where. From a public health perspective, can we assume that the high lead levels in Citizen name / Ex. 6 neighborhood are isolated to just her area? Or are they more widespread?

Please feel free to contact Miguel directly—312-886-5253; Deltoral.miguel@epa.gov.

Jennifer

From: Prysby, Mike (DEQ) [mailto:PRYSBYM@michigan.gov]
Sent: Thursday, February 26, 2015 10:25 AM
To: Crooks, Jennifer
Cc: Busch, Stephen (DEQ); Rosenthal, Adam (DEQ)
Subject: RE: HIGH LEAD: FLINT Water testing Results

Jennifer,

I recall Adam showing me a high lead/copper sample result (perhaps it was this one)….as part of the city's routine lead-copper monitoring. If so, it was a stagnated sample as part of the sampling protocol. Adam mentioned that all other samples were below the AL…and the city will not exceed the lead AL. I will confirm this. The city; however, needs to take further action to help address Citizen name / Ex. 6 concern. The type of plumbing needs to be identified and sample tap location within the premise plumbing. They should offer to re-sample for PB after flushing the tap to demonstrate that flushing the tap will reduce the lead concentration. The city also needs to provide other lead-reduction strategies to Citizen name / Ex. 6

Michael Prysby, P.E.

District Engineer

Office of Drinking Water and Municipal Assistance

517 290-8817

From: Crooks, Jennifer [mailto:crooks.jennifer@epa.gov]
Sent: Thursday, February 26, 2015 10:53 AM
To: Busch, Stephen (DEQ); Prysby, Mike (DEQ)
Cc: Poy, Thomas; Deltoral, Miguel
Subject: HIGH LEAD: FLINT Water testing Results

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We also talked about Dr. Joan Rose from Michigan State being on the Flint Tech Advisory Committee—you also mentioned that someone from the Dept of Community Health was on the Committee. I'm thinking that Dr. Rose would want to dive further into this, since there's actual evidence that the water is leaching contaminants from the biofilms; or Dept of Community Health would want to get involved and look at this from an epidemiological perspective. (She and her family are also exhibiting the rashes when exposed to the water, and her daughter's hair is falling out in clumps.)

Maybe MSU could authorize the payment of the analyses for these samples? Or Dept of Community Health?

Citizen name / Ex. 6

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From: **Personal Address / Ex. 6**
Sent: Thursday, February 26, 2015 9:08 AM
To: Crooks, Jennifer
Subject: Fwd: Re: Water testing Results

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Date: Feb 26, 2015 7:55 AM
Subject: Re: Water testing Results
To: Personal Address / Ex. 6
Cc:

Citizen name / Ex. 6

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On Tue, Feb 24, 2015 at 1:50 PM, Michael Glasgow <mglasgow@cityofflint.com> wrote:

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I will bring a copy of last years annual report when I stop by tomorrow. The annual report from 2014 must be delivered to residents by July 1st of this year. I imagine we may have it complete by June.

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On Fri, Feb 20, 2015 at 1:00 AM, Personal Address / Ex. 6 wrote:

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Thank You

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> Mike

To: Wright, Michael[Wright.Michael@epa.gov]
From: Poy, Thomas
Sent: Fri 2/27/2015 10:48:15 PM
Subject: FW: HIGH LEAD: FLINT Water testing Results

Hi Michael: I will be forwarding you some (hopefully) useful information about the DW situation in Flint. Last year they switch from purchasing water from Detroit (which treats Lake Huron water) to treating Flint River water. There is a pipeline being built that will give Flint access to Lake Huron which is to be completed in 2016. MDEQ has been working with Flint on their plant operations. Flint had an E coli detection last summer because of distribution system issue (valves causing stagnant water). They fixed the valves, flushed the lines and increased chlorine residuals. The extra chlorine has led to a TTHM violation. Again, MDEQ worked with Flint on operations and now, 7 of 8 samples are below the MCL (it may be 8 of 8 with the next round of sampling). Unfortunately, because TTHM compliance is calculated based on a running annual average, even though the water being served now meets standards, the violation doesn't go away for a few quarters. In the meantime, the city must continue to provide public notice about the violation. Now, there is at least one home that has high lead levels. See below.

Tom

Tom Poy

Chief, Ground Water and Drinking Water Branch

USEPA - Region 5

(312) 886-5991

From: Henry, Timothy
Sent: Thursday, February 26, 2015 11:27 AM
To: Poy, Thomas
Subject: RE: HIGH LEAD: FLINT Water testing Results

Please share this and anything additional you get on Flint with Michael Wright (ORD – Cinci) who will be participating on the Technical Advisory Committee. If you have other info on the situation in Flint, please pass that on too.

Tim Henry
Deputy Director, Water Division
U.S. EPA (W-15J)
77 W. Jackson Blvd., Chicago, IL 60604-3590
Phone: 312.886.6107 Fax: 312.692.2578

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Subject: FW: HIGH LEAD: FLINT Water testing Results

Tinka/Tim: FYI…one resident in Flint had sediment in her water and the water plant tested it and found high iron and lead. Don't know if it is an individual home issue.

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Mike

To: Poy, Thomas[poy.thomas@epa.gov]
Cc: Mike Wright[**Personal Email / Ex. 6**
From: Wright, Michael
Sent: Mon 3/2/2015 1:50:01 PM
Subject: RE: HIGH LEAD: FLINT Water testing Results

Thanks Tom. Any information is helpful at this stage.

Please note that I won't be accessing this email while on travel, so please try me at **Personal Email / Ex. 6** after tonight.

Mike

J. Michael Wright, ScD
U.S. Environmental Protection Agency
National Center for Environmental Assessment
26 W. Martin Luther King Drive (MS-A110)
Cincinnati, OH 45268
513 569 7922 (phone)
513 487 2539 (fax)

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To: Busch, Stephen (DEQ)[BUSCHS@michigan.gov]; Deltoral, Miguel[deltoral.miguel@epa.gov]
Cc: Rosenthal, Adam (DEQ)[ROSENTHALA@michigan.gov]; Poy, Thomas[poy.thomas@epa.gov]; Porter, Andrea[porter.andrea@epa.gov]; Prysby, Mike (DEQ)[PRYSBYM@michigan.gov]
From: Crooks, Jennifer
Sent: Tue 3/3/2015 5:45:27 PM
Subject: Re: HIGH LEAD: FLINT Water testing Results

Hi, Steve. I found that interesting that the Citizen name / Ex. 6 interior piping is all PVC, and they have an iron pre-filter at the service connection. I remember in a discussion with Miguel, and maybe he can explain further, that systems with iron removal treatment had higher levels of lead at the tap, especially if the bacteria had been allowed to overgrow the filter. Seems there was a higher amount of lead particulate in the system. Miguel said in his email to us on 2/27 at 4:58am, that:

“Fe/Mn can transport lead from the lead service lines into the home. The lead sorbs onto the Fe/Mn particles. In SW systems, the Fe typically is released from the water mains.”

Perhaps the iron pre-filter is contributing to the high lead levels?

Jennifer

From: Busch, Stephen (DEQ) <BUSCHS@michigan.gov>
Sent: Friday, February 27, 2015 12:48 PM
To: Crooks, Jennifer; Deltoral, Miguel
Cc: Rosenthal, Adam (DEQ); Poy, Thomas; Porter, Andrea; Prysby, Mike (DEQ); Benzie, Richard (DEQ); shekterl@michigan.gov
Subject: RE: HIGH LEAD: FLINT Water testing Results

Miguel and Jennifer,

Thank you for this information, we will take it under consideration.

The City of Flint:

- Has a 90th percentile lead level of 6.0 ppb based on 100 samples collected in its most recent monitoring period of 7/1/2014 – 12/31/2014, with 2 samples (23 & 37 ppb) over the AL.

- Has a 90th percentile copper level of 110 ppb based on 100 samples collected in its most recent monitoring period of 7/1/2014 – 12/31/2014, with no samples over the Cu AL.

- Has an Optimized Corrosion Control Program

- Conducts quarterly Water Quality Parameter monitoring at 25 sites and has not had any unusual results.

- Has never had a 90th percentile lead AL exceedance

- Continues to meet all applicable plant tap standards and treatment technique requirements at its WTP

- Has developed and implemented an Operational Evaluation of its treatment and distribution systems, and continues to adjust and update this OE based on updated quarterly results

My understanding from Ben Grumbles and the LCR Short Term Revisions is that "EPA regulations require water systems to develop a targeted sampling pool, focused on those sites with the greatest risk of lead leaching. All compliance samples used to determine the 90th percentile must come from that sampling pool." [40 CFR 141.80(c)(1)], 56 Fed Reg. 26518 (June, 7, 1991), [40CFR 141.90(a)(1)(v), and 40 CFR 141.90(h)(2)]. Our office continues to work with our community water systems to follow these and all other requirements of the current lead and copper regulations.

Personal Address / Ex. 6 the site in question, is not part of the City's established sample site pool. The residence consists of PVC plumbing materials, and has an iron pre-filter at the service connection.

Regarding TTHM, the most recent quarter monitoring from February 2015 was issued today by the lab.

While 2 of the 8 DBP compliance sites continue to have an LRAA that exceeds the standard, quarterly results at all 8 DBP compliance sites were below less than half the standard level of 80 ppb, the highest being 28.5 ppb. Only one site now has an OEL over 80 ppb, at 85 ppb.

Stephen Busch, P.E.

Lansing and Jackson District Supervisor

Office of Drinking Water and Municipal Assistance

MDEQ

517-643-2314

From: Crooks, Jennifer [mailto:crooks.jennifer@epa.gov]
Sent: Friday, February 27, 2015 11:05 AM
To: Deltoral, Miguel; Prysby, Mike (DEQ)
Cc: Busch, Stephen (DEQ); Rosenthal, Adam (DEQ); Poy, Thomas; Porter, Andrea
Subject: Re: HIGH LEAD: FLINT Water testing Results

Hi, Steve and Mike. I talked with Miguel, and he said if you all would be interested in getting input from our expert, Mike Schock at EPA Cincinnatti Research, on the Flint distribution system issues and dealing with lead and DBP's together, you should contact Mike directly--here is his information.

schock.michael@epa.gov

(513) 569-7412

Jennifer

From: Deltoral, Miguel
Sent: Friday, February 27, 2015 4:58 AM
To: Crooks, Jennifer; Prysby, Mike (DEQ)
Cc: Busch, Stephen (DEQ); Rosenthal, Adam (DEQ); Poy, Thomas; Schock, Michael; Porter, Andrea
Subject: Re: HIGH LEAD: FLINT Water testing Results

Jen/all - I think things got garbled in translation...

What I was saying is that where you find Pb values that high, it is usually due to particulate lead. Not always, but generally. Particulate lead is released sporadically from lead service lines, leaded solder and leaded brass in a number of ways and folks tend to discount these values as anomalies, but particulate lead release is a normal part of the corrosion process and it is universal (common) in all systems. It's just that it is not captured as often by the infrequent LCR sampling. If systems are pre-flushing the tap the night before collec on thisting LCR compliance samples (MDEQ still provides these instructions to public water systems) this clears particulate lead out of the plumbing and biases the results low by eliminating the highest lead values. If systems are pre-flushing and still finding particulate lead, the amount of particulate lead in the system can be higher than what is being detected using these 'pre-flushed' first-draw samples. My point on that was that people are exposed to the particulate lead on a daily basis, but the particulate lead is being flushed away before collecting compliance samples which provides false assurance to residents about the true lead levels in the water.

Some quick notes on particulate lead release:

- Fe/Mn can transport lead from the lead service lines into the home. The lead sorbs onto the Fe/Mn particles. In GW systems, Fe/Mn can come from the source water and more Fe from the water mains. In SW systems, the Fe typically is released from the water mains.
- Lead released from lead service lines can also 'seed' galvanized iron pipes inside the homes. Again, the lead sorbs onto the iron on the pipes and be released sporadically. Generally, the higher the flow, the more Fe and Fe+Pb particulate you will likely get.
- If there is a partial lead service line (lead connected to copper) you can get additional lead release due to galvanic corrosion.
- Leaded brasses and solder can also release particulate lead under certain circumstances.
- The particulate can contain very high concentrations of lead (hundreds to thousands of ppb Pb) which is a much higher concentration than lead paint, so even small particles can result in high lead values.
- If the lead service line was disturbed (water main repair/replacement, meter installation repair/replacement, service line leak repairs, etc.) you can have VERY high lead levels in the scale and sediment that is dislodged from the inside of lead service lines. Here in Chicago, during a partial lead service line replacement, we collected the scale and sediment that came into the home and we found 300,000+ ug/L lead in the scale; 125,000 ug/L Pb in the sediment. Very dangerous.
- Higher levels of PO4 (3-4 mg/L Ortho) seem to reduce the amount of particulate Pb that is released in the absence of physical disturbances to the lead lines. Doesn't stop it entirely, but should generally reduce the occurrence. Caveat – Other water quality issues can change the chemical complexes that form on the pipe, so cleaner sources with more consistent WQ form more predictable scale complexes.

If I remember correctly, Detroit is feeding PO4 for the LCR, but since Flint is no longer part of that interconnection, I was wondering what their OCCT was. They are required to have OCCT in place which is why I was asking what they were using.

Mike Schock is our resident expert and may be able to help out with the simultaneous compliance (Pb & DBPs) so I would suggest that folks give him a call.

Miguel A. Del Toral

Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

From: Crooks, Jennifer
Sent: Thursday, February 26, 2015 04:15 PM
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Cc: Busch, Stephen (DEQ); Rosenthal, Adam (DEQ); Deltoral, Miguel; Poy, Thomas
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Miguel was wondering if Flint is feeding Phosphates. Flint must have Optimal Corrosion Control Treatment—is it Phosphates? Or is it pH/Alkalinity Adjustment? The reason he asks, is because systems using the pH/Alkalinity adjustment have problems with lead levels in the 100's or higher—and they have problems with random lead particulate matter in the distribution system. Miguel said that we all know that flushing regularly helps reduce the lead concentrations, but not immediately. The City can't just flush in advance of taking the compliance samples, they have to flush the lines on a regular schedule.

The problem with high lead issues, is that the water has so many different variables, that it's hard to pinpoint what is causing what problem where. From a public health perspective, can we assume that the high lead levels in Citizen name / Ex. 6 neighborhood are isolated to just her area? Or are they more widespread?

Please feel free to contact Miguel directly—312-886-5253; Deltoral.miguel@epa.gov.

Jennifer

From: Prysby, Mike (DEQ) [mailto:PRYSBYM@michigan.gov]
Sent: Thursday, February 26, 2015 10:25 AM
To: Crooks, Jennifer
Cc: Busch, Stephen (DEQ); Rosenthal, Adam (DEQ)
Subject: RE: HIGH LEAD: FLINT Water testing Results

Jennifer,

I recall Adam showing me a high lead/copper sample result (perhaps it was this one)….as part of the city's routine lead-copper monitoring. If so, it was a stagnated sample as part of the sampling protocol. Adam mentioned that all other samples were below the AL…and the city will not exceed the lead AL. I will confirm this. The city; however, needs to take further action to help address Citizen name / Ex. 6 concern. The type of plumbing needs to be identified and sample tap location within the premise plumbing. They should offer to re-sample for PB after flushing the tap to demonstrate that flushing the tap will reduce the lead concentration. The city also needs to provide other lead-reduction strategies to Citizen name / Ex. 6

Michael Prysby, P.E.

District Engineer

Office of Drinking Water and Municipal Assistance

517 290-8817

From: Crooks, Jennifer [mailto:crooks.jennifer@epa.gov]
Sent: Thursday, February 26, 2015 10:53 AM
To: Busch, Stephen (DEQ); Prysby, Mike (DEQ)
Cc: Poy, Thomas; Deltoral, Miguel
Subject: HIGH LEAD: FLINT Water testing Results

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Citizen name / Ex. 6

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Sent: Thursday, February 26, 2015 9:08 AM
To: Crooks, Jennifer
Subject: Fwd: Re: Water testing Results

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Date: Feb 26, 2015 7:55 AM
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To: **Personal Address / Ex. 6**
Cc:

Citizen name / Ex. 6

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From: Poy, Thomas
Sent: Sun 3/8/2015 6:29:03 PM
Subject: Re: HIGH LEAD: FLINT Water testing Results

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Tom Poy
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USEPA - Region 5
(312) 886-5991

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U.S. EPA (W-15J)
77 W. Jackson Blvd., Chicago, IL 60604-3590
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From: Wright, Michael
Sent: Mon 3/9/2015 1:33:32 PM
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26 W. Martin Luther King Drive (MS-A110)
Cincinnati, OH 45268
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> Mike

To: Burneson, Eric[Burneson.Eric@epa.gov]; Corr, Elizabeth[Corr.Elizabeth@epa.gov]; Clark, Becki[Clark.Becki@epa.gov]
Cc: Jennifer Crooks - EPA[Crooks.Jennifer@epa.gov]
From: Poy, Thomas
Sent: Mon 3/9/2015 2:17:08 PM
Subject: FW: HIGH LEAD: FLINT Water testing Results

Eric/Elizabeth/Becki: FYI…Below is some information from Michael Wright about the first technical advisory meeting. Health effects/recommendations messaging is a big issue.

Tom

Tom Poy

Chief, Ground Water and Drinking Water Branch

USEPA - Region 5

(312) 886-5991

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Sent: Monday, March 09, 2015 8:34 AM
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Subject: HIGH LEAD: FLINT Water testing Results

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To: Wright, Michael
Subject: Re: HIGH LEAD: FLINT Water testing Results

Hi Michael: How did the public meeting go? Is the main concern about the TTHM violation and its health effects? I know the reports of rashes is also on people's minds.

Tom

Tom Poy

Chief, Ground and Drinking Water Branch

USEPA - Region 5

(312) 886-5991

On Mar 2, 2015, at 7:50 AM, Wright, Michael <Wright.Michael@epa.gov> wrote:

> Thanks Tom. Any information is helpful at this stage.
>
> Please note that I won't be accessing this email while on travel, so please try me at **Personal Email / Ex. 6** after tonight.
>
> Mike
>
> J. Michael Wright, ScD
> U.S. Environmental Protection Agency
> National Center for Environmental Assessment

26 W. Martin Luther King Drive (MS-A110)
Cincinnati, OH 45268
513 569 7922 (phone)
513 487 2539 (fax)

From: Poy, Thomas
Sent: Friday, February 27, 2015 5:48 PM
To: Wright, Michael
Subject: FW: HIGH LEAD: FLINT Water testing Results

Hi Michael: I will be forwarding you some (hopefully) useful information about the DW situation in Flint. Last year they switch from purchasing water from Detroit (which treats Lake Huron water) to treating Flint River water. There is a pipeline being built that will give Flint access to Lake Huron which is to be completed in 2016. MDEQ has been working with Flint on their plant operations. Flint had an E coli detection last summer because of distribution system issue (valves causing stagnant water). They fixed the valves, flushed the lines and increased chlorine residuals. The extra chlorine has led to a TTHM violation. Again, MDEQ worked with Flint on operations and now, 7 of 8 samples are below the MCL (it may be 8 of 8 with the next round of sampling). Unfortunately, because TTHM compliance is calculated based on a running annual average, even though the water being served now meets standards, the violation doesn't go away for a few quarters. In the meantime, the city must continue to provide public notice about the violation. Now, there is at least one home that has high lead levels. See below.

Tom

Tom Poy

Chief, Ground Water and Drinking Water Branch

USEPA - Region 5

(312) 886-5991

From: Henry, Timothy
Sent: Thursday, February 26, 2015 11:27 AM
To: Poy, Thomas
Subject: RE: HIGH LEAD: FLINT Water testing Results

Please share this and anything additional you get on Flint with Michael Wright (ORD – Cinci) who will be participating on the Technical Advisory Committee. If you have other info on the situation in Flint, please pass that on too.

Tim Henry
Deputy Director, Water Division
U.S. EPA (W-15J)
77 W. Jackson Blvd., Chicago, IL 60604-3590
Phone: 312.886.6107 Fax: 312.692.2578

From: Poy, Thomas
Sent: Thursday, February 26, 2015 10:25 AM
To: Hyde, Tinka; Henry, Timothy
Subject: FW: HIGH LEAD: FLINT Water testing Results

Tinka/Tim: FYI…one resident in Flint had sediment in her water and the water plant tested it and found high iron and lead. Don't know if it is an individual home issue.

Tom

Tom Poy

Chief, Ground Water and Drinking Water Branch

USEPA - Region 5

(312) 886-5991

From: Crooks, Jennifer
Sent: Thursday, February 26, 2015 9:53 AM
To: Busch, Stephen (DEQ); Prysby, Mike (DEQ)
Cc: Poy, Thomas; Deltoral, Miguel

Subject: HIGH LEAD: FLINT Water testing Results

Hi, Steve and Mike. Thanks for talking with me yesterday, Steve, about the most recent TTHM results. We'll look forward to receiving them whenever you get them back from the lab.

However, the main purpose of my email is to alert you to the high lead levels reported to a citizen yesterday by Flint Water Dept. I have been discussing the water situation with Citizen name / Ex. 6 since January, and she has been talking with Mike Glasgow at the plant about the black sediment in her water. (HUGE KUDOs to MIKE!!) He did test it to find that the iron levels were greater than his test would go; GT 3.3. But, because the iron levels were so high, he suggested testing for lead and copper. WOW!!!! Did he find the LEAD! **104 ppb.** She has 2 children under the age of 3… Big worries here.

So, Steve, this goes back to what you and I were talking about yesterday. That the different chemistry water is leaching out contaminants from the insides of the biofilms inside the pipes. I think Lead is a good indication that other contaminants are also present in the tap water, that obviously were not present in the compliance samples taken at the plant. VOC/SOC and inorganics/metals would be good samples to start with to take at the tap. And since Ms. Walters' drinking water is showing the high lead levels, her tap water would be a good place to start, I think.

We also talked about Dr. Joan Rose from Michigan State being on the Flint Tech Advisory Committee—you also mentioned that someone from the Dept of Community Health was on the Committee. I'm thinking that Dr. Rose would want to dive further into this, since there's actual evidence that the water is leaching contaminants from the biofilms; or Dept of Community Health would want to get involved and look at this from an epidemiological perspective. (She and her family are also exhibiting the rashes when exposed to the water, and her daughter's hair is falling out in clumps.)

Maybe MSU could authorize the payment of the analyses for these samples? Or Dept of Community Health?

The citizen's name is:

Citizen name / Ex. 6

Personal Address / Ex. 6

Personal Email / Ex. 6

Jennifer

From: Personal Email / Ex. 6
Sent: Thursday, February 26, 2015 9:08 AM
To: Crooks, Jennifer
Subject: Fwd: Re: Water testing Results

---------- Forwarded message ----------
From: "Michael Glasgow" <mglasgow@cityofflint.com>
Date: Feb 26, 2015 7:55 AM
Subject: Re: Water testing Results
To: Personal Email / Ex. 6
Cc:

Citizen name / Ex. 6

Here are your Lead & Copper Results. This number is very high, 104 ppb of lead. In the last few months over 100 samples have been tested and only 2 were over the 15 ppb regulatory limit, and the highest level I have seen is 37 ppb. I will pass this info to Mr. Croft so he is aware. I will send the sample I collected from your kitchen faucet today for a complete metals test (12 different metals), to see what the level is without letting the water stagnate over night. I'm hoping that value will be much, but we will have to see. Sorry for this news, but I wanted to let you know right away.

Mike

On Tue, Feb 24, 2015 at 1:50 PM, Michael Glasgow <mglasgow@cityofflint.com> wrote:

Citizen name / Ex. 6

I will bring a copy of last years annual report when I stop by tomorrow. The annual report from 2014 must be delivered to residents by July 1st of this year. I imagine we may have it complete by June.

Mike

On Fri, Feb 20, 2015 at 1:00 AM, Lea Moste <Personal Email / Ex. 6> wrote:

> Mike,
>
> Thank you for the water reports and we already planned to see you on the 25th at 10:00am. I was wondering if you know who I need to talk to in the water plant to obtain the Annual Drinking Water Report from last year. According to the EPA website there is link to access but when you click on it, it cannot be accessed. Was also curious if there is an expected time frame for this years report due to the switch. If you can be of any assistance I would appreciate it.
>
> Thank You
>
> Citizen name / Ex. 6
>
> On Thu, Feb 19, 2015 at 12:47 PM, Michael Glasgow <mglasgow@cityofflint.com> wrote:
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>> Citizen name / Ex. 6
>>
>> Here is a list of test results from water sampled at your home over the last 2 weeks. I have sent in your lead and copper sample, and also a sample from the toilet tank for manganese. I should hopefully have results from this testing early next week. I'll plan on stopping over on Wednesday (the 25th)

around 10 am again to give you these results & sample again.

Mike

To: Hedman, Susan[hedman.susan@epa.gov]
Cc: Hyde, Tinka[hyde.tinka@epa.gov]; Poy, Thomas[poy.thomas@epa.gov]
From: Henry, Timothy
Sent: Mon 3/9/2015 2:31:50 PM
Subject: Fwd: FLINT Technical Advisory Committee

Susan
I had asked Tom to follow up with Dr Wright after the meeting last week. Here is what he heard back. We will also work to set up a call per your request.

Tim Henry
Deputy Director, Water Division
US EPA Region V
312-886-6107 (office)
312-296-0690 (cell)

Sent from my iPhone

Begin forwarded message:

From: "Poy, Thomas" <poy.thomas@epa.gov>
Date: March 9, 2015 at 10:20:44 EDT
To: "Henry, Timothy" <henry.timothy@epa.gov>, "Hyde, Tinka" <hyde.tinka@epa.gov>
Subject: FW: FLINT Technical Advisory Committee

Tinka/Tim: Below is Michael Wright's impression of the Technical Advisory Committee's first meeting. Health effects/recommendations messaging seems like the biggest issue.

Tom

Tom Poy

Chief, Ground Water and Drinking Water Branch

USEPA - Region 5

(312) 886-5991

From: Wright, Michael
Sent: Monday, March 09, 2015 8:34 AM
To: Poy, Thomas
Cc: Henry, Timothy
Subject: HIGH LEAD: FLINT Water testing Results

Hi Tom:

By all accounts (the mayor, councilmen, other technical panel members, etc), the meeting went really well and it was worth the trek up there. We had a very good discussion about the technical issues and I sat in on some other ones regarding messaging and their next steps. In general, I think that their proposed treatment changes are on track to tackle some of the changes in water quality including DBP reductions. Of course, this will take some time to get "on line".

The more challenging aspect (and pressing issue) may be handling issues related to the public's concerns. I didn't witness the subsequent public meeting the next day, since I was unaware of until the day of our meeting. In hindsight, I think they had hoped some technical folks would be in the room to help field questions (although I'm not sure that would be preferred from our end). Anyway, during our meeting, I didn't see or hear much more about the rashes (or other symptoms) but it's hard to tackle that when it's anectodal and not based on a study or some concerted health effects characterization (by trained personnel). We had clinicians in the room and from what I heard, yes (to answer your question), the main concern from them was how to provide recommendations to the public given the language in the violation notice. One issue I raised is that there seemed to be "residual" language in there about having immunompromised and infants/elderly populations contact their physicians, since this is related to an earlier coliform issue. As far as I know, the canned language on THM violations is regarding potential cancer risk. I think the jury is still out on other potential risks (like developmental effects).

The clinicians and the city officials were looking for specific recommendations on what to tell the public beyond this… I told a few folks there (and Howard Craft afterward) that I can share with them the science behind reducing DBP exposure (and potential risk), in general, but that THM4 is just a surrogate of DBP exposures of which there is many hundred (>1200) that have been identified. Obviously this greatly complicates our exposure assessment efforts in epidemiological studies and in general, but it also comes into play when trying to provide recommendations to reduce exposure. For e.g., volatile DBPs like the THMs may be largely based on dermal absorption and inhalation, so some measures to reduce exposure like point of use filters (e.g., Britta) will only address ingestion levels and not the predominant exposure routes. Granted that Britta and other filters will reduce other DBPs (like HAAs) in general, but the volatile ones are more readily removed. The same story holds for measures like boiling water. Where our research (and others) show that some DBPs are readily removed upon heating and boiling (THMs), others can increase upon heating of water (e.g., HAAs). I sent Howard two publications related to this intended for the technical committee.

So, a long answer regarding next steps is that I'm not sure what else we can provide the public right now. Because, it's not like we're just dealing w/ one contaminants, it's much more complex than that re: the potential concerns regarding DBPs. Am sure they'll be follow-up this week w/ the committee.

I hope this helps?

Mike

PS: On a comparative risk level, I'd be much more concerned about the Lead situation *IF* the chemistry (or water characteristics, in general) changes are resulting in higher concentrations. As you likely know, high lead levels are often resulting from residential pipes and not the city water (or the main lines) per se. They showed us data that there haven't been any lead violations in their tested samples, and they've offered to test any citizen's water for this and other contaminants if they provide a sample. As for the citizen in the email below, I'd STRONGLY recommend they seek medical advice ASAP based on the reported levels and especially if alopecia is occurring (a symptom of severe lead poisoning).

J. Michael Wright, ScD
U.S. Environmental Protection Agency
National Center for Environmental Assessment
26 W. Martin Luther King Drive (MS-A110)
Cincinnati, OH 45268
513 569 7922 (phone)
513 487 2539 (fax)

To: Poy, Thomas[poy.thomas@epa.gov]
From: Crooks, Jennifer
Sent: Mon 3/9/2015 4:39:26 PM
Subject: RE: HIGH LEAD: FLINT Water testing Results

Yes! You did send this to me. Thank you!

From: Poy, Thomas
Sent: Monday, March 09, 2015 9:17 AM
To: Burneson, Eric; Corr, Elizabeth; Clark, Becki
Cc: Crooks, Jennifer
Subject: FW: HIGH LEAD: FLINT Water testing Results

Eric/Elizabeth/Becki: FYI…Below is some information from Michael Wright about the first technical advisory meeting. Health effects/recommendations messaging is a big issue.

Tom

Tom Poy

Chief, Ground Water and Drinking Water Branch

USEPA - Region 5

(312) 886-5991

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USEPA - Region 5

(312) 886-5991

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Subject: RE: HIGH LEAD: FLINT Water testing Results

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Deputy Director, Water Division
U.S. EPA (W-15J)
77 W. Jackson Blvd., Chicago, IL 60604-3590
Phone: 312.886.6107 Fax: 312.692.2578

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To: Hyde, Tinka; Henry, Timothy
Subject: FW: HIGH LEAD: FLINT Water testing Results

Tinka/Tim: FYI…one resident in Flint had sediment in her water and the water plant tested it and found high iron and lead. Don't know if it is an individual home issue.

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USEPA - Region 5

(312) 886-5991

From: Crooks, Jennifer
Sent: Thursday, February 26, 2015 9:53 AM
To: Busch, Stephen (DEQ); Prysby, Mike (DEQ)
Cc: Poy, Thomas; Deltoral, Miguel
Subject: HIGH LEAD: FLINT Water testing Results

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Maybe MSU could authorize the payment of the analyses for these samples? Or Dept of Community Health?

The citizen's name is:

Personal Address / Ex. 6

Jennifer

From: Personal Email / Ex. 6
Sent: Thursday, February 26, 2015 9:08 AM
To: Crooks, Jennifer
Subject: Fwd: Re: Water testing Results

---------- Forwarded message ----------
From: "Michael Glasgow" <mglasgow@cityofflint.com>
Date: Feb 26, 2015 7:55 AM
Subject: Re: Water testing Results
To: Personal Email / Ex. 6
Cc:

Lee,

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>> Thank You
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>> **Citizen name / Ex. 6**

On Thu, Feb 19, 2015 at 12:47 PM, Michael Glasgow <mglasgow@cityofflint.com> wrote:

Citizen name / Ex. 6 & Dennis,

Here is a list of test results from water sampled at your home over the last 2 weeks. I have sent in your lead and copper sample, and also a sample from the toilet tank for manganese. I should hopefully have results from this testing early next week. I'll plan on stopping over on Wednesday (the 25th) around 10 am again to give you these results & sample again.

Mike

To: Deltoral, Miguel[deltoral.miguel@epa.gov]
Cc: Porter, Andrea[porter.andrea@epa.gov]; Poy, Thomas[poy.thomas@epa.gov]; Harris, Kimberly[harris.kimberly@epa.gov]
From: Crooks, Jennifer
Sent: Wed 3/18/2015 4:45:08 PM
Subject: RE: HIGH LEAD: FLINT Water testing Results

Miguel--I talked with Tom P about this second very high lead result. When I talk with Ms. Citizen name / Ex. 6 will ask her who took the lead sample for analysis—probably Mike from the Water Plant, that took the last lead sample at her home. When sampling for lead at ad hoc requests, is he supposed to follow the sampling protocol for compliance samples?

Assuming that the water was flushed in the surrounding neighborhood, could the high lead be coming from high lead particulate, as discussed below from the iron filter? Should I suggest that Ms. Walters by-pass the iron filter to sample for lead? Clean out the aerators to remove particulate lead? Could particulate lead be sitting in the bottom of her hot water heater and be going into solution?

Tom thought the State would know if the City been looking for particulate lead. Is there a different sampling protocol for particulate lead? Different Analysis?

Thanks, Miguel.

Jen

From: Crooks, Jennifer
Sent: Tuesday, March 03, 2015 11:45 AM
To: Busch, Stephen (DEQ); Deltoral, Miguel
Cc: Rosenthal, Adam (DEQ); Poy, Thomas; Porter, Andrea; Prysby, Mike (DEQ)
Subject: Re: HIGH LEAD: FLINT Water testing Results

Hi, Steve. I found that interesting that the Walters' interior piping is all PVC, and they have an iron pre-filter at the service connection. I remember in a discussion with Miguel, and maybe he can explain further, that systems with iron removal treatment had higher levels of lead at the tap, especially if the bacteria had been allowed to overgrow the filter. Seems there was a higher amount of lead particulate in the system. Miguel said in his email to us on 2/27 at 4:58am, that:

“Fe/Mn can transport lead from the lead service lines into the home. The lead sorbs onto the Fe/Mn particles. In SW systems, the Fe typically is released from the water mains.”

Perhaps the iron pre-filter is contributing to the high lead levels?

Jennifer

From: Busch, Stephen (DEQ) <BUSCHS@michigan.gov>
Sent: Friday, February 27, 2015 12:48 PM
To: Crooks, Jennifer; Deltoral, Miguel
Cc: Rosenthal, Adam (DEQ); Poy, Thomas; Porter, Andrea; Prysby, Mike (DEQ); Benzie, Richard (DEQ); shekterl@michigan.gov
Subject: RE: HIGH LEAD: FLINT Water testing Results

Miguel and Jennifer,

Thank you for this information, we will take it under consideration.

The City of Flint:

- Has a 90th percentile lead level of 6.0 ppb based on 100 samples collected in its most recent monitoring period of 7/1/2014 – 12/31/2014, with 2 samples (23 & 37 ppb) over the AL.

- Has a 90th percentile copper level of 110 ppb based on 100 samples collected in its most recent monitoring period of 7/1/2014 – 12/31/2014, with no samples over the Cu AL.

- Has an Optimized Corrosion Control Program

- Conducts quarterly Water Quality Parameter monitoring at 25 sites and has not had any unusual results.

- Has never had a 90th percentile lead AL exceedance

- Continues to meet all applicable plant tap standards and treatment technique requirements at its WTP

- Has developed and implemented an Operational Evaluation of its treatment and distribution systems, and continues to adjust and update this OE based on updated quarterly results

My understanding from Ben Grumbles and the LCR Short Term Revisions is that "EPA regulations require water systems to develop a targeted sampling pool, focused on those sites with the greatest risk of lead leaching. All compliance samples used to determine the 90th percentile must come from that sampling pool." [40 CFR 141.80(c)(1)], 56 Fed Reg. 26518 (June, 7, 1991), [40CFR 141.90(a)(1)(v), and 40 CFR 141.90(h)(2)]. Our office continues to work with our community water systems to follow these and all other requirements of the current lead and copper regulations.

212 Browning, the site in question, is not part of the City's established sample site pool. The residence consists of PVC plumbing materials, and has an iron pre-filter at the service connection.

Regarding TTHM, the most recent quarter monitoring from February 2015 was issued today by the lab.

While 2 of the 8 DBP compliance sites continue to have an LRAA that exceeds the standard, quarterly results at all 8 DBP compliance sites were below less than half the standard level of 80 ppb, the highest being 28.5 ppb. Only one site now has an OEL over 80 ppb, at 85 ppb.

Stephen Busch, P.E.

Lansing and Jackson District Supervisor

Office of Drinking Water and Municipal Assistance

MDEQ

517-643-2314

From: Crooks, Jennifer [mailto:crooks.jennifer@epa.gov]
Sent: Friday, February 27, 2015 11:05 AM
To: Deltoral, Miguel; Prysby, Mike (DEQ)
Cc: Busch, Stephen (DEQ); Rosenthal, Adam (DEQ); Poy, Thomas; Porter, Andrea
Subject: Re: HIGH LEAD: FLINT Water testing Results

Hi, Steve and Mike. I talked with Miguel, and he said if you all would be interested in getting input from our expert, Mike Schock at EPA Cincinnatti Research, on the Flint distribution system issues and dealing with lead and DBP's together, you should contact Mike directly--here is his information.

schock.michael@epa.gov

(513) 569-7412

Jennifer

From: Deltoral, Miguel
Sent: Friday, February 27, 2015 4:58 AM
To: Crooks, Jennifer; Prysby, Mike (DEQ)
Cc: Busch, Stephen (DEQ); Rosenthal, Adam (DEQ); Poy, Thomas; Schock, Michael; Porter, Andrea
Subject: Re: HIGH LEAD: FLINT Water testing Results

Jen/all - I think things got garbled in translation...

What I was saying is that where you find Pb values that high, it is usually due to particulate lead. Not always, but generally. Particulate lead is released sporadically from lead service lines, leaded solder and leaded brass in a number of ways and folks tend to discount these values as anomalies, but particulate lead release is a normal part of the corrosion process and it is universal (common) in all systems. It’s just that it is not captured as often by the infrequent LCR sampling. If systems are pre-flushing the tap the night before collec on thisting LCR compliance samples (MDEQ still provides these instructions to public water systems) this clears particulate lead out of the plumbing and biases the results low by eliminating the highest lead values. If systems are pre-flushing and still finding particulate lead, the amount of particulate lead in the system can be higher than what is being detected using these ‘pre-flushed’ first-draw samples. My point on that was that people are exposed to the particulate lead on a daily basis, but the particulate lead is being flushed away before collecting compliance samples which provides false assurance to residents about the true lead levels in the water.

Some quick notes on particulate lead release:

- Fe/Mn can transport lead from the lead service lines into the home. The lead sorbs onto the Fe/Mn particles. In GW systems, Fe/Mn can come from the source water and more Fe from the water mains. In SW systems, the Fe typically is released from the water mains.
- Lead released from lead service lines can also 'seed' galvanized iron pipes inside the homes. Again, the lead sorbs onto the iron on the pipes and be released sporadically. Generally, the higher the flow, the more Fe and Fe+Pb particulate you will likely get.
- If there is a partial lead service line (lead connected to copper) you can get additional lead release due to galvanic corrosion.
- Leaded brasses and solder can also release particulate lead under certain circumstances.
- The particulate can contain very high concentrations of lead (hundreds to thousands of ppb Pb) which is a much higher concentration than lead paint, so even small particles can result in high lead values.
- If the lead service line was disturbed (water main repair/replacement, meter installation repair/replacement, service line leak repairs, etc.) you can have VERY high lead levels in the scale and sediment that is dislodged from the inside of lead service lines. Here in Chicago, during a partial lead service line replacement, we collected the scale and sediment that came into the home and we found 300,000+ ug/L lead in the scale; 125,000 ug/L Pb in the sediment. Very dangerous.
- Higher levels of PO4 (3-4 mg/L Ortho) seem to reduce the amount of particulate Pb that is released in the absence of physical disturbances to the lead lines. Doesn’t stop it entirely, but should generally reduce the occurrence. Caveat – Other water quality issues can change the chemical complexes that form on the pipe, so cleaner sources with more consistent WQ form more predictable scale complexes.

If I remember correctly, Detroit is feeding PO4 for the LCR, but since Flint is no longer part of that interconnection, I was wondering what their OCCT was. They are required to have OCCT in place which is why I was asking what they were using.

Mike Schock is our resident expert and may be able to help out with the simultaneous compliance (Pb & DBPs) so I would suggest that folks give him a call.

Miguel A. Del Toral

Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604

Phone: (312) 886-5253

From: Crooks, Jennifer
Sent: Thursday, February 26, 2015 04:15 PM
To: Prysby, Mike (DEQ)
Cc: Busch, Stephen (DEQ); Rosenthal, Adam (DEQ); Deltoral, Miguel; Poy, Thomas
Subject: HIGH LEAD: FLINT Water testing Results

Thank you, Mike. These results are dated 2/18/15, so they're probably different results than the results Adam had, but they still have to be included in with compliance calculation of the 90th percentile. What dates are the earlier compliance samples?

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I talked with Miguel Del Toral about his knowledge on research on lead. He said that high levels of iron, usually bring high levels of lead. The large amount of black sediment at Mrs. Walters' home, is most likely particulate lead, Miguel said, where the lead actually bonds to the iron sediment. While the particulates of lead/iron are small, they're very highly concentrated with lead—up to 95% lead.

Miguel was wondering if Flint is feeding Phosphates. Flint must have Optimal Corrosion Control Treatment—is it Phosphates? Or is it pH/Alkalinity Adjustment? The reason he asks, is because systems using the pH/Alkalinity adjustment have problems with lead levels in the 100's or higher—and they have problems with random lead particulate matter in the distribution system. Miguel said that we all know that flushing regularly helps reduce the lead concentrations, but not immediately. The City can't just flush in advance of taking the compliance samples, they have to flush the lines on a regular schedule.

The problem with high lead issues, is that the water has so many different variables, that it's hard to pinpoint what is causing what problem where. From a public health perspective, can we assume that the high lead levels in Mrs. Walters' neighborhood are isolated to just her area? Or are they more widespread?

Please feel free to contact Miguel directly—312-886-5253; Deltoral.miguel@epa.gov.

Jennifer

From: Prysby, Mike (DEQ) [mailto:PRYSBYM@michigan.gov]
Sent: Thursday, February 26, 2015 10:25 AM
To: Crooks, Jennifer
Cc: Busch, Stephen (DEQ); Rosenthal, Adam (DEQ)
Subject: RE: HIGH LEAD: FLINT Water testing Results

Jennifer,

I recall Adam showing me a high lead/copper sample result (perhaps it was this one)....as part of the city's routine lead-copper monitoring. If so, it was a stagnated sample as part of the sampling protocol. Adam mentioned that all other samples were below the AL...and the city will not exceed the lead AL. I will confirm this. The city; however, needs to take further action to help address Citizen name / Ex. 6 concern. The type of plumbing needs to be identified and sample tap location within the premise plumbing. They should offer to re-sample for PB after flushing the tap to demonstrate that flushing the tap will reduce the lead concentration. The city also needs to provide other lead-reduction strategies to Citizen name / Ex. 6.

Michael Prysby, P.E.

District Engineer

Office of Drinking Water and Municipal Assistance

517 290-8817

From: Crooks, Jennifer [mailto:crooks.jennifer@epa.gov]
Sent: Thursday, February 26, 2015 10:53 AM
To: Busch, Stephen (DEQ); Prysby, Mike (DEQ)
Cc: Poy, Thomas; Deltoral, Miguel
Subject: HIGH LEAD: FLINT Water testing Results

Hi, Steve and Mike. Thanks for talking with me yesterday, Steve, about the most recent TTHM results. We'll look forward to receiving them whenever you get them back from the lab.

However, the main purpose of my email is to alert you to the high lead levels reported to a citizen yesterday by Flint Water Dept. I have been discussing the water situation with Citizen name / Ex. 6 Citizen name / Ex. 6 since January, and she has been talking with Mike Glasgow at the plant about the black sediment in her water. (HUGE KUDOs to MIKE!!) He did test it to find that the iron levels were greater than his test would go; GT 3.3. But, because the iron levels were so high, he suggested testing for lead and copper. WOW!!!! Did he find the LEAD! **104 ppb.** She has 2 children under the age of 3… Big worries here.

So, Steve, this goes back to what you and I were talking about yesterday. That the different chemistry water is leaching out contaminants from the insides of the biofilms inside the pipes. I think Lead is a good indication that other contaminants are also present in the tap water, that obviously were not present in the compliance samples taken at the plant. VOC/SOC and inorganics/metals would be good samples to start with to take at the tap. And since Citizen name / Ex. 6 drinking water is showing the high lead levels, her tap water would be a good place to start, I think.

We also talked about Dr. Joan Rose from Michigan State being on the Flint Tech Advisory Committee—you also mentioned that someone from the Dept of Community Health was on the Committee. I'm thinking that Dr. Rose would want to dive further into this, since there's actual evidence that the water is leaching contaminants from the biofilms; or Dept of Community Health would want to get involved and look at this from an epidemiological perspective. (She and her family are also exhibiting the rashes when exposed to the water, and her daughter's hair is falling out in clumps.)

Maybe MSU could authorize the payment of the analyses for these samples? Or Dept of Community Health?

The citizen's name is:

Personal Address / Ex. 6

Personal Email / Ex. 6

Jennifer

From: Personal Email / Ex. 6
Sent: Thursday, February 26, 2015 9:08 AM
To: Crooks, Jennifer
Subject: Fwd: Re: Water testing Results

---------- Forwarded message ----------
From: "Michael Glasgow" <mglasgow@cityofflint.com>
Date: Feb 26, 2015 7:55 AM
Subject: Re: Water testing Results
To: Personal Email / Ex. 6
Cc:

Lee,

Here are your Lead & Copper Results. This number is very high, 104 ppb of lead. In the last few months over 100 samples have been tested and only 2 were over the 15 ppb regulatory limit, and the highest level I have seen is 37 ppb. I will pass this info to Mr. Croft so he is aware. I will send the sample I collected from your kitchen faucet today for a complete metals test (12 different metals), to see what the level is without letting the water stagnate over night. I'm hoping that value will be much, but we will have to see. Sorry for this news, but I wanted to let you know right away.

Mike

On Tue, Feb 24, 2015 at 1:50 PM, Michael Glasgow <mglasgow@cityofflint.com> wrote:

Lee,

I will bring a copy of last years annual report when I stop by tomorrow. The annual report from 2014 must be delivered to residents by July 1st of this year. I imagine we may have it complete by June.

Mike

On Fri, Feb 20, 2015 at 1:00 AM, Personal Email / Ex. 6 wrote:

> Mike,
>
> Thank you for the water reports and we already planned to see you on the 25th at 10:00am. I was wondering if you know who I need to talk to in the water plant to obtain the Annual Drinking Water Report from last year. According to the EPA website there is link to access but when you click on it, it cannot be accessed. Was also curious if there is an expected time frame for this years report due to the switch. If you can be of any assistance I would appreciate it.
>
> Thank You
>
> Citizen name / Ex. 6
>
> On Thu, Feb 19, 2015 at 12:47 PM, Michael Glasgow <mglasgow@cityofflint.com> wrote:
>
>> Citizen name / Ex. 6
>>
>> Here is a list of test results from water sampled at your home over the last 2 weeks. I have sent in your lead and copper sample, and also a sample from the toilet tank for manganese. I should hopefully have results from this testing early next week. I'll plan on stopping over on Wednesday (the 25th) around 10 am again to give you these results & sample again.

Mike

To: Crooks, Jennifer[crooks.jennifer@epa.gov]
Cc: Porter, Andrea[porter.andrea@epa.gov]; Poy, Thomas[poy.thomas@epa.gov]; Harris, Kimberly[harris.kimberly@epa.gov]; Shoven, Heather[shoven.heather@epa.gov]
From: Deltoral, Miguel
Sent: Wed 3/18/2015 7:26:48 PM
Subject: Re: HIGH LEAD: FLINT Water testing Results

I think we need to take a step back. The compliance data is first-draw and MI also still has pre-flushing in their guidance. I don't know if they are using that protocol for compliance or investigative sampling either, but my sense is a result above 300ppb is particulate lead, or at least i sincerely hope it is. Particulate lead could be a result of a number of things:

changing the water source and increasing the soluble lead (i sincerely hope this is not the case, but levels got that high and higher in DC)

changing the water source and destabilizing the scale so particles come off

changing the water source increased NOM which can increase solubility of leaded-solder and also lead release from lead service lines

accumulation of lead from a lead service line on the iron filter (Pb sorbs onto the iron) so the iron filter essentially becomes a lead sink

We do have a suggested protocol for fully disgesting particulate lead, but i think the bigger picture issue i have is what the real lead levels look like given the changes to source and treatment that they made. i'm afraid that people may be exposed to high or very high lead levels and we may not know it given the sampling. If we can do it, my recommendation is to do some sequential sampling to find out what the lead levels are right now. we are outside of the compliance window so this would be investigative sampling. without real data, i can't do any type of assessment as to where they are at on lead levels.

Miguel A. Del Toral
Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

From: Crooks, Jennifer
Sent: Wednesday, March 18, 2015 11:45 AM
To: Deltoral, Miguel
Cc: Porter, Andrea; Poy, Thomas; Harris, Kimberly
Subject: RE: HIGH LEAD: FLINT Water testing Results

Miguel--I talked with Tom P about this second very high lead result. When I talk with Ms. Citizen Name / Ex. 6 I will ask her who took the lead sample for analysis—probably Mike from the Water Plant, that took the last lead sample at her home. When sampling for lead at ad hoc requests, is he supposed to follow the sampling protocol for compliance samples?

Assuming that the water was flushed in the surrounding neighborhood, could the high lead be coming from high lead particulate, as discussed below from the iron filter? Should I suggest that Citizen Name / Ex. 6 by-pass the iron filter to sample for lead? Clean out the aerators to remove particulate lead? Could particulate lead be sitting in the bottom of her hot water heater and be going into solution?

Tom thought the State would know if the City been looking for particulate lead. Is there a different sampling protocol for particulate lead? Different Analysis?

Thanks, Miguel.

Jen

From: Crooks, Jennifer
Sent: Tuesday, March 03, 2015 11:45 AM
To: Busch, Stephen (DEQ); Deltoral, Miguel
Cc: Rosenthal, Adam (DEQ); Poy, Thomas; Porter, Andrea; Prysby, Mike (DEQ)
Subject: Re: HIGH LEAD: FLINT Water testing Results

Hi, Steve. I found that interesting that the Citizen Name / Ex. 6 interior piping is all PVC, and they have an iron pre-filter at the service connection. I remember in a discussion with Miguel, and maybe he can explain further, that systems with iron removal treatment had higher levels of lead at the tap, especially if the bacteria had been allowed to overgrow the filter. Seems there was a higher amount of lead particulate in the system. Miguel said in his email to us on 2/27 at 4:58am, that:

"Fe/Mn can transport lead from the lead service lines into the home. The lead sorbs onto the Fe/Mn particles. In SW systems, the Fe typically is released from the water mains."

Perhaps the iron pre-filter is contributing to the high lead levels?

Jennifer

From: Busch, Stephen (DEQ) <BUSCHS@michigan.gov>
Sent: Friday, February 27, 2015 12:48 PM
To: Crooks, Jennifer; Deltoral, Miguel
Cc: Rosenthal, Adam (DEQ); Poy, Thomas; Porter, Andrea; Prysby, Mike (DEQ); Benzie, Richard (DEQ); shekterl@michigan.gov
Subject: RE: HIGH LEAD: FLINT Water testing Results

Miguel and Jennifer,

Thank you for this information, we will take it under consideration.

The City of Flint:

- Has a 90th percentile lead level of 6.0 ppb based on 100 samples collected in its most recent monitoring period of 7/1/2014 – 12/31/2014, with 2 samples (23 & 37 ppb) over the AL.
- Has a 90th percentile copper level of 110 ppb based on 100 samples collected in its most recent monitoring period of 7/1/2014 – 12/31/2014, with no samples over the Cu AL.
- Has an Optimized Corrosion Control Program
- Conducts quarterly Water Quality Parameter monitoring at 25 sites and has not had any unusual results.
- Has never had a 90th percentile lead AL exceedance
- Continues to meet all applicable plant tap standards and treatment technique requirements at its WTP
- Has developed and implemented an Operational Evaluation of its treatment and distribution systems, and continues to adjust and update this OE based on updated quarterly results

My understanding from Ben Grumbles and the LCR Short Term Revisions is that "EPA regulations require water systems to develop a targeted sampling pool, focused on those sites with the greatest risk of lead leaching. All compliance samples used to determine the 90th percentile must come from that sampling pool." [40 CFR 141.80(c)(1)], 56 Fed Reg. 26518 (June, 7, 1991), [40CFR 141.90(a)(1)(v), and 40 CFR 141.90(h)(2)]. Our office continues to work with our community water systems to follow these and all other requirements of the current lead and copper regulations.

Personal Address / Ex. 6 [redacted] the site in question, is not part of the City's established sample site pool. The residence consists of PVC plumbing materials, and has an iron pre-filter at the service connection.

Regarding TTHM, the most recent quarter monitoring from February 2015 was issued today by the lab.

While 2 of the 8 DBP compliance sites continue to have an LRAA that exceeds the standard, quarterly results at all 8 DBP compliance sites were below less than half the standard level of 80 ppb, the highest being 28.5 ppb. Only one site now has an OEL over 80 ppb, at 85 ppb.

Stephen Busch, P.E.

Lansing and Jackson District Supervisor

Office of Drinking Water and Municipal Assistance

MDEQ

517-643-2314

From: Crooks, Jennifer [mailto:crooks.jennifer@epa.gov]
Sent: Friday, February 27, 2015 11:05 AM
To: Deltoral, Miguel; Prysby, Mike (DEQ)
Cc: Busch, Stephen (DEQ); Rosenthal, Adam (DEQ); Poy, Thomas; Porter, Andrea
Subject: Re: HIGH LEAD: FLINT Water testing Results

Hi, Steve and Mike. I talked with Miguel, and he said if you all would be interested in getting input from our expert, Mike Schock at EPA Cincinnatti Research, on the Flint distribution system issues and dealing with lead and DBP's together, you should contact Mike directly--here is his information.

schock.michael@epa.gov

(513) 569-7412

Jennifer

From: Deltoral, Miguel
Sent: Friday, February 27, 2015 4:58 AM
To: Crooks, Jennifer; Prysby, Mike (DEQ)
Cc: Busch, Stephen (DEQ); Rosenthal, Adam (DEQ); Poy, Thomas; Schock, Michael; Porter, Andrea
Subject: Re: HIGH LEAD: FLINT Water testing Results

Jen/all - I think things got garbled in translation...

What I was saying is that where you find Pb values that high, it is usually due to particulate lead. Not always, but generally. Particulate lead is released sporadically from lead service lines, leaded solder and leaded brass in a number of ways and folks tend to discount these values as anomalies, but particulate lead release is a normal part of the corrosion process and it is universal (common) in all systems. It's just that it is not captured as often by the infrequent LCR sampling. If systems are pre-flushing the tap the night before collec on thisting LCR compliance samples (MDEQ still provides these instructions to public water systems) this clears particulate lead out of the plumbing and biases the results low by eliminating the highest lead values. If systems are pre-flushing and still finding particulate lead, the amount of particulate lead in the system can be higher than what is being detected using these 'pre-flushed' first-draw samples. My point on that was that people are exposed to the particulate lead on a daily basis, but the particulate lead is being flushed away before collecting compliance samples which provides false assurance to residents about the true lead levels in the water.

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Cc: Busch, Stephen (DEQ); Rosenthal, Adam (DEQ); Deltoral, Miguel; Poy, Thomas
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Jennifer

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Michael Prysby, P.E.

District Engineer

Office of Drinking Water and Municipal Assistance

517 290-8817

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Maybe MSU could authorize the payment of the analyses for these samples? Or Dept of Community Health?

The citizen's name is:

Personal Address / Ex. 6 [redacted]

Jennifer

From: Nonresponsive Personal Email / Ex. 6
Sent: Thursday, February 26, 2015 9:08 AM
To: Crooks, Jennifer
Subject: Fwd: Re: Water testing Results

---------- Forwarded message ----------
From: "Michael Glasgow" <mglasgow@cityofflint.com>
Date: Feb 26, 2015 7:55 AM
Subject: Re: Water testing Results
To: 'Nonresponsive Personal Email / Ex. 6
Cc:

Personal name / Ex. 6

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Citizen name / Ex. 6

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>>
>> Mike

To: Poy, Thomas[poy.thomas@epa.gov]
Cc: Bair, Rita[bair.rita@epa.gov]; Damato, Nicholas[damato.nicholas@epa.gov]; Porter, Andrea[porter.andrea@epa.gov]
From: Deltoral, Miguel
Sent: Fri 3/20/2015 6:05:00 PM
Subject: Re: Slightly Revised Update on Flint

Hi again,

Just FYI, MI is the only R5 State that still has pre-flushing in their LCR sampling guidance to PWSs. Given what we now know about how much lead is coming off the LSLs, especially in low flow conditions as highlighted by the this flint situation, I think we need to have a conversation with DEQ about rescinding that guidance. If this poor woman's LSL was shorter, the results would be much, much lower and she may very well have been told by the PWS that her lead levels are fine and her children would end up lead-poisoned.

Miguel A. Del Toral
Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

From: Deltoral, Miguel
Sent: Friday, March 20, 2015 11:14 AM
To: Poy, Thomas; Crooks, Jennifer
Cc: Bair, Rita; Damato, Nicholas; Porter, Andrea; Noureldin, Mostafa; Lytle, Darren; Triantafyllidou, Simoni; Schock, Michael
Subject: Slightly Revised Update on Flint

Sorry, I forgot to include a note from Mr. Glasgow about a video Citizen name / Ex. 6 showed him where her son had a full body rash 10 minutes after bathing, so I added that to the revised summary (attached).

Miguel A. Del Toral
Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

From: Deltoral, Miguel
Sent: Friday, March 20, 2015 10:54 AM
To: Poy, Thomas; Crooks, Jennifer

Cc: Bair, Rita; Damato, Nicholas; Porter, Andrea; Noureldin, Mostafa; Lytle, Darren; Triantafyllidou, Simoni; Schock, Michael
Subject: Update on Flint

Good morning folks,

Yesterday I spoke with Citizen name / Ex. 6 regarding the high lead results at her home, and this morning I spoke with Mike Glasgow from the Flint water department. Attached are my notes from those conversations. I did not discuss anything on Legionella with either person as I thought it best to let more knowledgeable folks handle this, but they are flushing water mains so this might be something that EPA and DEQ folks should look into.

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To: Poy, Thomas[poy.thomas@epa.gov]
Cc: Bair, Rita[bair.rita@epa.gov]; Porter, Andrea[porter.andrea@epa.gov]; Crooks, Jennifer[crooks.jennifer@epa.gov]
From: Deltoral, Miguel
Sent: Wed 3/25/2015 2:46:08 PM
Subject: Fw: water testing
Personal Address / Ex. 6 Feb 2015).xlsx

FYI - I just left Citizen Name / Ex. 6 a voicemail to follow up on this. During the last call she mentioned that the blood testing was done well after they stopped drinking the water so I want to put together the timeline better and to check what has happened on the LSL replacement. The DEQ indicated in a voicemail that it was the resident's responsibility to hire a plumber to fix the problem, which conflicts with information provided by Citizen name / Ex. 6 Citizen name / Ex. 6 and the Flint water department saying the line was to be replaced at no expense to the homeowner and hooked up to the water main Personal Address / Ex. 6 in front of her home.

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From: Citizen Name / Ex. 6 < **Personal Address / Ex. 6** >
Sent: Monday, March 23, 2015 06:03 PM
To: Deltoral, Miguel
Subject: Re: water testing

Mr. Del Toral
The first lead test that was done Personal Matters / Ex. 6 was in October 2012, I am waiting for a call back for the exact date, and I will email you as soon as I have that. The test in October 2012 showed their lead levels Personal Matters / Ex. 6 The second test was just done February 27, 2015 and that showed their lead level Personal Matters / Ex. 6 Yes we have a water meter, it is in the basement. When the city worker came out March 19th they were unable to find my shut off outside, and they believe I have a lead service line but there is no documentation the city has to confirm. According the old map from the city my service line is 136 ft from my house, and I am connected on **Personal Matters / Ex. 6** I am attaching a spreadsheet that I received from Mike Glasgow from the water department, I don't know if you already have it but I wanted to make sure.
Thank you
Citizen Name / Ex. 6

On Fri, Mar 20, 2015 at 8:29 AM, Deltoral, Miguel <deltoral.miguel@epa.gov> wrote:

> Good morning **Citizen Name / Ex. 6**

Thank you for taking the time to speak with me yesterday. I just wanted to confirm that I received the results of both water tests from Jennifer Crooks and to email you directly so that you have my email address as well.

I also have a couple of questions that I forgot to ask you yesterday, if you don't mind. No obligation to provide the information of course, but I want to make sure that we have as much relevant information as is available so that the problems are addressed properly.

You mentioned that your [redacted] Personal Matters / Ex. 6 higher than they were before. Do you happen to remember the dates and actual blood lead levels for the blood tests?

Also, does your home have a water meter by any chance? Although I suspect the lead is likely from a lead service line, I want to make sure that all potential sources of lead have been investigated.

Thank you kindly, and have a nice day.

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To: Crooks, Jennifer[crooks.jennifer@epa.gov]
Cc: Poy, Thomas[poy.thomas@epa.gov]; Harris, Kimberly[harris.kimberly@epa.gov]; Schock, Michael[Schock.Michael@epa.gov]; Porter, Andrea[porter.andrea@epa.gov]
From: Deltoral, Miguel
Sent: Fri 4/3/2015 9:44:07 PM
Subject: Re: Lead levels and Chloramine

I seriously doubt that they have any Pb-IV in Flint, but anytime you make the significant and it seems iterative changes to the water chemistry, you are asking for trouble. I think we are going to need to think real hard about including mandatory OCCT studies and mandatory increased monitoring for at least some treatment changes.

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From: Crooks, Jennifer
Sent: Thursday, April 2, 2015 09:13 AM
To: Deltoral, Miguel
Cc: Poy, Thomas; Harris, Kimberly
Subject: Lead levels and Chloramine

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"Changes in water treatment and disinfection practices can substantially undermine lead corrosion control (*60*). In the mid-1990s in the District of Columbia (DC), high levels of free chlorine were used to decrease coliform bacteria in water, a process that inadvertently changed the type of lead mineral coating in the water lines to one with very low solubility in the background pH of the DC drinking water. When the free chlorine was replaced with chloramines, the transformed highly insoluble lead scale minerals were no longer stable and dissolved. Therefore, a substantial level of lead was released from the lead service lines into drinking water at the tap (*61*). CDC reviewed the relationship between BLLs in children, the presence of a lead service line, and water disinfection practices in DC during 1998–2006 (*62*). The study reported that the presence of a lead service line was associated with higher BLLs in children. This relationship was most pronounced during 2001 through June 2004, when chloramines were used to disinfect the drinking water without adequate corrosion control (*62*). An observational study in which the BLLs of children were matched to population-based data of water lead levels during periods when water disinfection practices changed in DC concluded that the increase in water lead levels was associated with an increase in the BLLs of children (*63*). In a study in Wayne County, North Carolina, a unified geographic information system was used to link BLLs with water service lines made with or without lead. The use of chloramines in water predicted higher water lead levels and BLLs, controlling for well-established, known predictors of BLL (*44*)."

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To: Crooks, Jennifer
Subject: Lead and Chloramine

Ms. Crooks,

I know I already sent you an email but during further research I discovered this. I thought is was something that should be seen with the recent recommendations of Chloramine possibly being added as a solution.

http://www.cdc.gov/mmwr/preview/mmwrhtml/su6104a1.htm?s_cid=su6104a1_w

LCR And Control Measures Sections, 4th paragraph down. This is my concern with the new chemicals the city wants approval for. What happens to the other citizens who do not know they have an elevated lead content or for the ones who have already tested with elevated levels? I know one of the other levels was 37, that was the highest the city had seen before my levels, what will it look like when Chloramine is added?

Thank you

Citizen name / Ex. 6

To: Deltoral, Miguel[deltoral.miguel@epa.gov]
Cc: Porter, Andrea[porter.andrea@epa.gov]
From: Crooks, Jennifer
Sent: Mon 4/6/2015 6:47:57 PM
Subject: RE: Lead levels and Chloramine

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From: Deltoral, Miguel
Sent: Friday, April 03, 2015 4:44 PM
To: Crooks, Jennifer
Cc: Poy, Thomas; Harris, Kimberly; Schock, Michael; Porter, Andrea
Subject: Re: Lead levels and Chloramine

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Thank you

Citizen name / Ex. 6

To: Crooks, Jennifer[crooks.jennifer@epa.gov]
Cc: Porter, Andrea[porter.andrea@epa.gov]; Pressman, Jonathan[Pressman.Jonathan@epa.gov]; Wahman, David[Wahman.David@epa.gov]; Triantafyllidou, Simoni[Triantafyllidou.Simoni@epa.gov]; Lytle, Darren[Lytle.Darren@epa.gov]; Poy, Thomas[poy.thomas@epa.gov]; Bair, Rita[bair.rita@epa.gov]; Schock, Michael[Schock.Michael@epa.gov]
From: Deltoral, Miguel
Sent: Tue 4/7/2015 1:11:12 PM
Subject: Re: Lead levels and Chloramine

Hi Jen,

As I mentioned, dissolution of Pb-IV is not a likely issue here. However, in my opinion, the Flint situation is another public health disaster in the works. They were receiving chlorinated/phosphate-treated water from Detroit; they continued to use chlorine/phosphate after the switch to Flint River water with the resultant high TTHMs. Because of the TTHM MCL violation, they start aggressively flushing the distribution system and the health department has noticed a possible uptick of Legionella in and around Flint since the switch to Flint River water. They also propose to switch sources again to Lake Huron water once the (80 mile?) pipeline is completed. I am not sure when they are planning to switch to chloramine disinfection, so that also raises potentially major nitrification, unregulated DBP and other issues. Icing on the cake is that the city of Flint is pre-flushing ahead of collecting lead and copper samples, which almost guarantees that any resultant high lead release from the service lines will be not captured in the sampling. Not sure who's running the circus there, but they need to get a team of knowledgeable folks together to help them evaluate options comprehensively.

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From: Crooks, Jennifer
Sent: Monday, April 6, 2015 01:47 PM
To: Deltoral, Miguel
Cc: Porter, Andrea
Subject: RE: Lead levels and Chloramine

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Jen

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Sent: Friday, April 03, 2015 4:44 PM
To: Crooks, Jennifer
Cc: Poy, Thomas; Harris, Kimberly; Schock, Michael; Porter, Andrea
Subject: Re: Lead levels and Chloramine

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Citizen name / Ex. 6

To: Crooks, Jennifer[crooks.jennifer@epa.gov]
Cc: Porter, Andrea[porter.andrea@epa.gov]
From: Deltoral, Miguel
Sent: Tue 4/7/2015 1:16:37 PM
Subject: Re: Lead levels and Chloramine

You can have Citizen name / Ex. 6 call me and I can explain Pb-IV, what happened in DC and why.

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To: Deltoral, Miguel[deltoral.miguel@epa.gov]
Cc: Thomas Poy[Poy.Thomas@epa.gov]
From: Crooks, Jennifer
Sent: Tue 4/7/2015 1:19:47 PM
Subject: RE: Lead levels and Chloramine

Thank you, Miguel. This entire discussion is bringing this to the forefront of the disaster, as you say. I think we should discuss getting a group of experts together with Liane, too, at our April 28 lunch meeting.

Jen

From: Deltoral, Miguel
Sent: Tuesday, April 07, 2015 8:17 AM
To: Crooks, Jennifer
Cc: Porter, Andrea
Subject: Re: Lead levels and Chloramine

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Cc: 'Thomas Poy'[Poy.Thomas@epa.gov]; Porter, Andrea[porter.andrea@epa.gov]; Harris, Kimberly[harris.kimberly@epa.gov]
From: Crooks, Jennifer
Sent: Tue 4/7/2015 8:28:56 PM
Subject: RE: Lead levels and Chloramine

Tom P and I met this morning to discuss various issues going on in MI, related to Flint. One topic that came up was the City's possible switchover to chloramines (this topic came up at a public meeting in Flint), and its possible effect on lead in the Flint drinking water, such as what happened in DC. We called Michael Wright to see if that recommendation came out of the Flint Technical Advisory committee. Mike had not heard that recommendation, but totally understood the overall ramifications on the system, that while the change over to chloramines would most likely decrease TTHMs, it also might detrimentally affect the lead levels at the tap. The State had not heard that Flint was contemplating this change over to chloramines, so Mike Prysby said he would check in with Flint.

Jen

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Cc: Thomas Poy
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Sent: Thursday, April 2, 2015 09:13 AM
To: Deltoral, Miguel
Cc: Poy, Thomas; Harris, Kimberly
Subject: Lead levels and Chloramine

Miguel—In light of the possibility of Flint going to chloramine use, Citizen name / Ex. 6 brought up a significant comparison to the DC lead fiasco. What will lead levels look like after the switchover to chloramines, since there are lead service lines in Flint? She cites from the CDC research study below. Specifically, this paragraph:

"Changes in water treatment and disinfection practices can substantially undermine lead corrosion control (*60*). In the mid-1990s in the District of Columbia (DC), high levels of free chlorine were used to decrease coliform bacteria in water, a process that inadvertently changed the type of lead mineral coating in the water lines to one with very low solubility in the background pH of the DC drinking water. When the free chlorine was replaced with chloramines, the transformed highly insoluble lead scale minerals were no longer stable and dissolved. Therefore, a substantial level of lead was released from the lead service lines into drinking water at the tap (*61*). CDC reviewed the relationship between BLLs in children, the presence of a lead service line, and water disinfection practices in DC during 1998–2006 (*62*). The study reported that the presence of a lead service line was associated with higher BLLs in children. This relationship was most pronounced during 2001 through June 2004, when chloramines were used to disinfect the drinking water without adequate corrosion control (*62*). An observational study in which the BLLs of children were matched to population-based data of water lead levels during periods when water disinfection practices changed in DC concluded that the increase in water lead levels was associated with an increase in the BLLs of children (*63*). In a study in Wayne County, North Carolina, a unified geographic information system was used to link BLLs with water service lines made with or without lead. The use of chloramines in water predicted higher water lead levels and BLLs, controlling for well-established, known predictors of BLL (*44*)."

From: Citizen name / Ex. 6
Sent: Wednesday, April 01, 2015 10:23 PM
To: Crooks, Jennifer
Subject: Lead and Chloramine

Ms. Crooks,

I know I already sent you an email but during further research I discovered this. I thought is was something that should be seen with the recent recommendations of Chloramine possibly being added as a solution.

http://www.cdc.gov/mmwr/preview/mmwrhtml/su6104a1.htm?s_cid=su6104a1_w

LCR And Control Measures Sections, 4th paragraph down. This is my concern with the new chemicals the city wants approval for. What happens to the other citizens who do not know they have an elevated lead content or for the ones who have already tested with elevated levels? I know one of the other levels was 37, that was the highest the city had seen before my levels, what will it look like when Chloramine is added?

Thank you

Citizen name / Ex. 6

To: Crooks, Jennifer[crooks.jennifer@epa.gov]; Deltoral, Miguel[deltoral.miguel@epa.gov]
Cc: Poy, Thomas[poy.thomas@epa.gov]; Harris, Kimberly[harris.kimberly@epa.gov]
From: Porter, Andrea
Sent: Tue 4/7/2015 8:42:49 PM
Subject: RE: Lead levels and Chloramine
Operational-Evaluation-Report.pdf

Hi All,

Here are a few excerpts from Flint's November 2014 OEL report (source = http://cityofflint.com/?p=6251):

"Stage 2 actions are to be implemented only if Stage 1 actions are ineffective in adequately reducing TTHM levels and therefore Stage 2 is

contingent upon the outcome of Stage 1."

"***Stage 1 – Immediate Actions***

☐ Hire ozone system manufacturer to troubleshoot ozone system

☐ Bench scale jar testing

o Match existing process and access possible areas of improvement

o Simulate potential modifications to treatment process

o Evaluate coagulation and flocculation polymer aid feeds to assist with TOC

removal

☐ WTP operational changes

o Discontinue softening bypass stream to reduce chlorine demand

o Disinfection of filter beds to reduce chlorine demand

o Possibly begin coagulation and flocculation polymer aid feeds to assist with

TOC removal depending on bench scale test results

☐ Increase water main flushing efforts to minimize stagnant water

☐ Water system modeling to identify areas with high water age and potential solutions

o Cedar Street Pump Station potential recirculation

o West Side Pump Station potential recirculation

o Storage tank volume use

o Possible broken closed valve locations

o Locations in need of flushing

o Lower high water levels in storage tanks"

"***Stage 2 – Contingent Actions***

☐ Fix ozone system

☐ Start feeding coagulation and flocculation polymer aids to lower TOC, if not

completed in Stage 1

☐ Convert to lime and soda ash softening

☐ **Change disinfectant to chloramine or chlorine dioxide until KWA**

☐ Install pre-oxidant feed at intake to optimize ozone disinfection

☐ Implement advanced treatment for THM precursor removal

☐ Increased main flushing based on water modeling results

☐ Continue valve replacements with water model assistance

☐ Emphasize cast iron pipes on water main replacement priority list"

I would think, based on the OEL, that everyone (State, public, etc.) should be aware that Flint is contemplating a switch to a different disinfectant, but only after they exhaust a slew of less drastic remedies for their DBP issues.

Hope that helps.

Thanks,

Andrea Porter

Environmental Engineer

Ground Water & Drinking Water Branch

U.S. EPA, Region 5 (WG-15J)

77 W. Jackson Blvd.

Chicago, IL 60604

Phone: 312-886-4427

Fax: 312-697-2656

From: Crooks, Jennifer
Sent: Tuesday, April 07, 2015 3:29 PM
To: Deltoral, Miguel
Cc: Poy, Thomas; Porter, Andrea; Harris, Kimberly
Subject: RE: Lead levels and Chloramine

Tom P and I met this morning to discuss various issues going on in MI, related to Flint. One topic that came up was the City's possible switchover to chloramines (this topic came up at a public meeting in Flint), and its possible effect on lead in the Flint drinking water, such as what happened in DC. We called Michael Wright to see if that recommendation came out of the Flint Technical Advisory committee. Mike had not heard that recommendation, but totally understood the overall ramifications on the system, that while the change over to chloramines would most likely decrease TTHMs, it also might detrimentally affect the lead levels at the tap. The State had not heard that Flint was contemplating this change over to chloramines, so Mike Prysby said he would check in with Flint.

Jen

From: Crooks, Jennifer
Sent: Tuesday, April 07, 2015 8:20 AM
To: Deltoral, Miguel
Cc: Thomas Poy

Subject: RE: Lead levels and Chloramine

Thank you, Miguel. This entire discussion is bringing this to the forefront of the disaster, as you say. I think we should discuss getting a group of experts together with Liane, too, at our April 28 lunch meeting.

Jen

From: Deltoral, Miguel
Sent: Tuesday, April 07, 2015 8:17 AM
To: Crooks, Jennifer
Cc: Porter, Andrea
Subject: Re: Lead levels and Chloramine

You can have Citizen name / Ex. 6 call me and I can explain Pb-IV, what happened in DC and why.

Miguel A. Del Toral

Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

From: Crooks, Jennifer
Sent: Monday, April 6, 2015 01:47 PM
To: Deltoral, Miguel
Cc: Porter, Andrea
Subject: RE: Lead levels and Chloramine

So, Andrea explained that the Pb-IV is the hard Pb lining that DC's pipes got from the years of over chlorinating. You said below that you don't think that Flint had any Pb-IV, so Flint will probably not have the lead issues that DC had. But, as you said, any significant changes in the water chemistry, can cause a wealth of problems.

Jen

From: Deltoral, Miguel
Sent: Friday, April 03, 2015 4:44 PM
To: Crooks, Jennifer
Cc: Poy, Thomas; Harris, Kimberly; Schock, Michael; Porter, Andrea
Subject: Re: Lead levels and Chloramine

I seriously doubt that they have any Pb-IV in Flint, but anytime you make the significant and it seems iterative changes to the water chemistry, you are asking for trouble. I think we are going to need to think real hard about including mandatory OCCT studies and mandatory increased monitoring for at least some treatment changes.

Miguel A. Del Toral

Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

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To: Crooks, Jennifer
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Thank you

Citizen name / Ex. 6

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Operational Evaluation Report

City of Flint

1855

Trihalomethane Formation Concern

November 2014

Lockwood, Andrews & Newnam, Inc.
A LEO A DALY COMPANY

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CITY OF FLINT
Operational Evaluation Report
November 26, 2014

EXECUTIVE SUMMARY

Environmental Protection Agency (EPA) and Michigan Department of Environmental Quality (MDEQ) regulations require that public water suppliers test drinking water quarterly throughout the distribution system for disinfectant by-products (DBP's). Two categories of DBP's, tri-halomethanes (THM) and halo-acetic acids (HAA5), are regulated and must be tested for. The City of Flint began operation of their water treatment plant (WTP) full time with the Flint River as the source on April 25, 2014. Since that time, two quarters of samples taken indicate that future violations are inevitable for total THM without some modifications to the water system. In response, the City hired Lockwood, Andrews & Newnam, Inc. (LAN) to complete this Operational Evaluation Report (OER) in conformance with EPA guidelines with the goal to determine the cause(s) of high levels of THM and evaluate possible solutions.

The EPA promulgated the Stage 2 Disinfectants and Disinfection By-Products Rule (DBPR) in January 2006 which set maximum contaminant levels (MCLs) for total trihalomethanes (TTHM) and HAA5 based on an annual running average, tested quarterly, for a given sampling location. The City of Flint reports levels from 8 sampling test locations. Of the two quarterly sampling cycles since Flint began operating the WTP full time, HAA5 levels have been acceptable but TTHM levels have been high at all 8 sampling sites.

According to the Stage 2 DBPR, the annual average value requires 3 quarters of sampling data with the most current period counting twice. Therefore, the City of Flint has not yet experienced a violation of the TTHM MCL because only 2 quarters of data have been obtained. However, levels recorded indicate the likelihood of an MCL exceedance later this year.

A number of issues have been identified as possibly contributing to the high THM levels measured.

1. Inefficient ozone system operation which has resulted in increased chlorine feed.
2. Sewer leak discovered upstream of intake causing high total Coliform levels, increased chlorine demand, and resulting need to increase chlorine feed.
3. Bypass stream around softening contributed to chlorine demand.
4. Unlined cast iron pipe in the distribution system contributing to chlorine demand.
5. Recirculating water in the distribution system due to less than ideal configuration of Cedar Street and West Side pump stations.
6. Broken valves resulting in stagnant water in some areas.
7. High chlorine demand in filters.
8. High THM formation potential (THMFP) in source water.
9. Less than optimal removal of THM precursors

ACTION PLAN

The City of Flint has signed an agreement with the Karegnondi Water Authority (KWA) to purchase raw water drawn from Lake Huron. The KWA system is currently under construction and expected to be operational by late 2016. The water supply from Lake Huron will have entirely different water quality characteristics from the Flint River and those characteristics are expected to yield drastically reduced DPB formation. With that, non-structural options to help reduce THM levels are much preferred over solutions requiring new construction. Therefore, two categories of actions have been devised: Stage 1 being actions that can be completed relatively quickly without major construction and Stage 2 consisting of either long term actions or solutions requiring major construction. The City has completed or intends to complete Stage 1 Actions by February 16, 2015, the week in which the next

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quarterly sampling is to be done. Stage 2 actions are to be implemented only if Stage 1 actions are ineffective in adequately reducing TTHM levels and therefore Stage 2 is contingent upon the outcome of Stage 1.

Stage 1 – Immediate Actions

- ☐ Hire ozone system manufacturer to troubleshoot ozone system
- ☐ Bench scale jar testing
    - Match existing process and access possible areas of improvement
    - Simulate potential modifications to treatment process
    - Evaluate coagulation and flocculation polymer aid feeds to assist with TOC removal
- ☐ WTP operational changes
    - Discontinue softening bypass stream to reduce chlorine demand
    - Disinfection of filter beds to reduce chlorine demand
    - Possibly begin coagulation and flocculation polymer aid feeds to assist with TOC removal depending on bench scale test results
- ☐ Increase water main flushing efforts to minimize stagnant water
- ☐ Water system modeling to identify areas with high water age and potential solutions
    - Cedar Street Pump Station potential recirculation
    - West Side Pump Station potential recirculation
    - Storage tank volume use
    - Possible broken closed valve locations
    - Locations in need of flushing
    - Lower high water levels in storage tanks

Stage 2 – Contingent Actions

- ☐ Fix ozone system
- ☐ Start feeding coagulation and flocculation polymer aids to lower TOC, if not completed in Stage 1
- ☐ Convert to lime and soda ash softening
- ☐ Change disinfectant to chloramine or chlorine dioxide until KWA
- ☐ Install pre-oxidant feed at intake to optimize ozone disinfection
- ☐ Implement advanced treatment for THM precursor removal
- ☐ Increased main flushing based on water modeling results
- ☐ Continue valve replacements with water model assistance
- ☐ Emphasize cast iron pipes on water main replacement priority list

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I. BACKGROUND

The City of Detroit Water and Sewer Department (DWSD) has historically provided drinking water for the City of Flint and Genesee County. In the late 1990's growing concern regarding the reliability of the DWSD supply prompted the City of Flint to upgrade their existing water treatment plant (WTP). Those improvements, defined as Phase I, were completed in 2005 and were intended to allow the Flint WTP to operate, using the Flint River as the source, for an extended period of time in the event that supply from the DWSD was temporarily interrupted. Additionally, the Phase I improvements set the stage for Flint to break free from dependence on the DWSD supply and water charges over which they had no control.

A. WATER SUPPLY TRANSITION

1. Detroit Water and Sewer Department (DWSD)

Until recently the Genesee County and Flint region had been provided drinking water by the DWSD. However, due to excessive cost increases and reliability issues with the DWSD system other options had to be explored.

2. Karegnondi Water Authority (KWA)

In 2010 the Karegnondi Water Authority (KWA) was formed for the purpose of developing a new water supply from Lake Huron to serve the region in lieu of the DWSD supply and the City of Flint elected to join. The KWA expects the new system which is currently being constructed to become operational in the fall of 2016.

3. Flint River – Interim Period

With a water supply agreement between Flint and the DWSD set to expire in early 2014 and the KWA system not expected to be operational until late 2016, the City of Flint decided to initiate operation of the existing WTP full time utilizing the Flint River as the interim water source. A variety of WTP improvements were necessary for the Flint plant to become a full time plant. For purposes of this report, Phase II improvements to the Flint WTP are improvements which have been made to allow the plant to operate full time with either the Flint River as the source or the KWA supply as the source.

B. TTHM PENDING VIOLATIONS

The calculation for determining if the MCL has been violated for TTHM is:

(2 x current quarter value + previous 2 quarter values) / 4

Flint has completed tests for 2 quarters and therefore has not violated an MCL limit to date. However, the third quarter of sample data is likely to provide MCL exceedances at all 8 sampling sites. Test results are tabulated below.

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TABLE 1 – 2014 DBP TEST RESULTS						
Sample Location	TTHM			HAA5		
	1st Qrt 5/21/14	2nd Qrt 8/21/14	3rd Qrt	1st Qrt 5/21/14	2nd Qrt 8/21/14	3rd Qrt
3719 Davison - McDonalds	162.4	145.3		64	43	
822 S. Dort Hwy - BP Gas Sta.	111.6	112.0		52	40	
3302 S. Dort Hwy – Liquor Palace	96.5	127.2		48	31	
3606 Corunna – Taco Bell	106.4	181.3		55	24	
2501 Flushing – Univ. Market	75.1	196.2		38	17	
3216 MLK – Salem Housing	82.2	112.4		41	25	
5018 Clio – Rite Aid	88.2	144.4		49	30	
6204 N. Saginaw – N. Flint Auto	79.2	118.3		50	37	

TTHM MCL = 80 ug/l
HAA5 MCL = 60 ug/l

C. WATER TREATMENT PLANT RECENT IMPROVEMENTS & STATUS

1. Phase I WTP Improvements

Since 1965, the Flint WTP has remained a secondary or backup supply system to the DWSD primary supply. Typically the secondary supply for a public water system is expected to be needed only during emergency situations and normally is designed for short term operation such as providing the average daily demand for a few days. Conversely, Phase I improvements were designed with the intent to upgrade the Flint WTP in order to allow for an extended short term period (6 weeks) because of the perceived high risk that the DWSD supply would fail and remain out of service for an extended duration. Regardless, the Flint WTP was still intended to serve as a standby plant and as such the Phase I improvements lacked redundancies that would be required for a primary supply WTP.

2. Past Pilot Study Testing

During design of the Phase I improvements a treatability study was completed by Alvord, Burdick & Howson, LLC (AB&H) in 2002. The Treatability Study evaluated the current treatment processes that are in place at the Flint WTP today with the Flint River as the source. The report recommended the following:

TABLE 2 – 2002 WTP TREATMENT RECOMMENDATIONS			
Treatment	Purpose	Point of Application	Dosage (mg/l)
Sodium permanganate	Zebra mussel control	Intake	0.3
Ozone	Taste & odor removal, disinfection	Diffusor basin	1.5
Ferric chloride	Coagulation	Rapid mix	40
Coag aid polymer	Turbidity & TOC removal	Rapid mix	2.0
Floc aid polymer	Turbidity & TOC removal	Floc basin	0.05
Lime	Softening	Softening basin	175
Soda ash	Softening	Softening basin	52
Carbon dioxide	pH adjustment	Recarb basin	37
Media filters	Filtration	Na	Na
Chlorine	Disinfection	Filter effluent	1.0

Of the recommended items, zebra mussel control, coagulant and flocculation polymer aids, and soda ash feed have not been incorporated into the treatment process.

3. Phase II WTP Improvements for Full Time Operation

Phase II WTP improvements are those needed to convert the Flint WTP from a back-up supply to a primary supply plant. A number of improvements have already been constructed as they were necessary to operate full time, treating water from the Flint River. The improvements under the title of Phase II that have been completed or are nearly complete include upgrades to the lime sludge lagoon, the lime sludge lagoon decant and disposal system, decant pump station and force main, installation of mid-point chlorination before filtration, and upgrade of the electric feed sub-station.

Additional improvements to the Flint WTP that are to be completed to become part of the normal treatment process using water supplied by the KWA are:

- ☐ New oxygen and nitrogen storage facilities for the ozone system
- ☐ New coagulant feed system
- ☐ Electrical
    - Pump Station #4 upgrades
    - Plant 2 improvements
    - Filter press building feeder
    - SCADA and controls upgrades
    - Filter transfer pump station feeders
- ☐ Installation of the future raw water feed connection point for the KWA
- ☐ Pump replacements and VFD installation in the low and high service pump station
- ☐ Filter transfer pump station to Dort Reservoir
- ☐ Facility security improvements

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II. SOURCE WATER EVALUATION

A. DATA ANALYSIS

Based on past data collected and the 2002 Treatability Study by AB&H, the Flint River water quality varies seasonally with higher hardness and alkalinity experienced in the winter. Higher magnesium concentrations are also experienced in the winter, adding difficulty to the settling process due to neutrally buoyant floc. General water quality average characteristics recorded for the 2002 Treatability Study as compared with average characteristics recorded this year are shown in Table 3 below.

TABLE 3 – FLINT RIVER WATER QUALITY CHARACTERISTICS

Period	Turbidity NTU	TOC Mg/l	Alkalinity Mg/l	Hardness Mg/l as CaCO3	pH	Total Col. Count/day
2001 Apr–Oct	7.9	9.4	215	27[illegible]	8.1	870-1230 (7300 max)
2014 May–Oct	8.3	10.3 5/22/14	207	252	8.2	1900-9000 (48,300 max)

Other than total Coliform, the Flint River characteristics do not appear to have changed significantly over the past 10+ years. Note that further investigation by City staff revealed a sewer leak upstream of the plant that likely was contributing to the total Coliform count.

B. CONCLUSIONS

Considering the minor changes in Flint River water quality, much of the information contained in the 2002 Treatability Study by AB&H remains relevant today. Data from that report assumed to be consistent to include the following:

- ☐ Flint River is influenced by groundwater from a dolomitic aquifer
- ☐ Hardness varies seasonally with higher hardness and alkalinity in the winter
- ☐ Hardness, alkalinity, magnesium concentrations tend to be reduced by run-off
- ☐ Total THMFP is likely 380-440 micrograms per liter as measured between April 2001 and January 2002. The City intends to re-test the raw water to confirm the THMFP has not changed. Results are pending.

In development of the 2002 Treatability Study, processes were simulated which resulted in low THMFP. Therefore, information contained in that report will be used to assist with establishing a baseline jar testing procedure discussed further in Section III.

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III. TREATMENT PROCESS EVALUATION

A. EXISTING PROCESS DESCRIPTION

The existing WTP consists of an intake with screening from the Flint River, low lift pumping, ozonation, rapid mix, flocculation, settling, softening, recarbonation, filtration, storage and high service pumping. A process diagram is shown as Figure 1.

1. Intake

A 72" diameter pipe draws water from the Flint River through 2 traveling screens to the low lift pump structure. No chemicals are currently fed for Zebra mussel control or pre-oxidation as recommended by the 2002 Treatability Study. Manual removal of zebra mussels proved to be more economical than installation of chemical feed equipment considering the short term need.

2. Ozone

There are 2 ozone generators designed to provide adequate ozone for a WTP flow of up to 36 mgd. There are 3 ozone contact basins. The ozone generators were designed to produce 900 lbs/day at 10% concentration and up to 1300 lbs/day at 6% concentration each. Recent readings have indicated a production rate of approximately 700 lbs/day at 4% concentration. While serving the purposes of taste and odor control and disinfection, it is possible the current ozone feed might not be optimized to realize additional TOC removal benefits demonstrated by previous tests. Also, less than optimal ozonation has led to increased chlorine feed.

3. Rapid Mix

East and West rapid mix chambers allow chemical feed prior to the flocculation basins. Each rapid mix chamber is equipped with a 5 hp mixer.

4. Coagulation / Flocculation

The WTP contains two equally sized flocculation basins, east and west, and each basin provides tapered or gradually slowed mixing from inlet to outlet. There are fifteen 2 hp mixers in each basin with VFDs to control mixing speed. The 2002 Treatability Study recommended feeding both coagulation and flocculation polymer aids. Neither polymer aid is being used today because turbidity and TOC removals have been sufficient to meet regulatory requirements.

5. Settling

Primary clarification takes place within 3 basins containing plate settlers. The settlers are operating as designed.

6. Softening

Again, there are two basins for softening: east and west. Each basin is 120' in diameter and contains a solids contact softening unit. Each softening basin/unit has a design capacity of 18 mgd. Low lift pumping limitations, flow control to the basins, and fluctuating demands have made it difficult for WTP staff to stabilize the softening process. Softening is accomplished by feeding lime. The decision was made by the City not to feed soda ash in order to remove non-carbonate hardness because acceptable hardness levels could be achieved with lime feed only and softening is short term until Lake Huron water becomes available.

7. Recarbonation

Recarbonation for pH adjustment is accomplished in east and west recarbonation basins between and to the north of the softening basins. Carbon dioxide storage and feed equipment is located west of the recarbonation basins.

8. Filtration

Filtration is accomplished with 12 dual media filters, equally sized and designed to filter 3.0 mgd each. Media consists of 12″ of sand and 18″ of anthracite. The filters have been operated intermittently over the years due to the standby nature of the WTP and until recently, chlorine injection took place downstream of the filters. It is possible some microbial growth has developed in the filters.

9. Disinfection

Limited disinfection is provided by ozonation, but the primary form of disinfection is chlorine fed prior to filtration and prior to finish water storage / high service pumping. The intermediate chlorine injection location was recently constructed under the Phase II, Segment 1 contract.

10. Clear Well & Pumping

The pump building sits adjacent to a 3 MG clear well and contains both low and high service pumps.

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B. JAR TESTS / EXPERIMENTS

1. Approach

There are several well practiced methods by which DBPs can be reduced. First, the disinfectant can be changed to an alternate that has a lower tendency to form DBPs. Second, additional treatment systems such as activated carbon or air stripping (depending on the nature of the precursors) can be added to remove DBP precursors. Lastly, the existing treatment processes can be optimized to remove as much DBP precursor as possible. Of these options, optimizing existing treatment processes is the only strategy that does not require the construction of new and expensive facilities. It is anticipated that Flint will be receiving Lake Huron water in approximately two years and this water will have a completely different chemistry from the Flint River. Major process changes instituted to address THM levels using Flint River water are likely to be unnecessary for Lake Huron water and may even be inappropriate. Therefore, those options which require addition of new treatment processes are undesirable at this time. In recognition of this upcoming change in water source, this study will concentrate on improving the existing processes, rather than adding new ones. New treatment processes will only be recommended if operational changes to the existing treatment train prove ineffective.

Recent sample test results suggest that most of the DBPs are formed in the distribution system rather than within the treatment plant. Therefore, the most logical approach is to reduce the DBP formation potential (DBPFP) rather than simply lowering the levels of DBPs leaving the plant. During bench scale testing, formation potential (FP) levels will be the primary indicator of success or failure of any proposed process modifications.

2. Protocol

Bench scale pilot testing is intended to reflect actual plant operating and hydraulic conditions so the bench scale treatment units will be sized based on various dimensionless factors to ensure the pilot treatment matches the actual system. Bench scale ozonation is not practical due to time and cost limitations. Therefore, water

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samples will be withdrawn following the plant ozone basin. These samples will be transported to the laboratory where they will be dispensed into square testing jars. The jars will act as rapid mix, three-stage flocculation, and settling. Rapid mix and flocculation conditions will be matched to the plant based on "Gt" values. The "G" value is a measure of the mixing intensity and is a function of mix time, viscosity of the liquid, and mixing power applied to the water. "Gt" then, is a size scaling factor where time has been accounted for. Settling time will be scaled to match the shorter settling depth of the testing jars. After settling, samples will be decanted from the test jars. The decanted samples will then be lime softened; softening conditions will be similarly matched on the basis of "Gt". Fluoride will be added and carbon dioxide sparged into the samples to reduce the pH. The water will then be vacuum filtered through filter paper, sized to simulate the plant's dual media filters. The samples will be dosed with excess chlorine and allowed to react for seven days before testing for DBPs to determine the formation potential.

Although these conditions may be refined based on new information, we anticipate the following:

TABLE 4 – BENCH SCALE TEST MIXING INTENSITIES

Process	G	Duration
Ozonation	Plant	-
Rapid Mix	[illegible]	25 sec
Flocculation, Stage 1	50	9 min
Flocculation, Stage 1	25	9 min
Flocculation, Stage 1	12	9 min
Settling	[illegible]	10 min
Softening	TBD	10 min
Recarbonation	na	na

It is expected that the primary variables during the testing will be chemical additions and chemical dosages. Specific chemicals and dosages used for initial testing conditions will be selected to reflect current plant usage and the recommendations of the 2002 Treatability Study.

TABLE 5 – BENCH SCALE TEST CHEMICAL FEED RATES

Chemical	Current Usage	2002 Study
Ozonation	4.66 mg/l	1.5 mg/l
Ferric Chloride	7.7 mg/l	40 mg/l
Coagulant Aid Polymer	Not used	2.0 mg/l
Flocculation Aid Polymer	Not used	0.05 mg/l
Lime	120 mg/l	175 mg/l
Soda Ash	Not used	52 mg/l
Cationic Softening Polymer	3.13 mg/l	Not used
Anionic Softening Polymer	0.88 mg/l	Not used
Fluoride	0.45 mg/l	1 mg/l
Carbon Dioxide	32 mg/l	37 mg/l
Chlorine	6.3 mg/l	1 mg/l

3. Considerations

The 2002 Treatability Study did not note significant formation of DBPs. This may be a function of different Flint River water chemistry at that time. However, recognizing the considerable differences in chemical usage and dosages between that study and current operations, those differences in chemical use and dosage are an obvious starting point for optimizing treatment to prevent DBP limit exceedance.

Although it is believed that optimization of current treatment can correct the DBP issue, should optimization of present treatment prove insufficient, alternate residual disinfectants (chloramines and chlorine dioxide) will be investigated as additional treatment measures.

4. Results

To be completed following jar testing and experimentation.

5. Conclusions

To be completed following jar testing and experimentation.

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IV. DISTRIBUTION SYSTEM EVALUATION

EPA guidance for the distribution evaluation portion of an OER is focused on identification and isolation of a specific portion of the distribution system that led to the exceedance. The circumstances of Flint's apparent pending TTHM exeedances are unusual in that a new supply has been implemented which clearly corresponds to the high TTHM sample results. Despite obvious implications to the primary cause of increased TTHM levels, value remains in evaluating the distribution system as there may still be distribution improvements that can be made to help alleviate the problem.

Evaluation of the distribution system, including modeling, was recently added to LAN's scope of services. When finished, information will be provided to complete the following topics in this section.

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A. INFRASTRUCTURE

1. Piping

Main break history information available?
List pipe data for system… age, material, size

2. Storage

Considering drop off in demands in recent years, are storage tanks oversized?
Do they have mixing, baffling, other, to prevent stagnant water?
Are tanks in good condition?

3. Pump Stations

Condition of pump stations?
Pumps oversized?
Are valves working properly to maintain pressure zones?

B. OPERATIONS AND MAINTENANCE

1. Pump Station & Storage Operations

Are pressure districts set up properly?
Cedar Street Pump Station – no established pressure zone? Talk to Flint
West Side Pump Station – no established pressure zone? Talk to Flint
High and low levels in tanks optimally set? Should they be adjusted to use less storage volume?

2. Booster Disinfection Practices

They don't have any, do they?

3. Changes in System Demands

Long term decline in demands
Short term fluctuations – max day in winter due to large number of main breaks

C. WATER SYSTEM HYDRAULIC MODELING

1. Simulation of Existing System

Match existing conditions, particularly chlorine residual. We have chlorine feed data at plant and residuals at 10 locations in each MOR, May-October.

2. Identification of Deficiencies

Specific issues to look at:

- Worst case at minimum daily demands
- Water age in entire system
- Recirculating water through pump stations
- Use of storage tanks
- Indications of broken valves

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V. RECOMMENDATIONS TO MINIMIZE FUTURE OEL EXCEEDANCES

A. SOURCE

The City of Flint has already committed to the change from the Flint River as the water source to Lake Huron under the KWA system, planned for late 2016. The risk of future TTHM limit violations will decline substantially with the use of water from Lake Huron due to much lower DBP precursors. It is important to recognize that the Flint River will become strictly an emergency supply when the KWA supply becomes available and any investments toward the Flint River should be contemplated accordingly. Recommendations discussed below in this section apply to the Flint River as the source.

Reverting to supply from the DWSD until the KWA supply is available as an option. However, the DWSD has stipulated that a $4 million connection fee would apply and current water rates would include approximately $900,000 / month flat fee plus usage charges. Therefore, utilizing the DWSD for interim supply is cost prohibitive under the terms defined by the DWSD.

1. Watershed Management

A volunteer group entitled the Watershed Coalition performs various tasks related to managing the Flint River watershed such as spring cleanups and annual benthic studies to evaluate the river 'health'. No additional action is recommended at this time.

2. Monitoring

The City documents typical raw water characteristics as part of standard preparation of Monthly Operating Reports (MOR). No changes are recommended at this time.

3. Intake Operations

The 2002 Treatability Study recommended pre-oxidation in the form of sodium permanganate as a feed at the intake. However, pre-oxidation with sodium permanganate is unlikely to provide significant oxidizing of organics beyond that provided by ozonation. It is possible the addition of hydrogen peroxide would enhance the ozone process.

4. Seasonal Strategies

Past data indicates the Flint River is influenced by groundwater and in particular, dolomitic spring water. The result is hard water with high concentrations of magnesium and sulfate. Also, hardness and alkalinity are higher during the winter. Upon initiation of supply from the Flint River, the City made the decision to soften with lime only to focus on removal of carbonate hardness. One potential modification that could assist with TOC removal and thus decrease THMFP would be lime and soda ash softening. If implemented soon, the procedural change would be timely as it would also address increased hardness expected going into this winter.

5. Upstream Contamination Issues

Upstream contamination issues are extremely difficult to prevent and even if detected are difficult to locate. Evaluation of raw water data collected for MORs is the easiest manner in which to detect upstream contamination issues because the data is already collected for treatment purposes. In fact, high total Coliform readings signaled a potential issue recently that the City found to be a sewer leak, which was subsequently repaired.

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An upstream monitoring and warning system could be established to attempt to detect spill event type contamination early enough to cease intake prior to the contamination reaching the WTP. However, given the imminent conversion to the KWA supply, the period of full time use would likely be far too short to achieve payback on the capital expenditures.

B. TREATMENT PROCESS

1. Operational Recommendations

- ☐ Coagulation and flocculation polymer aids: The 2002 Treatability Study suggested the use of coagulation and flocculation polymer aids. These polymer aids were shown in the 2002 Treatability Study to increase TOC removal and thereby reduce THMFP. Further evaluation will be completed during jar testing. [what would need to be done to the system to allow feed?? Could it be done easily??]
- ☐ Discontinue softening bypass: The City was previously bypassing a portion of flow around the softening basins because hardness levels did not warrant softening of the full stream. However, this practice was discontinued because it was believed the bypass stream was contributing to chlorine demand and preliminary data has supported that belief. Chlorine demand dropped 0.5 – 1.0 mg/l following elimination of the bypass stream in early November 2014.
- ☐ Soften with line and soda ash: Research has shown that enhanced softening with both lime and soda ash may provide additional TOC removal. The efficacy of this option will be evaluated during jar testing.
- ☐ Disinfection of filter beds: In case there has been microbial growth it is recommended the filters be 'shock' treated with chlorine and rinsed. A chlorine injection point was added upstream of the filters during the first segment of Phase II so future growth in the filters should not be an issue.
- ☐ Optimization of all existing treatment processes: Depending on bench scale testing conditions and results, slight modifications to all treatment processes might in order to replicate lower DPBFP.

2. Infrastructure Change Recommendations

- ☐ Fix and/or replace faulty ozone equipment: Since the ozone equipment was installed it has not been used extensively so the hope is that major components remain in good condition and the system can be easily modified to restore proper functionality. The City has scheduled the equipment manufacturer to field inspect the system on December 15, 2014.
- ☐ Change disinfectant to chloramine or chlorine dioxide: If other options prove to be ineffective, conversion to another disinfectant should be fully evaluated. Various characteristics of chloramination indicate an advantage over chlorine dioxide, but a full analysis would provide clarity as to which would be preferred.
- ☐ Install pre-oxidant chemical feed: Hydrogen peroxide as a pre-oxidant can enhance the activity of the ozone. This option is listed as a consideration only if problems continue with ozonation.
- ☐ Repair upstream sewer leak: a sewer leak upstream of the WTP intake was discovered and has already been repaired by the City.

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C. DISTRIBUTION SYSTEM

Recommendations will be incorporated into this report when available. It is anticipated details will be provided for the following topics.

1. **Manage Water Age**
   a) **Storage Tanks**
   b) **Residence Time in Pipes**

2. **Reduce Disinfectant Demand**
   a) **Flushing**
   b) **Cast Iron Pipes**

3. **Water Modeling of Recommendations**

Determine best flushing locations to reduce water age
Changes to storage tank operating levels to reduce water age
Valves to close/add to improve pressure zones, reduce recirculation
Optimization of pump station use – smaller pumps? Shut down?

A number of actions have already been taken in terms of the distribution system. Water main flushing efforts were increased until late November when freezing weather became prevalent. Also, numerous valves that were broken in the closed position and believed to have been contributing to stagnant water were replaced.

D. BOOSTER DISINFECTION

Decreasing chlorine feed at the WTP and adding booster disinfection in the distribution system is an alternative intended to reduce the reaction time at higher concentrations of chlorine to reduce DPB formation. Extensive looping and branching within the existing system would require numerous booster feed points and water system modeling to determine the most effective feed point locations. As a result, booster disinfection would likely not be cost effective. Further discussion and details will be provided when the distribution evaluation results are available.

E. CATEGORIZATION OF ACTIONS

Considering that the Flint River is being used as the water source only until the KWA supply is available (expected late 2016), options to address high THM formation that require new construction or extensive time to implement are not preferred. On the other hand, the City understands THM sample results to date dictate that some action is necessary. Two categories have been developed to assist the City in prioritizing actions to take. Stage 1 consists of actions that can be completed relatively quickly without major construction and Stage 2 actions are either long term actions or solutions requiring major construction. Stage 1 actions are to be completed first followed by evaluation of the results prior to consideration of Stage 2 actions. Grouping of actions are shown in the table below.

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TABLE 6 – ACTION PLAN		
	Action	**Purpose**
Stage 1	Troubleshoot ozone feed system	Reduce chlorine feed and increase TOC removal
	Bench scale jar testing	Optimize treatment process and evaluate possible modifications
	Discontinue softening bypass	Reduce chlorine demand
	Disinfect filters	Reduce chlorine demand
	Increased water main flushing	Reduce water age / stagnant water
	Water system modeling evaluation	Determine areas with high water age and reasons
	Implement coag. & floc. polymer aids	Increase TOC removal
	Lower high water level in storage tanks	Decrease water age
Stage 2	Repair ozone system	Reduce chlorine feed and increase TOC removal
	Continue increased water main flushing	Reduce water age / stagnant water
	Convert to lime and soda ash softening	Increase TOC removal
	Continue valve replacements based on water model	Reduce water age / stagnant water
	Change disinfectant to chlorine dioxide	Reduce THMs
	Install pre-oxidant feed at intake	Optimize ozone disinfection, reduce chlorine
	Place priority on replacing cast iron water mains	Reduce chlorine demand

Samples were taken the week of November 1[illegible]th for the 3rd quarter of testing. Although the City has begun implementation of Stage 1 actions, THM results are not expected to be noticeably affected since there has not been enough time for a response. The next quarter of sampling is due to be completed the third week in February. It is the City's intent to implement Stage 1 actions prior to the [illegible] quarter of THM sampling. [need to make sure Flint is good with this]

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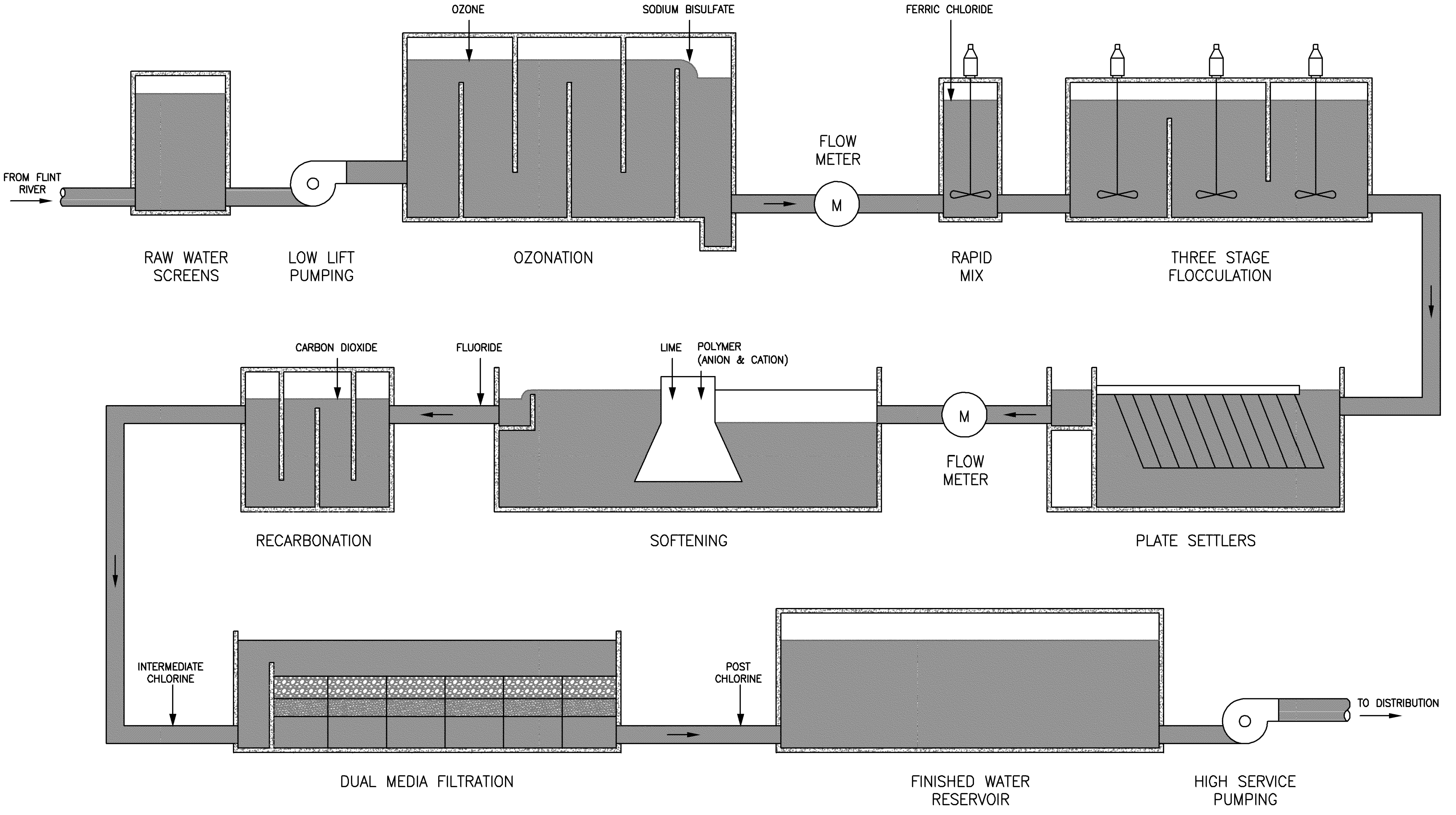

C:\projectwise\jrhansen\d0263766\Process-diagram.dwg November 24, 2014 - 12:55pm jrhansen

Genesee County

Lockwood, Andrews & Newnam, Inc.
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Tel 810-820-2682 Fax 810-820-2703
www.lan-inc.com

CITY OF FLINT
WATER TREATMENT PLANT

REVISIONS

NO.	DESCRIPTION	DATE

FILE LOG

ACTIVITY	BY
Manager	JWG
Design	
Drawn	JRH
Check	JRH

WATER TREATMENT PLANT
PROCESS DIAGRAM

Project No. 130-10701-001
Date Nov. 21, 2014

Sheet
FIG 1

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To: Shoven, Heather[shoven.heather@epa.gov]
From: Crooks, Jennifer
Sent: Tue 4/7/2015 9:00:35 PM
Subject: FW: Lead levels and Chloramine
Operational-Evaluation-Report.pdf

Heather--Interesting exchange of information—thought you'd be interested. Start at the bottom.

Jen

From: Porter, Andrea
Sent: Tuesday, April 07, 2015 3:43 PM
To: Crooks, Jennifer; Deltoral, Miguel
Cc: Poy, Thomas; Harris, Kimberly
Subject: RE: Lead levels and Chloramine

Hi All,

Here are a few excerpts from Flint's November 2014 OEL report (source = http://cityofflint.com/?p=6251):

"Stage 2 actions are to be implemented only if Stage 1 actions are ineffective in adequately reducing TTHM levels and therefore Stage 2 is

contingent upon the outcome of Stage 1."

"***Stage 1 – Immediate Actions***

☐ Hire ozone system manufacturer to troubleshoot ozone system

☐ Bench scale jar testing

o Match existing process and access possible areas of improvement

o Simulate potential modifications to treatment process

o Evaluate coagulation and flocculation polymer aid feeds to assist with TOC

removal

☐ WTP operational changes

o Discontinue softening bypass stream to reduce chlorine demand

o Disinfection of filter beds to reduce chlorine demand

o Possibly begin coagulation and flocculation polymer aid feeds to assist with

TOC removal depending on bench scale test results

☐ Increase water main flushing efforts to minimize stagnant water

☐ Water system modeling to identify areas with high water age and potential solutions

o Cedar Street Pump Station potential recirculation

o West Side Pump Station potential recirculation

o Storage tank volume use

o Possible broken closed valve locations

o Locations in need of flushing

o Lower high water levels in storage tanks”

“***Stage 2 – Contingent Actions***

☐ Fix ozone system

☐ Start feeding coagulation and flocculation polymer aids to lower TOC, if not

completed in Stage 1

☐ Convert to lime and soda ash softening

☐ **Change disinfectant to chloramine or chlorine dioxide until KWA**

☐ Install pre-oxidant feed at intake to optimize ozone disinfection

☐ Implement advanced treatment for THM precursor removal

☐ Increased main flushing based on water modeling results

☐ Continue valve replacements with water model assistance

 Emphasize cast iron pipes on water main replacement priority list"

I would think, based on the OEL, that everyone (State, public, etc.) should be aware that Flint is contemplating a switch to a different disinfectant, but only after they exhaust a slew of less drastic remedies for their DBP issues.

Hope that helps.

Thanks,

Andrea Porter

Environmental Engineer

Ground Water & Drinking Water Branch

U.S. EPA, Region 5 (WG-15J)

77 W. Jackson Blvd.

Chicago, IL 60604

Phone: 312-886-4427

Fax: 312-697-2656

From: Crooks, Jennifer
Sent: Tuesday, April 07, 2015 3:29 PM
To: Deltoral, Miguel
Cc: Poy, Thomas; Porter, Andrea; Harris, Kimberly
Subject: RE: Lead levels and Chloramine

Tom P and I met this morning to discuss various issues going on in MI, related to Flint. One topic that came up was the City's possible switchover to chloramines (this topic came up at a public meeting in Flint), and its possible effect on lead in the Flint drinking water, such as what happened in DC. We called Michael Wright to see if that recommendation came out of the Flint Technical Advisory committee. Mike had not heard that recommendation, but totally understood the overall ramifications on the system, that while the change over to chloramines would most likely decrease TTHMs, it also might detrimentally affect the lead levels at the tap. The State had not heard that Flint was contemplating this change over to chloramines, so Mike Prysby said he would check in with Flint.

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To: Deltoral, Miguel
Cc: Thomas Poy
Subject: RE: Lead levels and Chloramine

Thank you, Miguel. This entire discussion is bringing this to the forefront of the disaster, as you say. I think we should discuss getting a group of experts together with Liane, too, at our April 28 lunch meeting.

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Sent: Tuesday, April 07, 2015 8:17 AM
To: Crooks, Jennifer
Cc: Porter, Andrea
Subject: Re: Lead levels and Chloramine

You can have Citizen name / Ex. 6 call me and I can explain Pb-IV, what happened in DC and why.

Miguel A. Del Toral

Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

From: Crooks, Jennifer

Sent: Monday, April 6, 2015 01:47 PM
To: Deltoral, Miguel
Cc: Porter, Andrea
Subject: RE: Lead levels and Chloramine

So, Andrea explained that the Pb-IV is the hard Pb lining that DC's pipes got from the years of over chlorinating. You said below that you don't think that Flint had any Pb-IV, so Flint will probably not have the lead issues that DC had. But, as you said, any significant changes in the water chemistry, can cause a wealth of problems.

Jen

From: Deltoral, Miguel
Sent: Friday, April 03, 2015 4:44 PM
To: Crooks, Jennifer
Cc: Poy, Thomas; Harris, Kimberly; Schock, Michael; Porter, Andrea
Subject: Re: Lead levels and Chloramine

I seriously doubt that they have any Pb-IV in Flint, but anytime you make the significant and it seems iterative changes to the water chemistry, you are asking for trouble. I think we are going to need to think real hard about including mandatory OCCT studies and mandatory increased monitoring for at least some treatment changes.

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Chicago, IL 60604
Phone: (312) 886-5253

From: Crooks, Jennifer
Sent: Thursday, April 2, 2015 09:13 AM
To: Deltoral, Miguel
Cc: Poy, Thomas; Harris, Kimberly
Subject: Lead levels and Chloramine

Miguel—In light of the possibility of Flint going to chloramine use, Citizen name / Ex. 6 brought up a significant comparison to the DC lead fiasco. What will lead levels look like after the switchover to chloramines, since there are lead service lines in Flint? She cites from the CDC research study below. Specifically, this paragraph:

"Changes in water treatment and disinfection practices can substantially undermine lead corrosion control (*60*). In the mid-1990s in the District of Columbia (DC), high levels of free chlorine were used to decrease coliform bacteria in water, a process that inadvertently changed the type of lead mineral coating in the water lines to one with very low solubility in the background pH of the DC drinking water. When the free chlorine was replaced with chloramines, the transformed highly insoluble lead scale minerals were no longer stable and dissolved. Therefore, a substantial level of lead was released from the lead service lines into drinking water at the tap (*61*). CDC reviewed the relationship between BLLs in children, the presence of a lead service line, and water disinfection practices in DC during 1998–2006 (*62*). The study reported that the presence of a lead service line was associated with higher BLLs in children. This relationship was most pronounced during 2001 through June 2004, when chloramines were used to disinfect the drinking water without adequate corrosion control (*62*). An observational study in which the BLLs of children were matched to population-based data of water lead levels during periods when water disinfection practices changed in DC concluded that the increase in water lead levels was associated with an increase in the BLLs of children (*63*). In a study in Wayne County, North Carolina, a unified geographic information system was used to link BLLs with water service lines made with or without lead. The use of chloramines in water predicted higher water lead levels and BLLs, controlling for well-established, known predictors of BLL (*44*)."

From: Citizen name / Ex. 6
Sent: Wednesday, April 01, 2015 10:23 PM
To: Crooks, Jennifer
Subject: Lead and Chloramine

Ms. Crooks,

I know I already sent you an email but during further research I discovered this. I thought is was something that should be seen with the recent recommendations of Chloramine possibly being added as a solution.

http://www.cdc.gov/mmwr/preview/mmwrhtml/su6104a1.htm?s_cid=su6104a1_w

LCR And Control Measures Sections, 4th paragraph down. This is my concern with the new chemicals the city wants approval for. What happens to the other citizens who do not know they have an elevated lead content or for the ones who have already tested with elevated levels? I know one of the other levels was 37, that was the highest the city had seen before my levels, what will it look like when Chloramine is added?

Thank you

Citizen name / Ex. 6

To: Porter, Andrea[porter.andrea@epa.gov]
From: Crooks, Jennifer
Sent: Tue 4/7/2015 9:00:37 PM
Subject: RE: Lead levels and Chloramine

Thank YOU, Andrea!

Jen

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Subject: Lead levels and Chloramine

Miguel—In light of the possibility of Flint going to chloramine use, Citizen name / Ex. 6 brought up a significant comparison to the DC lead fiasco. What will lead levels look like after the switchover to chloramines, since there are lead service lines in Flint? She cites from the CDC research study below. Specifically, this paragraph:

"Changes in water treatment and disinfection practices can substantially undermine lead corrosion control (*60*). In the mid-1990s in the District of Columbia (DC), high levels of free chlorine were used to decrease coliform bacteria in water, a process that inadvertently changed the type of lead mineral coating in the water lines to one with very low solubility in the background pH of the DC drinking water. When the free chlorine was replaced with chloramines, the transformed highly insoluble lead scale minerals were no longer stable and dissolved. Therefore, a substantial level of lead was released from the lead service lines into drinking water at the tap (*61*). CDC reviewed the relationship between BLLs in children, the presence of a lead service line, and water disinfection practices in DC during 1998–2006 (*62*). The study reported that the presence of a lead service line was associated with higher BLLs in children. This relationship was most pronounced during 2001 through June 2004, when chloramines were used to disinfect the drinking water without adequate corrosion control (*62*). An observational study in which the BLLs of children were matched to population-based data of water lead levels during periods when water disinfection practices changed in DC concluded that the increase in water lead levels was associated with an increase in the BLLs of children (*63*). In a study in Wayne County, North Carolina, a unified geographic information system was used to link BLLs with water service lines made with or without lead. The use of chloramines in water predicted higher water lead levels and BLLs, controlling for well-established, known predictors of BLL (*44*)."

From: Citizen name / Ex. 6
Sent: Wednesday, April 01, 2015 10:23 PM
To: Crooks, Jennifer
Subject: Lead and Chloramine

Ms. Crooks,

I know I already sent you an email but during further research I discovered this. I thought is was something that should be seen with the recent recommendations of Chloramine possibly being added as a solution.

http://www.cdc.gov/mmwr/preview/mmwrhtml/su6104a1.htm?s_cid=su6104a1_w

LCR And Control Measures Sections, 4th paragraph down. This is my concern with the new chemicals the city wants approval for. What happens to the other citizens who do not know they have an elevated lead content or for the ones who have already tested with elevated levels? I know one of the other levels was 37, that was the highest the city had seen before my levels, what will it look like when Chloramine is added?

Thank you

Citizen name / Ex. 6

To: Poy, Thomas[poy.thomas@epa.gov]
Cc: Porter, Andrea[porter.andrea@epa.gov]; Bair, Rita[bair.rita@epa.gov]; Crooks, Jennifer[crooks.jennifer@epa.gov]
From: Deltoral, Miguel
Sent: Thur 4/16/2015 1:30:06 PM
Subject: Management Approval Needed

Hi Tom,

Nonresponsive

Nonresponsive mentioned the second (Flint) request to you last week. Please let me know if it's OK to forward these requests to the EPA R5 lab. I have already given Amanda Wroble a heads-up that this was coming a couple of weeks ago, so they are expecting it.

Nonresponsive

Nonresponsive

Sampling Request # 2: Flint, MI High Lead Site (Citizen name / Ex. 6)

Citizen name / Ex. 6 had very high lead and high iron in her water and a very long (136 ft) lead service line. She was under the assumption that once the lead service line is removed, the lead would be gone. She knows about leaded-brass already, so I informed Citizen name / Ex. 6 Citizen name / Ex. 6 that any scale that has formed inside the plastic pipe could contain lead transported into the premise plumbing from the lead service line, but the extent of any contamination is not known. Given that her lead levels were very high, my fear is that if there is a significant amount of scale formed in the premise plumbing, she may still have a problem. Once the lead service line is removed and her plumbing thoroughly flushed, I asked if she would collect sequential samples to check whether the interior plumbing has been contaminated by lead/other metals transported into the home. Citizen name / Ex. 6 indicated that she is willing to collect the samples. This is also a unique opportunity to investigate the extent to which an all-plastic plumbing network can be contaminated with lead from lead service lines. We very likely will not run across this situation again.

One round of sequential samples (17 samples) would be collected in June/July. Should high lead be found, a second round of sequential samples would be collected in Aug/Sept 2015.

Lab work requested

- Ship 17 wide-mouth 1-L bottles to Citizen name / Ex. 6 in June/July
- Ship a second set of bottles, if needed, in Aug/Sept 2015
- Lab filtration of a portion of each sample upon arrival in lab
- Lab analyses for both the filtered and unfiltered portions of each sample for Pb/Cu

Analytes – Same as WI WRF sampling above.

Results sent to EPA Region 5 GWDWB for distribution.

Miguel A. Del Toral
Regulations Manager

U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

To: Deltoral, Miguel[deltoral.miguel@epa.gov]
Cc: Porter, Andrea[porter.andrea@epa.gov]; Bair, Rita[bair.rita@epa.gov]; Crooks, Jennifer[crooks.jennifer@epa.gov]
From: Poy, Thomas
Sent: Thur 4/16/2015 1:32:36 PM
Subject: RE: Management Approval Needed

Miguel: Go ahead and send the request to the lab.

Tom

Tom Poy

Chief, Ground Water and Drinking Water Branch

USEPA - Region 5

(312) 886-5991

From: Deltoral, Miguel
Sent: Thursday, April 16, 2015 8:30 AM
To: Poy, Thomas
Cc: Porter, Andrea; Bair, Rita; Crooks, Jennifer
Subject: Management Approval Needed
Importance: High

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77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

To: Deltoral, Miguel[deltoral.miguel@epa.gov]
From: Crooks, Jennifer
Sent: Thur 4/16/2015 3:43:42 PM
Subject: FW: Management Approval Needed

Nonresponsive

From: Poy, Thomas
Sent: Thursday, April 16, 2015 8:33 AM
To: Deltoral, Miguel
Cc: Porter, Andrea; Bair, Rita; Crooks, Jennifer
Subject: RE: Management Approval Needed

Miguel: Go ahead and send the request to the lab.

Tom

Tom Poy

Chief, Ground Water and Drinking Water Branch

USEPA - Region 5

(312) 886-5991

From: Deltoral, Miguel
Sent: Thursday, April 16, 2015 8:30 AM
To: Poy, Thomas
Cc: Porter, Andrea; Bair, Rita; Crooks, Jennifer
Subject: Management Approval Needed
Importance: High

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U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

To: Crooks, Jennifer[crooks.jennifer@epa.gov]
From: Glowacki, Joanna
Sent: Thur 4/16/2015 6:48:01 PM
Subject: RE: FYI-Lead sampling request for Flint

Thanks, Jennifer.

Joanna S. Glowacki

Associate Regional Counsel

U.S. Environmental Protection Agency

Region 5

77 West Jackson Boulevard (C-14J)

Chicago, Illinois 60604

312-353-3757

312-385-5464 fax

From: Crooks, Jennifer
Sent: Thursday, April 16, 2015 1:00 PM
To: Glowacki, Joanna
Subject: FYI-Lead sampling request for Flint

Nonresponsive nothing to do with Flint. Please look at Miguel's sampling request #2 below regarding Flint, Citizen name / Ex. 6 home.

Jennifer

From: Poy, Thomas
Sent: Thursday, April 16, 2015 8:33 AM
To: Deltoral, Miguel
Cc: Porter, Andrea; Bair, Rita; Crooks, Jennifer
Subject: RE: Management Approval Needed

Miguel: Go ahead and send the request to the lab.

Tom

Tom Poy

Chief, Ground Water and Drinking Water Branch

USEPA - Region 5

(312) 886-5991

From: Deltoral, Miguel
Sent: Thursday, April 16, 2015 8:30 AM
To: Poy, Thomas
Cc: Porter, Andrea; Bair, Rita; Crooks, Jennifer
Subject: Management Approval Needed
Importance: High

Hi Tom,

Nonresponsive
Nonresponsive I mentioned the second (Flint) request to you last week. Please let me know if it's OK to forward these requests to the EPA R5 lab. I have already given Amanda Wroble a heads-up that this was coming a couple of weeks ago, so they are expecting it.

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Results sent to EPA Region 5 GWDWB for distribution.

Miguel A. Del Toral

Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

To: Crooks, Jennifer[crooks.jennifer@epa.gov]
From: Deltoral, Miguel
Sent: Fri 4/17/2015 11:22:55 AM
Subject: Re: Management Approval Needed

Water Research Foundation. It used to be called the American Water Works Association Research Foundation.

Miguel A. Del Toral
Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

From: Crooks, Jennifer
Sent: Thursday, April 16, 2015 10:43 AM
To: Deltoral, Miguel
Subject: FW: Management Approval Needed

What's the "WRF" project? What does "WRF" stand for?

From: Poy, Thomas
Sent: Thursday, April 16, 2015 8:33 AM
To: Deltoral, Miguel
Cc: Porter, Andrea; Bair, Rita; Crooks, Jennifer
Subject: RE: Management Approval Needed

Miguel: Go ahead and send the request to the lab.

Tom

Tom Poy

Chief, Ground Water and Drinking Water Branch

USEPA - Region 5

(312) 886-5991

From: Deltoral, Miguel
Sent: Thursday, April 16, 2015 8:30 AM
To: Poy, Thomas
Cc: Porter, Andrea; Bair, Rita; Crooks, Jennifer
Subject: Management Approval Needed
Importance: High

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Chicago, IL 60604
Phone: (312) 886-5253

To: Poy, Thomas[poy.thomas@epa.gov]; Damato, Nicholas[damato.nicholas@epa.gov]; Bair, Rita[bair.rita@epa.gov]
Cc: Crooks, Jennifer[crooks.jennifer@epa.gov]
From: Deltoral, Miguel
Sent: Wed 4/22/2015 12:45:11 PM
Subject: Troubling development in Flint

Good morning Tom,

Yesterday I received a very troubling voicemail message from **Citizen name / Ex. 6**, so I called her back. She informs that the city has shut off her water, and gave her a 'no fault agreement' to sign whereby she would have to waive any claim against the city for lead poisoning damage to her children from the lead in the drinking water (I will forward the agreement she sent me in two parts). She informs that the city will not remove the lead service line unless she signs the agreement. Right now, her neighbors are providing water through garden hoses for washing dishes, laundry and bathing and she said the city told her that if she does not sign the agreement, the city would declare the home unfit for habitation due to no running water. She said a plumber has looked at the pipe coming into her home and that it is galvanized pipe coming in. Although we cannot tell what is in the ground, it was common practice in many cities to require lead pipe to be used for the portion of the service line owned by the city, and residents were free to use any service material on their property. If her portion of the service line is in fact galvanized steel, the lead would be coming entirely from the city portion of the service line which is lead. If the city is entirely responsible for the leaded portion of the line, it seems completely inappropriate (at best) for the city to shut their water off and threaten to evict them if they do not sign a liability waiver. On March 23, 2015, Steve Busch (MDEQ) left me a voicemail messasge, which I will forward to you, indicating that this was the resident's problem and that she needed to hire a plumber to fix it and that MDEQ was not planning any further action.

Given the very high lead levels found, the fact that the city has shut off her water due to a condition that is their responsibility, and given and the city and state's reluctance to address the legitimate health threat except in a manner that appears to be completely inappropriate at best, I am recommending that we ask ORC/OGC whether a 1431 order on imminent and substantial endangerment to the family is appropriate here. The city should be required to remove the lead hazard posed by their lead line and restore water service to the home as it is completely unreasonable to shut off someone's water for something that appears to be the fault of the city and to threaten to evict the person if she does not sign the liability waiver. Whatever else is decided on this matter, regarding liability should be handled separately.

Miguel A. Del Toral
Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)

Chicago, IL 60604
Phone: (312) 886-5253

To: Deltoral, Miguel[deltoral.miguel@epa.gov]; Poy, Thomas[poy.thomas@epa.gov]; Damato, Nicholas[damato.nicholas@epa.gov]; Bair, Rita[bair.rita@epa.gov]
From: Crooks, Jennifer
Sent: Wed 4/22/2015 3:38:28 PM
Subject: RE: Troubling development in Flint

This has to be illegal what the city is doing; threatening the resident with shut-off if she doesn't sign a waiver? At best, this intimidation. Attorney Client / Ex. 5

Attorney Client / Ex. 5

Jen

From: Deltoral, Miguel
Sent: Wednesday, April 22, 2015 7:45 AM
To: Poy, Thomas; Damato, Nicholas; Bair, Rita
Cc: Crooks, Jennifer
Subject: Troubling development in Flint

Good morning Tom,

Yesterday I received a very troubling voicemail message from Citizen name / Ex. 6 so I called her back. She informs that the city has shut off her water, and gave her a 'no fault agreement' to sign whereby she would have to waive any claim against the city for lead poisoning damage to her children from the lead in the drinking water (I will forward the agreement she sent me in two parts). She informs that the city will not remove the lead service line unless she signs the agreement. Right now, her neighbors are providing water through garden hoses for washing dishes, laundry and bathing and she said the city told her that if she does not sign the agreement, the city would declare the home unfit for habitation due to no running water. She said a plumber has looked at the pipe coming into her home and that it is galvanized pipe coming in. Although we cannot tell what is in the ground, it was common practice in many cities to require lead pipe to be used for the portion of the service line owned by the city, and residents were free to use any service material on their property. If her portion of the service line is in fact galvanized steel, the lead would be coming entirely from the city portion of the service line which is lead. If the city is entirely responsible for the leaded portion of the line, it seems completely inappropriate (at best) for the city to shut their water off and threaten to evict them if they do not sign a liability waiver. On March 23, 2015, Steve Busch (MDEQ) left me a voicemail messasge, which I will forward to you, indicating that this was the resident's problem and that she needed to hire a plumber to fix it and that MDEQ was not planning any further action.

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Miguel A. Del Toral

Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

To: Citizen name / Ex. 6
From: Deltoral, Miguel
Sent: Wed 4/22/2015 4:22:38 PM
Subject: Fw: Paul's contact info
40 CFR 2014.pdf
Importance of pipe deposits to Lead and Copper Rule compliance.pdf

Hello Citizen name / Ex. 6

Below is Mr. Joice's contact information.

Attached is the study I mentioned on iron sorbing lead from lead service lines. This happens in one of two ways:

1) The water has iron either from the raw water or from the water main, and as that iron-rich water passes through the lead service line, the lead sorbs onto that iron and both the lead/iron continue on into the home.

2) The home has galvanized iron pipes and the dissolved and particulate lead released into the water from the lead service lines sorbs onto the exposed iron on the inside of the galvanized pipe in the home and 'seeds' the galvanized iron pipe with lead.

In your case, based on the information provided, you have high iron from the water main and/or your galvanized service pipe. The iron from the water main can pick up lead as it passes through the lead portion of the service line owned by the city. That lead can then be transported and deposited in your portion of the service line made of galvnized iron pipe if there is exposed iron on the inside of that pipe, which is very likely.

The federal regulations governing lead and copper in drinking water, which all States are required to adopt, require all large public water systems (those serving greater than 50,000 persons) to install and maintain optimal corrosion control.

The federal citation for the 'Lead and Copper Rule' is Title 40 Code of Federal Regulations (CFR), Subpart I - Control of Lead and Copper. The entire Lead and Copper regulation begins on page 498 and goes through 529 (attached).

Within Subpart I, the federal citation (requirement) requiring optimal corrosion control treatment can be found at Title 40 Code of Federal Regulations (CFR), Subpart I, Section 141.80, paragraph (d), as follows:

"(d) Corrosion control treatment requirements. [on page 498]

(1) All water systems shall install and operate optimal corrosion control treatment as defined in 141.2.

(2) Any water system that complies with the applicable corrosion control treatment requirements specified by the State under 141.81 and 141.82 shall be deemed in compliance with the treatment requirement contained in paragraph (d)(1) of this section."

Paragraph (1) above requires systems to have installed treatment unless they have low lead levels (defined in other parts of the rule), but based on the Flint's current 90th percentile lead level, they would not meet that criteria and must have optimal corrosion control in place.

Title 40 CFR Section 141.2 [on page 391] defines optimal corrosion control treatment as follows:

"Optimal corrosion control treatment, for the purpose of subpart I of this part only, means the corrosion control treatment that minimizes the lead and copper concentrations at users' taps while insuring that the treatment does not cause the water system to violate any national primary drinking water regulations."

If you have any questions, please feel free to call or email me anytime.

Miguel A. Del Toral
Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

From: Poy, Thomas
Sent: Wednesday, April 22, 2015 08:29 AM
To: Deltoral, Miguel
Subject: Paul's contact info

Paul Joice

Flint Team Lead, White House Strong Cities, Strong Communities Initiative

Office: (810) 766-7135, Ext 3005

Mobile: (202) 423-6091

Paul.A.Joice@hud.gov

Tom Poy

Chief, Ground Water and Drinking Water Branch

USEPA - Region 5

(312) 886-5991

Cc: Crooks, Jennifer[crooks.jennifer@epa.gov]
To: Poy, Thomas[poy.thomas@epa.gov]; Damato, Nicholas[damato.nicholas@epa.gov]; Bair, Rita[bair.rita@epa.gov]
From: Deltoral, Miguel
Sent: Wed 4/22/2015 4:25:53 PM
Subject: Fw: Paul's contact info
40 CFR 2014.pdf
Importance of pipe deposits to Lead and Copper Rule compliance.pdf

fyi - Citizen name / Ex. 6 will be contacting Paul Joice with all information relevant to her complaint.

Miguel A. Del Toral
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U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
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Sent: Wednesday, April 22, 2015 11:22 AM
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To: Deltoral, Miguel
Subject: Paul's contact info

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with a notice of proposed rulemaking, and then shall proceed in accordance with 5 U.S.C. 553. If the Administrator's finding is that a complete prohibition covering a more restricted or more expanded area than that applied for by the State is appropriate, he or she shall also include a statement of the reasons why the finding differs in scope from that requested in the State's application.

(3) If the Administrator finds that a complete prohibition is inappropriate under this paragraph, he or she shall deny the application and state the reasons for such denial.

(4) For the following waters the discharge from a vessel of any sewage, whether treated or not, is completely prohibited pursuant to CWA section 312(f)(4)(B):

(i) Two portions of the Hudson River in New York State, the first is bounded by an east-west line through the most northern confluence of the Mohawk River which will be designated by the Troy-Waterford Bridge (126th Street Bridge) on the south and Lock 2 on the north, and the second of which is bounded on the north by the southern end of Houghtaling Island and on the south by a line between the Village of Roseton on the western shore and Low Point on the eastern shore in the vicinity of Chelsea, as described in Items 2 and 3 of 6 NYCRR Part 858.4.

(ii) [Reserved]

[41 FR 4453, Jan. 29, 1976, as amended at 42 FR 43837, Aug. 31, 1977; 60 FR 63945, Dec. 13, 1995; 63 FR 1320, Jan. 8, 1998; 67 FR 35743, May 21, 2002; 77 FR 11411, Feb. 27, 2012]

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AUTHORITY: 42 U.S.C. 300f, 300g–1, 300g–2, 300g–3, 300g–4, 300g–5, 300g–6, 300j–4, 300j–9, and 300j–11.

SOURCE: 40 FR 59570, Dec. 24, 1975, unless otherwise noted.

EDITORIAL NOTE: Nomenclature changes to part 141 appear at 69 FR 18803, Apr. 9, 2004.

NOTE: For community water systems serving 75,000 or more persons, monitoring must begin 1 year following promulgation and the effective date of the MCL is 2 years following promulgation. For community water systems serving 10,000 to 75,000 persons, monitoring must begin within 3 years from the date of promulgation and the effective date of the MCL is 4 years from the date of promulgation. Effective immediately, systems that plan to make significant modifications to their treatment processes for the purpose of complying with the TTHM MCL are required to seek and obtain State approval of their treatment modification plans. This note affects §§141.2, 141.6, 141.12, 141.24 and 141.30. For additional information see 44 FR 68641, Nov. 29, 1979.

Subpart A—General

§141.1 Applicability.

This part establishes primary drinking water regulations pursuant to section 1412 of the Public Health Service Act, as amended by the Safe Drinking Water Act (Pub. L. 93–523); and related regulations applicable to public water systems.

§141.2 Definitions.

As used in this part, the term:

Act means the Public Health Service Act, as amended by the Safe Drinking Water Act, Public Law 93–523.

Action level, is the concentration of lead or copper in water specified in §141.80(c) which determines, in some cases, the treatment requirements contained in subpart I of this part that a water system is required to complete.

Bag filters are pressure-driven separation devices that remove particulate matter larger than 1 micrometer using an engineered porous filtration media. They are typically constructed of a non-rigid, fabric filtration media housed in a pressure vessel in which the direction of flow is from the inside of the bag to outside.

Bank filtration is a water treatment process that uses a well to recover surface water that has naturally infiltrated into ground water through a river bed or bank(s). Infiltration is typically enhanced by the hydraulic gradient imposed by a nearby pumping water supply or other well(s).

Best available technology or *BAT* means the best technology, treatment techniques, or other means which the Administrator finds, after examination for efficacy under field conditions and not solely under laboratory conditions, are available (taking cost into consideration). For the purposes of setting MCLs for synthetic organic chemicals, any BAT must be at least as effective as granular activated carbon.

Cartridge filters are pressure-driven separation devices that remove particulate matter larger than 1 micrometer using an engineered porous filtration media. They are typically constructed as rigid or semi-rigid, self-supporting filter elements housed in pressure vessels in which flow is from the outside of the cartridge to the inside.

Clean compliance history is, for the purposes of subpart Y, a record of no MCL violations under §141.63; no monitoring violations under §141.21 or subpart Y; and no coliform treatment technique trigger exceedances or treatment technique violations under subpart Y.

Coagulation means a process using coagulant chemicals and mixing by which colloidal and suspended materials are destabilized and agglomerated into flocs.

Combined distribution system is the interconnected distribution system consisting of the distribution systems of wholesale systems and of the consecutive systems that receive finished water.

Community water system means a public water system which serves at least 15 service connections used by year-round residents or regularly serves at least 25 year-round residents.

Compliance cycle means the nine-year calendar year cycle during which public water systems must monitor. Each compliance cycle consists of three three-year compliance periods. The first calendar year cycle begins January 1, 1993 and ends December 31, 2001; the second begins January 1, 2002 and ends December 31, 2010; the third begins January 1, 2011 and ends December 31, 2019.

Compliance period means a three-year calendar year period within a compliance cycle. Each compliance cycle has three three-year compliance periods. Within the first compliance cycle, the first compliance period runs from January 1, 1993 to December 31, 1995; the second from January 1, 1996 to December 31, 1998; the third from January 1, 1999 to December 31, 2001.

Comprehensive performance evaluation (CPE) is a thorough review and analysis of a treatment plant's performance-based capabilities and associated administrative, operation and maintenance practices. It is conducted to identify factors that may be adversely impacting a plant's capability to achieve compliance and emphasizes approaches that can be implemented without significant capital improvements. For purpose of compliance with subparts P and T of this part, the comprehensive performance evaluation must consist of at least the following components: Assessment of plant performance; evaluation of major unit processes; identification and prioritization of performance limiting factors; assessment of the applicability of comprehensive technical assistance; and preparation of a CPE report.

Confluent growth means a continuous bacterial growth covering the entire filtration area of a membrane filter, or a portion thereof, in which bacterial colonies are not discrete.

Consecutive system is a public water system that receives some or all of its finished water from one or more wholesale systems. Delivery may be through a direct connection or through the distribution system of one or more consecutive systems.

Contaminant means any physical, chemical, biological, or radiological substance or matter in water.

Conventional filtration treatment means a series of processes including coagulation, flocculation, sedimentation, and filtration resulting in substantial particulate removal.

Corrosion inhibitor means a substance capable of reducing the corrosivity of water toward metal plumbing materials, especially lead and copper, by forming a protective film on the interior surface of those materials.

CT or *CTcalc* is the product of ''residual disinfectant concentration'' (C) in mg/1 determined before or at the first customer, and the corresponding ''disinfectant contact time'' (T) in minutes, *i.e.*, ''C'' x ''T''. If a public water system applies disinfectants at more than one point prior to the first customer, it must determine the CT of each disinfectant sequence before or at the first customer to determine the total percent inactivation or ''total inactivation ratio.'' In determining the total inactivation ratio, the public water system must determine the residual disinfectant concentration of each disinfection sequence and corresponding contact time before any subsequent disinfection application point(s). ''$CT_{99.9}$'' is the CT value required for 99.9 percent (3–log) inactivation of *Giardia lamblia* cysts. $CT_{99.9}$ for a variety of disinfectants and conditions appear in tables 1.1–1.6, 2.1, and 3.1 of §141.74(b)(3).

$$\frac{\text{CTcalc}}{\text{CT}_{99.9}}$$

is the inactivation ratio. The sum of the inactivation ratios, or total inactivation ratio shown as

$$\sum \frac{(\mathrm{CTcalc})}{(\mathrm{CT}_{99.9})}$$

is calculated by adding together the inactivation ratio for each disinfection sequence. A total inactivation ratio equal to or greater than 1.0 is assumed to provide a 3-log inactivation of *Giardia lamblia* cysts.

Diatomaceous earth filtration means a process resulting in substantial particulate removal in which (1) a precoat cake of diatomaceous earth filter media is deposited on a support membrance (septum), and (2) while the water is filtered by passing through the cake on the septum, additional filter media known as body feed is continuously added to the feed water to maintain the permeability of the filter cake.

Direct filtration means a series of processes including coagulation and filtration but excluding sedimentation resulting in substantial particulate removal.

Disinfectant means any oxidant, including but not limited to chlorine, chlorine dioxide, chloramines, and ozone added to water in any part of the treatment or distribution process, that is intended to kill or inactivate pathogenic microorganisms.

Disinfectant contact time (''T'' in CT calculations) means the time in minutes that it takes for water to move from the point of disinfectant application or the previous point of disinfectant residual measurement to a point before or at the point where residual disinfectant concentration (''C'') is measured. Where only one ''C'' is measured, ''T'' is the time in minutes that it takes for water to move from the point of disinfectant application to a point before or at where residual disinfectant concentration (''C'') is measured. Where more than one ''C'' is measured, ''T'' is (a) for the first measurement of ''C'', the time in minutes that it takes for water to move from the first or only point of disinfectant application to a point before or at the point where the first ''C'' is measured and (b) for subsequent measurements of ''C'', the time in minutes that it takes for water to move from the previous ''C'' measurement point to the ''C'' measurement point for which the particular ''T'' is being calculated. Disinfectant contact time in pipelines must be calculated based on ''plug flow'' by dividing the internal volume of the pipe by the maximum hourly flow rate through that pipe. Disinfectant contact time within mixing basins and storage reservoirs must be determined by tracer studies or an equivalent demonstration.

Disinfection means a process which inactivates pathogenic organisms in water by chemical oxidants or equivalent agents.

Disinfection profile is a summary of *Giardia lamblia* inactivation through the treatment plant. The procedure for developing a disinfection profile is contained in §141.172 (Disinfection profiling and benchmarking) in subpart P and §§141.530–141.536 (Disinfection profile) in subpart T of this part.

Domestic or other non-distribution system plumbing problem means a coliform contamination problem in a public water system with more than one service connection that is limited to the specific service connection from which the coliform-positive sample was taken.

Dose equivalent means the product of the absorbed dose from ionizing radiation and such factors as account for differences in biological effectiveness due to the type of radiation and its distribution in the body as specified by the International Commission on Radiological Units and Measurements (ICRU).

Dual sample set is a set of two samples collected at the same time and same location, with one sample analyzed for TTHM and the other sample analyzed for HAA5. Dual sample sets are collected for the purposes of conducting an IDSE under subpart U of this part and determining compliance with the TTHM and HAA5 MCLs under subpart V of this part.

Effective corrosion inhibitor residual, for the purpose of subpart I of this part only, means a concentration sufficient to form a passivating film on the interior walls of a pipe.

Enhanced coagulation means the addition of sufficient coagulant for improved removal of disinfection byproduct precursors by conventional filtration treatment.

Enhanced softening means the improved removal of disinfection byproduct precursors by precipitative softening.

Filter profile is a graphical representation of individual filter performance, based on continuous turbidity measurements or total particle counts versus time for an entire filter run, from startup to backwash inclusively, that includes an assessment of filter performance while another filter is being backwashed.

Filtration means a process for removing particulate matter from water by passage through porous media.

Finished water is water that is introduced into the distribution system of a public water system and is intended for distribution and consumption without further treatment, except as treatment necessary to maintain water quality in the distribution system (e.g., booster disinfection, addition of corrosion control chemicals).

First draw sample means a one-liter sample of tap water, collected in accordance with §141.86(b)(2), that has been standing in plumbing pipes at least 6 hours and is collected without flushing the tap.

Flocculation means a process to enhance agglomeration or collection of smaller floc particles into larger, more easily settleable particles through gentle stirring by hydraulic or mechanical means.

Flowing stream is a course of running water flowing in a definite channel.

GAC10 means granular activated carbon filter beds with an empty-bed contact time of 10 minutes based on average daily flow and a carbon reactivation frequency of every 180 days, except that the reactivation frequency for GAC10 used as a best available technology for compliance with subpart V MCLs under §141.64(b)(2) shall be 120 days.

GAC20 means granular activated carbon filter beds with an empty-bed contact time of 20 minutes based on average daily flow and a carbon reactivation frequency of every 240 days.

Ground water under the direct influence of surface water (GWUDI) means any water beneath the surface of the ground with significant occurrence of insects or other macroorganisms, algae, or large-diameter pathogens such as *Giardia lamblia* or *Cryptosporidium,* or significant and relatively rapid shifts in water characteristics such as turbidity, temperature, conductivity, or pH which closely correlate to climatological or surface water conditions. Direct influence must be determined for individual sources in accordance with criteria established by the State. The State determination of direct influence may be based on site-specific measurements of water quality and/or documentation of well construction characteristics and geology with field evaluation.

Gross alpha particle activity means the total radioactivity due to alpha particle emission as inferred from measurements on a dry sample.

Gross beta particle activity means the total radioactivity due to beta particle emission as inferred from measurements on a dry sample.

Haloacetic acids (five) (HAA5) mean the sum of the concentrations in milligrams per liter of the haloacetic acid compounds (monochloroacetic acid, dichloroacetic acid, trichloroacetic acid, monobromoacetic acid, and dibromoacetic acid), rounded to two significant figures after addition.

Halogen means one of the chemical elements chlorine, bromine or iodine.

Initial compliance period means the first full three-year compliance period which begins at least 18 months after promulgation, except for contaminants listed at §141.61(a) (19)–(21), (c) (19)–(33), and §141.62(b) (11)–(15), initial compliance period means the first full three-year compliance period after promulgation for systems with 150 or more service connections (January 1993–December 1995), and first full three-year compliance period after the effective date of the regulation (January 1996–December 1998) for systems having fewer than 150 service connections.

Lake/reservoir refers to a natural or man made basin or hollow on the Earth's surface in which water collects or is stored that may or may not have a current or single direction of flow.

Large water system, for the purpose of subpart I of this part only, means a water system that serves more than 50,000 persons.

Lead service line means a service line made of lead which connects the water main to the building inlet and any lead pigtail, gooseneck or other fitting which is connected to such lead line.

Legionella means a genus of bacteria, some species of which have caused a type of pneumonia called Legionnaires Disease.

Level 1 assessment is an evaluation to identify the possible presence of sanitary defects, defects in distribution system coliform monitoring practices, and (when possible) the likely reason that the system triggered the assessment. It is conducted by the system operator or owner. Minimum elements include review and identification of atypical events that could affect distributed water quality or indicate that distributed water quality was impaired; changes in distribution system maintenance and operation that could affect distributed water quality (including water storage); source and treatment considerations that bear on distributed water quality, where appropriate (e.g., whether a ground water system is disinfected); existing water quality monitoring data; and inadequacies in sample sites, sampling protocol, and sample processing. The system must conduct the assessment consistent with any State directives that tailor specific assessment elements with respect to the size and type of the system and the size, type, and characteristics of the distribution system.

Level 2 assessment is an evaluation to identify the possible presence of sanitary defects, defects in distribution system coliform monitoring practices, and (when possible) the likely reason that the system triggered the assessment. A Level 2 assessment provides a more detailed examination of the system (including the system's monitoring and operational practices) than does a Level 1 assessment through the use of more comprehensive investigation and review of available information, additional internal and external resources, and other relevant practices. It is conducted by an individual approved by the State, which may include the system operator. Minimum elements include review and identification of atypical events that could affect distributed water quality or indicate that distributed water quality was impaired; changes in distribution system maintenance and operation that could affect distributed water quality (including water storage); source and treatment considerations that bear on distributed water quality, where appropriate (e.g., whether a ground water system is disinfected); existing water quality monitoring data; and inadequacies in sample sites, sampling protocol, and sample processing. The system must conduct the assessment consistent with any State directives that tailor specific assessment elements with respect to the size and type of the system and the size, type, and characteristics of the distribution system. The system must comply with any expedited actions or additional actions required by the State in the case of an *E. coli* MCL violation.

Locational running annual average (LRAA) is the average of sample analytical results for samples taken at a particular monitoring location during the previous four calendar quarters.

Man-made beta particle and photon emitters means all radionuclides emitting beta particles and/or photons listed in Maximum Permissible Body Burdens and Maximum Permissible Concentration of Radionuclides in Air or Water for Occupational Exposure, NBS Handbook 69, except the daughter products of thorium–232, uranium–235 and uranium–238.

Maximum contaminant level means the maximum permissable level of a contaminant in water which is delivered to any user of a public water system.

Maximum contaminant level goal or *MCLG* means the maximum level of a contaminant in drinking water at which no known or anticipated adverse effect on the health of persons would occur, and which allows an adequate margin of safety. Maximum contaminant level goals are nonenforceable health goals.

Maximum residual disinfectant level (MRDL) means a level of a disinfectant added for water treatment that may not be exceeded at the consumer's tap without an unacceptable possibility of adverse health effects. For chlorine and chloramines, a PWS is in compliance with the MRDL when the running annual average of monthly averages of samples taken in the distribution system, computed quarterly, is less than or equal to the MRDL. For chlorine dioxide, a PWS is in compliance with the MRDL when daily samples are taken at the entrance to the distribution system and no two consecutive daily samples exceed the MRDL. MRDLs are enforceable in the same manner as maximum contaminant levels under Section 1412 of the Safe Drinking Water Act. There is convincing evidence that addition of a disinfectant is necessary for control of waterborne microbial contaminants. Notwithstanding the MRDLs listed in §141.65, operators may increase residual disinfectant levels of chlorine or chloramines (but not chlorine dioxide) in the distribution system to a level and for a time necessary to protect public health to address specific microbiological contamination problems caused by circumstances such as distribution line breaks, storm runoff events, source water contamination, or cross-connections.

Maximum residual disinfectant level goal (MRDLG) means the maximum level of a disinfectant added for water treatment at which no known or anticipated adverse effect on the health of persons would occur, and which allows an adequate margin of safety. MRDLGs are nonenforceable health goals and do not reflect the benefit of the addition of the chemical for control of waterborne microbial contaminants.

Maximum Total Trihalomethane Potential (MTP) means the maximum concentration of total trihalomethanes produced in a given water containing a disinfectant residual after 7 days at a temperature of 25 °C or above.

Medium-size water system, for the purpose of subpart I of this part only, means a water system that serves greater than 3,300 and less than or equal to 50,000 persons.

Membrane filtration is a pressure or vacuum driven separation process in which particulate matter larger than 1 micrometer is rejected by an engineered barrier, primarily through a size-exclusion mechanism, and which has a measurable removal efficiency of a target organism that can be verified through the application of a direct integrity test. This definition includes the common membrane technologies of microfiltration, ultrafiltration, nanofiltration, and reverse osmosis.

Near the first service connection means at one of the 20 percent of all service connections in the entire system that are nearest the water supply treatment facility, as measured by water transport time within the distribution system.

Non-community water system means a public water system that is not a community water system. A non-community water system is either a ‘‘transient non-community water system (TWS)’’ or a ‘‘non-transient non-community water system (NTNCWS).’’

Non-transient non-community water system or *NTNCWS* means a public water system that is not a community water system and that regularly serves at least 25 of the same persons over 6 months per year.

Optimal corrosion control treatment, for the purpose of subpart I of this part only, means the corrosion control treatment that minimizes the lead and copper concentrations at users' taps while insuring that the treatment does not cause the water system to violate any national primary drinking water regulations.

Performance evaluation sample means a reference sample provided to a laboratory for the purpose of demonstrating that the laboratory can successfully analyze the sample within limits of performance specified by the Agency. The true value of the concentration of the reference material is unknown to the laboratory at the time of the analysis.

Person means an individual; corporation; company; association; partnership; municipality; or State, Federal, or tribal agency.

Picocurie (pCi) means the quantity of radioactive material producing 2.22 nuclear transformations per minute.

Plant intake refers to the works or structures at the head of a conduit through which water is diverted from a source (e.g., river or lake) into the treatment plant.

Point of disinfectant application is the point where the disinfectant is applied and water downstream of that point is not subject to recontamination by surface water runoff.

Point-of-entry treatment device (POE) is a treatment device applied to the drinking water entering a house or building for the purpose of reducing contaminants in the drinking water distributed throughout the house or building.

Point-of-use treatment device (POU) is a treatment device applied to a single tap used for the purpose of reducing contaminants in drinking water at that one tap.

Presedimentation is a preliminary treatment process used to remove gravel, sand and other particulate material from the source water through settling before the water enters the primary clarification and filtration processes in a treatment plant.

Public water system means a system for the provision to the public of water for human consumption through pipes or, after August 5, 1998, other constructed conveyances, if such system has at least fifteen service connections or regularly serves an average of at least twenty-five individuals daily at least 60 days out of the year. Such term includes: any collection, treatment, storage, and distribution facilities under control of the operator of such system and used primarily in connection with such system; and any collection or pretreatment storage facilities not under such control which are used primarily in connection with such system. Such term does not include any ''special irrigation district.'' A public water system is either a ''community water system'' or a ''noncommunity water system.''

Rem means the unit of dose equivalent from ionizing radiation to the total body or any internal organ or organ system. A ''millirem (mrem)'' is Ú000 of a rem.

Repeat compliance period means any subsequent compliance period after the initial compliance period.

Residual disinfectant concentration (''C'' in CT calculations) means the concentration of disinfectant measured in mg/l in a representative sample of water.

Sanitary defect is a defect that could provide a pathway of entry for microbial contamination into the distribution system or that is indicative of a failure or imminent failure in a barrier that is already in place.

Sanitary survey means an onsite review of the water source, facilities, equipment, operation and maintenance of a public water system for the purpose of evaluating the adequacy of such source, facilities, equipment, operation and maintenance for producing and distributing safe drinking water.

Seasonal system is a non-community water system that is not operated as a public water system on a year-round basis and starts up and shuts down at the beginning and end of each operating season.

Sedimentation means a process for removal of solids before filtration by gravity or separation.

Service connection, as used in the definition of *public water system,* does not include a connection to a system that delivers water by a constructed conveyance other than a pipe if:

(1) The water is used exclusively for purposes other than residential uses (consisting of drinking, bathing, and cooking, or other similar uses);

(2) The State determines that alternative water to achieve the equivalent level of public health protection provided by the applicable national primary drinking water regulation is provided for residential or similar uses for drinking and cooking; or

(3) The State determines that the water provided for residential or similar uses for drinking, cooking, and bathing is centrally treated or treated at the point of entry by the provider, a pass-through entity, or the user to achieve the equivalent level of protection provided by the applicable national primary drinking water regulations.

Service line sample means a one-liter sample of water collected in accordance with §141.86(b)(3), that has been standing for at least 6 hours in a service line.

Single family structure, for the purpose of subpart I of this part only, means a building constructed as a single-family residence that is currently used as either a residence or a place of business.

Slow sand filtration means a process involving passage of raw water through a bed of sand at low velocity (generally less than 0.4 m/h) resulting in substantial particulate removal by physical and biological mechanisms.

Small water system, for the purpose of subpart I of this part only, means a water system that serves 3,300 persons or fewer.

Special irrigation district means an irrigation district in existence prior to May 18, 1994 that provides primarily agricultural service through a piped water system with only incidental residential or similar use where the system or the residential or similar users of the system comply with the exclusion provisions in section 1401(4)(B)(i)(II) or (III).

Standard sample means the aliquot of finished drinking water that is examined for the presence of coliform bacteria.

State means the agency of the State or Tribal government which has jurisdiction over public water systems. During any period when a State or Tribal government does not have primary enforcement responsibility pursuant to section 1413 of the Act, the term ''State'' means the Regional Administrator, U.S. Environmental Protection Agency.

Subpart H systems means public water systems using surface water or ground water under the direct influence of surface water as a source that are subject to the requirements of subpart H of this part.

Supplier of water means any person who owns or operates a public water system.

Surface water means all water which is open to the atmosphere and subject to surface runoff.

SUVA means Specific Ultraviolet Absorption at 254 nanometers (nm), an indicator of the humic content of water. It is a calculated parameter obtained by dividing a sample's ultraviolet absorption at a wavelength of 254 nm (UV_{254}) (in m^{-1}) by its concentration of dissolved organic carbon (DOC) (in mg/L).

System with a single service connection means a system which supplies drinking water to consumers via a single service line.

Too numerous to count means that the total number of bacterial colonies exceeds 200 on a 47-mm diameter membrane filter used for coliform detection.

Total Organic Carbon (TOC) means total organic carbon in mg/L measured using heat, oxygen, ultraviolet irradiation, chemical oxidants, or combinations of these oxidants that convert organic carbon to carbon dioxide, rounded to two significant figures.

Total trihalomethanes (TTHM) means the sum of the concentration in milligrams per liter of the trihalomethane compounds (trichloromethane [chloroform], dibromochloromethane, bromodichloromethane and tribromomethane [bromoform]), rounded to two significant figures.

Transient non-community water system or *TWS* means a non-community water system that does not regularly serve at least 25 of the same persons over six months per year.

Trihalomethane (THM) means one of the family of organic compounds, named as derivatives of methane, wherein three of the four hydrogen atoms in methane are each substituted by a halogen atom in the molecular structure.

Two-stage lime softening is a process in which chemical addition and hardness precipitation occur in each of two distinct unit clarification processes in series prior to filtration.

Uncovered finished water storage facility is a tank, reservoir, or other facility used to store water that will undergo no further treatment to reduce microbial pathogens except residual disinfection and is directly open to the atmosphere.

Virus means a virus of fecal origin which is infectious to humans by waterborne transmission.

Waterborne disease outbreak means the significant occurrence of acute infectious illness, epidemiologically associated with the ingestion of water from a public water system which is deficient in treatment, as determined by the appropriate local or State agency.

Wholesale system is a public water system that treats source water as necessary to produce finished water and then delivers some or all of that finished water to another public water system. Delivery may be through a direct connection or through the distribution system of one or more consecutive systems.

[40 FR 59570, Dec. 24, 1975]

EDITORIAL NOTE: For FEDERAL REGISTER citations affecting §141.2, see the List of CFR Sections Affected, which appears in the Finding Aids section of the printed volume and at *www.fdsys.gov*.

§141.3 Coverage.

This part shall apply to each public water system, unless the public water system meets all of the following conditions:

(a) Consists only of distribution and storage facilities (and does not have any collection and treatment facilities);

(b) Obtains all of its water from, but is not owned or operated by, a public water system to which such regulations apply:

(c) Does not sell water to any person; and

(d) Is not a carrier which conveys passengers in interstate commerce.

§141.4 Variances and exemptions.

(a) Variances or exemptions from certain provisions of these regulations may be granted pursuant to sections 1415 and 1416 of the Act and subpart K of part 142 of this chapter (for small system variances) by the entity with primary enforcement responsibility, except that variances or exemptions from the MCLs for total coliforms and *E. coli* and variances from any of the treatment technique requirements of subpart H of this part may not be granted.

(b) EPA has stayed the effective date of this section relating to the total coliform MCL of §141.63(a) for systems that demonstrate to the State that the violation of the total coliform MCL is due to a persistent growth of total coliforms in the distribution system rather than fecal or pathogenic contamination, a treatment lapse or deficiency, or a problem in the operation or maintenance of the distribution system. This is stayed until March 31, 2016, at which time the total coliform MCL is no longer effective.

NOTE TO PARAGRAPH (a): As provided in §142.304(a), small system variances are not available for rules addressing microbial contaminants, which would include subparts H, P, S, T, W, and Y of this part.

[78 FR 10346, Feb. 13, 2013]

§141.5 Siting requirements.

Before a person may enter into a financial commitment for or initiate construction of a new public water system or increase the capacity of an existing public water system, he shall notify the State and, to the extent practicable, avoid locating part or all of the new or expanded facility at a site which:

(a) Is subject to a significant risk from earthquakes, floods, fires or other disasters which could cause a breakdown of the public water system or a portion thereof; or

(b) Except for intake structures, is within the floodplain of a 100–year flood or is lower than any recorded high tide where appropriate records exist. The U.S. Environmental Protection Agency will not seek to override land use decisions affecting public water systems siting which are made at the State or local government levels.

§141.6 Effective dates.

(a) Except as provided in paragraphs (b) through (k) of this section, and in §141.80(a)(2), the regulations set forth in this part shall take effect on June 24, 1977.

(b) The regulations for total trihalomethanes set forth in §141.12(c) shall take effect 2 years after the date of promulgation of these regulations for community water systems serving 75,000 or more individuals, and 4 years after the date of promulgation for communities serving 10,000 to 74,999 individuals.

(c) The regulations set forth in §§141.11(d); 141.21(a), (c) and (i); 141.22(a) and (e); 141.23(a)(3) and (a)(4); 141.23(f); 141.24(e) and (f); 141.25(e); 141.27(a); 141.28(a) and (b); 141.31(a), (d) and (e); 141.32(b)(3); and 141.32(d) shall take effect immediately upon promulgation.

(d) The regulations set forth in §141.41 shall take effect 18 months from the date of promulgation. Suppliers must complete the first round of sampling and reporting within 12 months following the effective date.

(e) The regulations set forth in §141.42 shall take effect 18 months from the date of promulgation. All requirements in §141.42 must be completed within 12 months following the effective date.

(f) The regulations set forth in §141.11(c) and §141.23(g) are effective May 2, 1986. Section 141.23(g)(4) is effective October 2, 1987.

(g) The regulations contained in §141.6, paragraph (c) of the table in 141.12, and 141.62(b)(1) are effective July 1, 1991. The regulations contained in §§141.11(b), 141.23, 141.24, 142.57(b), 143.4(b)(12) and (b)(13), are effective July 30, 1992. The regulations contained in the revisions to §§141.32(e) (16), (25) through (27) and (46); 141.61(c)(16); and 141.62(b)(3) are effective January 1, 1993. The effective date of regulations contained in §141.61(c) (2), (3), and (4) is postponed.

(h) Regulations for the analytic methods listed at §141.23(k)(4) for measuring antimony, beryllium, cyanide, nickel, and thallium are effective August 17, 1992. Regulations for the analytic methods listed at §141.24(f)(16) for dichloromethane, 1,2,4-trichlorobenzene, and 1,1,2-trichloroethane are effective August 17, 1992. Regulations for the analytic methods listed at §141.24(h)(12) for measuring dalapon, dinoseb, diquat, endothall, endrin, glyphosate, oxamyl, picloram, simazine, benzo(a)pyrene, di(2-ethylhexyl)adipate, di(2-ethylhexyl)phthalate, hexachlorobenzene, hexachlorocyclopentadiene, and 2,3,7,8-TCDD are effective August 17, 1992. The revision to §141.12(a) promulgated on July 17, 1992 is effective on August 17, 1992.

(i) [Reserved]

(j) The arsenic maximum contaminant levels (MCL) listed in §141.62 is effective for the purpose of compliance on January 23, 2006. Requirements relating to arsenic set forth in §§141.23(i)(4), 141.23(k)(3) introductory text, 141.23(k)(3)(ii), 141.51(b), 141.62(b), 141.62(b)(16), 141.62(c), 141.62(d), and 142.62(b) revisions in Appendix A of subpart O for the consumer confidence rule, and Appendices A and B of subpart Q for the public notification rule are effective for the purpose of compliance on January 23, 2006. However, the consumer confidence rule reporting requirements relating to arsenic listed in §141.154(b) and (f) are effective for the purpose of compliance on February 22, 2002.

(k) Regulations set forth in §§141.23(i)(1), 141.23(i)(2), 141.24(f)(15), 141.24(f)(22), 141.24(h)(11), 141.24(h)(20), 142.16(e), 142.16(j), and 142.16(k) are effective for the purpose of compliance on January 22, 2004.

[44 FR 68641, Nov. 29, 1979, as amended at 45 FR 57342, Aug. 27, 1980; 47 FR 10998, Mar. 12, 1982; 51 FR 11410, Apr. 2, 1986; 56 FR 30274, July 1, 1991; 57 FR 22178, May 27, 1992; 57 FR 31838, July 17, 1992; 59 FR 34322, July 1, 1994; 61 FR 24368, May 14, 1996; 66 FR 7061, Jan. 22, 2001; 66 FR 28350, May 22, 2001]

Subpart B—Maximum Contaminant Levels

§141.11 Maximum contaminant levels for inorganic chemicals.

(a) The maximum contaminant level for arsenic applies only to community water systems. The analyses and determination of compliance with the 0.05 milligrams per liter maximum contaminant level for arsenic use the requirements of §141.23.

(b) The maximum contaminant level for arsenic is 0.05 milligrams per liter for community water systems until January 23, 2006.

(c) [Reserved]

(d) At the discretion of the State, nitrate levels not to exceed 20 mg/l may be allowed in a non-community water system if the supplier of water demonstrates to the satisfaction of the State that:

(1) Such water will not be available to children under 6 months of age; and

(2) The non-community water system is meeting the public notification requirements under §141.209, including continuous posting of the fact that nitrate levels exceed 10 mg/l and the potential health effects of exposure; and

(3) Local and State public health authorities will be notified annually of nitrate levels that exceed 10 mg/l; and

(4) No adverse health effects shall result.

[40 FR 59570, Dec. 24, 1975, as amended at 45 FR 57342, Aug. 27, 1980; 47 FR 10998, Mar. 12, 1982; 51 FR 11410, Apr. 2, 1986; 56 FR 3578, Jan. 30, 1991; 56 FR 26548, June 7, 1991; 56 FR 30274, July 1, 1991; 56 FR 32113, July 15, 1991; 60 FR 33932, June 29, 1995; 65 FR 26022, May 4, 2000; 66 FR 7061, Jan. 22, 2001]

§141.12 [Reserved]

§141.13 Maximum contaminant levels for turbidity.

The maximum contaminant levels for turbidity are applicable to both community water systems and non-community water systems using surface water sources in whole or in part. The maximum contaminant levels for turbidity in drinking water, measured at a representative entry point(s) to the distribution system, are:

(a) One turbidity unit (TU), as determined by a monthly average pursuant to §141.22, except that five or fewer turbidity units may be allowed if the supplier of water can demonstrate to the State that the higher turbidity does not do any of the following:

(1) Interfere with disinfection;

(2) Prevent maintenance of an effective disinfectant agent throughout the distribution system; or

(3) Interfere with microbiological determinations.

(b) Five turbidity units based on an average for two consecutive days pursuant to §141.22.

[40 FR 59570, Dec. 24, 1975]

EDITORIAL NOTE: At 54 FR 27527, June 29, 1989, §141.13 was amended by adding introductory text; however, the amendment could not be incorporated because introductory text already exists.

Subpart C—Monitoring and Analytical Requirements

§141.21 Coliform sampling.

(a) *Routine monitoring.* (1) Public water systems must collect total coliform samples at sites which are representative of water throughout the distribution system according to a written sample siting plan. These plans are subject to State review and revision.

(2) The monitoring frequency for total coliforms for community water systems is based on the population served by the system, as follows:

TOTAL COLIFORM MONITORING FREQUENCY FOR COMMUNITY WATER SYSTEMS

Population served	Minimum number of samples per month
25 to 1,000[1]	1
1,001 to 2,500	2
2,501 to 3,300	3
3,301 to 4,100	4
4,101 to 4,900	5
4,901 to 5,800	6
5,801 to 6,700	7
6,701 to 7,600	8
7,601 to 8,500	9
8,501 to 12,900	10
12,901 to 17,200	15
17,201 to 21,500	20
21,501 to 25,000	25
25,001 to 33,000	30
33,001 to 41,000	40
41,001 to 50,000	50
50,001 to 59,000	60
59,001 to 70,000	70
70,001 to 83,000	80
83,001 to 96,000	90
96,001 to 130,000	100
130,001 to 220,000	120
220,001 to 320,000	150
320,001 to 450,000	180
450,001 to 600,000	210
600,001 to 780,000	240
780,001 to 970,000	270
970,001 to 1,230,000	300
1,230,001 to 1,520,000	330
1,520,001 to 1,850,000	360
1,850,001 to 2,270,000	390
2,270,001 to 3,020,000	420
3,020,001 to 3,960,000	450
3,960,001 or more	480

[1] Includes public water systems which have at least 15 service connections, but serve fewer than 25 persons.

If a community water system serving 25 to 1,000 persons has no history of total coliform contamination in its current configuration and a sanitary survey conducted in the past five years shows that the system is supplied solely by a protected groundwater source and is free of sanitary defects, the State may reduce the monitoring frequency specified above, except that in no case may the State reduce the monitoring frequency to less than one sample per quarter. The State must approve the reduced monitoring frequency in writing.

(3) The monitoring frequency for total coliforms for non-community water systems is as follows:

(i) A non-community water system using only ground water (except ground water under the direct influence of surface water, as defined in §141.2) and serving 1,000 persons or fewer must monitor each calendar quarter that the system provides water to the public, except that the State may reduce this monitoring frequency, in writing, if a sanitary survey shows that the system is free of sanitary defects. Beginning June 29, 1994, the State cannot reduce the monitoring frequency for a non-community water system using only ground water (except ground water under the direct influence of surface water, as defined in §141.2) and serving 1,000 persons or fewer to less than once/year.

(ii) A non-community water system using only ground water (except ground water under the direct influence of surface water, as defined in §141.2) and serving more than 1,000 persons during any month must monitor at the same frequency as a like-sized community water system, as specified in paragraph (a)(2) of this section, except the State may reduce this monitoring frequency, in writing, for any month the system serves 1,000 persons or fewer. The State cannot reduce the monitoring frequency to less than once/year. For systems using ground water under the direct influence of surface water, paragraph (a)(3)(iv) of this section applies.

(iii) A non-community water system using surface water, in total or in part, must monitor at the same frequency as a like-sized community water system, as specified in paragraph (a)(2) of this section, regardless of the number of persons it serves.

(iv) A non-community water system using ground water under the direct influence of surface water, as defined in §141.2, must monitor at the same frequency as a like-sized community water system, as specified in paragraph (a)(2) of this section. The system must begin monitoring at this frequency beginning six months after the State determines that the ground water is under the direct influence of surface water.

(4) The public water system must collect samples at regular time intervals throughout the month, except that a system which uses only ground water (except ground water under the direct influence of surface water, as defined in §141.2), and serves 4,900 persons or fewer, may collect all required samples on a single day if they are taken from different sites.

(5) A public water system that uses surface water or ground water under the direct influence of surface water, as defined in §141.2, and does not practice filtration in compliance with Subpart H must collect at least one sample near the first service connection each day the turbidity level of the source water, measured as specified in §141.74(b)(2), exceeds 1 NTU. This sample must be analyzed for the presence of total coliforms. When one or more turbidity measurements in any day exceed 1 NTU, the system must collect this coliform sample within 24 hours of the first exceedance, unless the State determines that the system, for logistical reasons outside the system's control, cannot have the sample analyzed within 30 hours of collection. Sample results from this coliform monitoring must be included in determining compliance with the MCL for total coliforms in §141.63.

(6) Special purpose samples, such as those taken to determine whether disinfection practices are sufficient following pipe placement, replacement, or repair, shall not be used to determine compliance with the MCL for total coliforms in §141.63. Repeat samples taken pursuant to paragraph (b) of this section are not considered special purpose samples, and must be used to determine compliance with the MCL for total coliforms in §141.63.

(b) *Repeat monitoring.* (1) If a routine sample is total coliform-positive, the public water system must collect a set of repeat samples within 24 hours of being notified of the positive result. A system which collects more than one routine sample/month must collect no fewer than three repeat samples for each total coliform-positive sample found. A system which collects one routine sample/month or fewer must collect no fewer than four repeat samples for each total coliform-positive sample found. The State may extend the 24-hour limit on a case-by-case basis if the system has a logistical problem in collecting the repeat samples within 24 hours that is beyond its control. In the case of an extension, the State must specify how much time the system has to collect the repeat samples.

(2) The system must collect at least one repeat sample from the sampling tap where the original total coliform-positive sample was taken, and at least one repeat sample at a tap within five service connections upstream and at least one repeat sample at a tap within five service connections downstream of the original sampling site. If a total coliform-positive sample is at the end of the distribution system, or one away from the end of the distribution system, the State may waive the requirement to collect at least one repeat sample upstream or downstream of the original sampling site.

(3) The system must collect all repeat samples on the same day, except that the State may allow a system with a single service connection to collect the required set of repeat samples over a four-day period or to collect a larger volume repeat sample(s) in one or more sample containers of any size, as long as the total volume collected is at least 400 ml (300 ml for systems which collect more than one routine sample/month).

(4) If one or more repeat samples in the set is total coliform-positive, the public water system must collect an additional set of repeat samples in the manner specified in paragraphs (b) (1)–(3) of this section. The additional samples must be collected within 24 hours of being notified of the positive result, unless the State extends the limit as provided in paragraph (b)(1) of this section. The system must repeat this process until either total coliforms are not detected in one complete set of repeat samples or the system determines that the MCL for total coliforms in §141.63 has been exceeded and notifies the State.

(5) If a system collecting fewer than five routine samples/month has one or more total coliform-positive samples and the State does not invalidate the sample(s) under paragraph (c) of this section, it must collect at least five routine samples during the next month the system provides water to the public, except that the State may waive this requirement if the conditions of paragraph (b)(5) (i) or (ii) of this section are met. The State cannot waive the requirement for a system to collect repeat samples in paragraphs (b) (1)–(4) of this section.

(i) The State may waive the requirement to collect five routine samples the next month the system provides water to the public if the State, or an agent approved by the State, performs a site visit before the end of the next month the system provides water to the public. Although a sanitary survey need not be performed, the site visit must be sufficiently detailed to allow the State to determine whether additional monitoring and/or any corrective action is needed. The State cannot approve an employee of the system to perform this site visit, even if the employee is an agent approved by the State to perform sanitary surveys.

(ii) The State may waive the requirement to collect five routine samples the next month the system provides water to the public if the State has determined why the sample was total coliform-positive and establishes that the system has corrected the problem or will correct the problem before the end of the next month the system serves water to the public. In this case, the State must document this decision to waive the following month's additional monitoring requirement in writing, have it approved and signed by the supervisor of the State official who recommends such a decision, and make this document available to the EPA and public. The written documentation must describe the specific cause of the total coliform-positive sample and what action the system has taken and/or will take to correct this problem. The State cannot waive the requirement to collect five routine samples the next month the system provides water to the public solely on the grounds that all repeat samples are total coliform-negative. Under this paragraph, a system must still take at least one routine sample before the end of the next month it serves water to the public and use it to determine compliance with the MCL for total coliforms in §141.63, unless the State has determined that the system has corrected the contamination problem before the system took the set of repeat samples required in paragraphs (b) (1)–(4) of this section, and all repeat samples were total coliform-negative.

(6) After a system collects a routine sample and before it learns the results of the analysis of that sample, if it collects another routine sample(s) from within five adjacent service connections of the initial sample, and the initial sample, after analysis, is found to contain total coliforms, then the system may count the subsequent sample(s) as a repeat sample instead of as a routine sample.

(7) Results of all routine and repeat samples not invalidated by the State must be included in determining compliance with the MCL for total coliforms in §141.63.

(c) *Invalidation of total coliform samples.* A total coliform-positive sample invalidated under this paragraph (c) does not count towards meeting the minimum monitoring requirements of this section.

(1) The State may invalidate a total coliform-positive sample only if the conditions of paragraph (c)(1) (i), (ii), or (iii) of this section are met.

(i) The laboratory establishes that improper sample analysis caused the total coliform-positive result.

(ii) The State, on the basis of the results of repeat samples collected as required by paragraphs (b) (1) through (4) of this section, determines that the total coliform-positive sample resulted from a domestic or other non-distribution system plumbing problem. The State cannot invalidate a sample on the basis of repeat sample results unless all repeat sample(s) collected at the same tap as the original total coliform-positive sample are also total coliform-positive, and all repeat samples collected within five service connections of the original tap are total coliform-negative (e.g., a State cannot invalidate a total coliform-positive sample on the basis of repeat samples if all the repeat samples are total coliform-negative, or if the public water system has only one service connection).

(iii) The State has substantial grounds to believe that a total coliform-positive result is due to a circumstance or condition which does not reflect water quality in the distribution system. In this case, the system must still collect all repeat samples required under paragraphs (b) (1)–(4) of this section, and use them to determine compliance with the MCL for total coliforms in §141.63. To invalidate a total coliform-positive sample under this paragraph, the decision with the rationale for the decision must be documented in writing, and approved and signed by the supervisor of the State official who recommended the decision. The State must make this document available to EPA and the public. The written documentation must state the specific cause of the total coliform-positive sample, and what action the system has taken, or will take, to correct this problem. The State may not invalidate a total coliform-positive sample solely on the grounds that all repeat samples are total coliform-negative.

(2) A laboratory must invalidate a total coliform sample (unless total coliforms are detected) if the sample produces a turbid culture in the absence of gas production using an analytical method where gas formation is examined (e.g., the Multiple-Tube Fermentation Technique), produces a turbid culture in the absence of an acid reaction in the Presence-Absence (P-A) Coliform Test, or exhibits confluent growth or produces colonies too numerous to count with an analytical method using a membrane filter (e.g., Membrane Filter Technique). If a laboratory invalidates a sample because of such interference, the system must collect another sample from the same location as the original sample within 24 hours of being notified of the interference problem, and have it analyzed for the presence of total coliforms. The system must continue to re-sample within 24 hours and have the samples analyzed until it obtains a valid result. The State may waive the 24-hour time limit on a case-by-case basis.

(d) *Sanitary surveys.* (1)(i) Public water systems which do not collect five or more routine samples/month must undergo an initial sanitary survey by June 29, 1994, for community public water systems and June 29, 1999, for non-community water systems. Thereafter, systems must undergo another sanitary survey every five years, except that non-community water systems using only protected and disinfected ground water, as defined by the State, must undergo subsequent sanitary surveys at least every ten years after the initial sanitary survey. The State must review the results of each sanitary survey to determine whether the existing monitoring frequency is adequate and what additional measures, if any, the system needs to undertake to improve drinking water quality.

(ii) In conducting a sanitary survey of a system using ground water in a State having an EPA-approved wellhead protection program under section 1428 of the Safe Drinking Water Act, information on sources of contamination within the delineated wellhead protection area that was collected in the course of developing and implementing the program should be considered instead of collecting new information, if the information was collected since the last time the system was subject to a sanitary survey.

(2) Sanitary surveys must be performed by the State or an agent approved by the State. The system is responsible for ensuring the survey takes place.

(3) Sanitary surveys conducted by the State under the provisions of §142.16(o)(2) of this chapter may be used to meet the sanitary survey requirements of this section.

(e) *Fecal coliforms/Escherichia coli (E. coli) testing.* (1) If any routine or repeat sample is total coliform-positive, the system must analyze that total coliform-positive culture medium to determine if fecal coliforms are present, except that the system may test for *E. coli* in lieu of fecal coliforms. If fecal coliforms or *E. coli* are present, the system must notify the State by the end of the day when the system is notified of the test result, unless the system is notified of the result after the State office is closed, in which case the system must notify the State before the end of the next business day.

(2) The State has the discretion to allow a public water system, on a case-by-case basis, to forgo fecal coliform or *E. coli* testing on a total coliform-positive sample if that system assumes that the total coliform-positive sample is fecal coliform-positive or *E. coli*-positive. Accordingly, the system must notify the State as specified in paragraph (e)(1) of this section and the provisions of §141.63(b) apply.

(f) *Analytical methodology.* (1) The standard sample volume required for total coliform analysis, regardless of analytical method used, is 100 ml.

(2) Public water systems need only determine the presence or absence of total coliforms; a determination of total coliform density is not required.

(3) Public water systems must conduct total coliform analyses in accordance with one of the analytical methods in the following table or one of the alternative methods listed in appendix A to subpart C of this part.

Organism	Methodology[12]	Citation[1]
Total Coliforms[2]	Total Coliform Fermentation Technique[3,4,5]	9221A, B.
	Total Coliform Membrane Filter Technique[6]	9222A, B, C.
	Presence-Absence (P-A) Coliform Test[5,7]	9221D.
	ONPG-MUG Test[8]	9223.
	Colisure Test.[9]	
	E*Colite ® Test.[10]	
	m-ColiBlue24® Test.[11]	
	Readycult ® Coliforms 100 Presence/Absence Test.[13]	
	Membrane Filter Technique using Chromocult ® Coliform Agar.[14]	
	Colitag ® Test.[15]	

The procedures shall be done in accordance with the documents listed below. The incorporation by reference of the following documents listed in footnotes 1, 6, 8, 9, 10 , 11, 13, 14 and 15 was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. Copies of the documents may be obtained from the sources listed below. Information regarding obtaining these documents can be obtained from the Safe Drinking Water Hotline at 800–426–4791. Documents may be inspected at EPA's Drinking Water Docket, EPA West, 1301 Constitution Avenue, NW., EPA West, Room B102, Washington DC 20460 (Telephone: 202–566–2426); or at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202–741–6030, or go to: *http://www.archives.gov/federal l register/code l of l federal l regulations/ibr l locations.html.*

[1] *Standard Methods for the Examination of Water and Wastewater,* 18th edition (1992), 19th edition (1995), or 20th edition (1998). American Public Health Association, 1015 Fifteenth Street, NW., Washington, DC 20005. The cited methods published in any of these three editions may be used. In addition, the following online versions may also be used: 9221 A, B, D–99, 9222 A, B, C–97, and 9223 B–97. Standard Methods Online are available at *http://www.standardmethods.org.* The year in which each method was approved by the Standard Methods Committee is designated by the last two digits in the method number. The methods listed are the only Online versions that may be used.

[2] The time from sample collection to initiation of analysis may not exceed 30 hours. Systems are encouraged but not required to hold samples below 10 deg. C during transit.

[3] Lactose broth, as commercially available, may be used in lieu of lauryl tryptose broth, if the system conducts at least 25 parallel tests between this medium and lauryl tryptose broth using the water normally tested, and this comparison demonstrates that the false-positive rate and false-negative rate for total coliform, using lactose broth, is less than 10 percent.

[4] If inverted tubes are used to detect gas production, the media should cover these tubes at least one-half to two-thirds after the sample is added.

[5] No requirement exists to run the completed phase on 10 percent of all total coliform-positive confirmed tubes.

[6] MI agar also may be used. Preparation and use of MI agar is set forth in the article, "New medium for the simultaneous detection of total coliform and *Escherichia coli* in water" by Brenner, K.P., *et. al.,* 1993, Appl. Environ. Microbiol. 59:3534–3544. Also available from the Office of Water Resource Center (RC–4100T), 1200 Pennsylvania Avenue, NW., Washington, DC 20460, EPA/600/J–99/225. Verification of colonies is not required.

[7] Six-times formulation strength may be used if the medium is filter-sterilized rather than autoclaved.

[8] The ONPG-MUG Test is also known as the Autoanalysis Collect System.

[9] A description of the Colisure Test, Feb 28, 1994, may be obtained from IDEXX Laboratories, Inc., One IDEXX Drive, Westbrook, Maine 04092. The Colisure Test may be read after an incubation time of 24 hours.

[10] A description of the E*Colite® Test, "Presence/Absence for Coliforms and *E. Coli* in Water," Dec 21, 1997, is available from Charm Sciences, Inc., 36 Franklin Street, Malden, MA 02148–4120.

[11] A description of the m-ColiBlue24® Test, Aug 17, 1999, is available from the Hach Company, 100 Dayton Avenue, Ames, IA 50010.

[12] EPA strongly recommends that laboratories evaluate the false-positive and negative rates for the method(s) they use for monitoring total coliforms. EPA also encourages laboratories to establish false-positive and false-negative rates within their own laboratory and sample matrix (drinking water or source water) with the intent that if the method they choose has an unacceptable false-positive or negative rate, another method can be used. The Agency suggests that laboratories perform these studies on a minimum of 5% of all total coliform-positive samples, except for those methods where verification/confirmation is already required, e.g., the M-Endo and LES Endo Membrane Filter Tests, Standard Total Coliform Fermentation Technique, and Presence-Absence Coliform Test. Methods for establishing false-positive and negative-rates may be based on lactose fermentation, the rapid test for b-galactosidase and cytochrome oxidase, multi-test identification systems, or equivalent confirmation tests. False-positive and false-negative information is often available in published studies and/or from the manufacturer(s).

[13] The Readycult® Coliforms 100 Presence/Absence Test is described in the document, "Readycult® Coliforms 100 Presence/Absence Test for Detection and Identification of Coliform Bacteria and *Escherichla coli* in Finished Waters", November 2000, Version 1.0, available from EM Science (an affiliate of Merck KGgA, Darmstadt Germany), 480 S. Democrat Road, Gibbstown, NJ 08027–1297. Telephone number is (800) 222–0342, e-mail address is: *adellenbusch@emscience.com.*

[14] Membrane Filter Technique using Chromocult® Coliform Agar is described in the document, "Chromocult® Coliform Agar Presence/Absence Membrane Filter Test Method for Detection and Identification of Coliform Bacteria and *Escherichla coli* in Finished Waters", November 2000, Version 1.0, available from EM Science (an affiliate of Merck KGgA, Darmstadt Germany), 480 S. Democrat Road, Gibbstown, NJ 08027–1297. Telephone number is (800) 222–0342, e-mail address is: *adellenbusch@emscience.com.*

[15] Colitag® product for the determination of the presence/absence of total coliforms and *E. coli* is described in "Colitag® Product as a Test for Detection and Identification of Coliforms and *E. coli* Bacteria in Drinking Water and Source Water as Required in National Primary Drinking Water Regulations," August 2001, available from CPI International, Inc., 5580 Skylane Blvd., Santa Rosa, CA, 95403, telephone (800) 878–7654, Fax (707) 545–7901, Internet address *http://www.cpiinternational.com.*

(4) [Reserved]

(5) Public water systems must conduct fecal coliform analysis in accordance with the following procedure. When the MTF Technique or Presence-Absence (PA) Coliform Test is used to test for total coliforms, shake the lactose-positive presumptive tube or P-A vigorously and transfer the growth with a sterile 3-mm loop or sterile applicator stick into brilliant green lactose bile broth and EC medium to determine the presence of total and fecal coliforms, respectively. For EPA-approved analytical methods which use a membrane filter, transfer the total coliform-positive culture by one of the following methods: remove the membrane containing the total coliform colonies from the substrate with a sterile forceps and carefully curl and insert the membrane into a tube of EC medium (the laboratory may first remove a small portion of selected colonies for verification), swab the entire membrane filter surface with a sterile cotton swab and transfer the inoculum to EC medium (do not leave the cotton swab in the EC medium), or inoculate individual total coliform-positive colonies into EC Medium. Gently shake the inoculated tubes of EC medium to insure adequate mixing and incubate in a waterbath at 44.5 ±0.2 °C for 24 ±2 hours. Gas production of any amount in the inner fermentation tube of the EC medium indicates a positive fecal coliform test. The preparation of EC medium is described in Method 9221E (paragraph 1a) in Standard Methods for the Examination of Water and Wastewater, 18th edition (1992), 19th edition (1995), and 20th edition (1998); the cited method in any one of these three editions may be used. Public water systems need only determine the presence or absence of fecal coliforms; a determination of fecal coliform density is not required.

(6) Public water systems must conduct analysis of Escherichia coli in accordance with one of the following analytical methods or one of the alternative methods listed in appendix A to subpart C of this part.

(i) EC medium supplemented with 50 μg/mL of 4-methylumbelliferyl-beta-D-glucuronide (MUG) (final concentration), as described in Method 9222G in Standard Methods for the Examination of Water and Wastewater, 19th edition (1995) and 20th edition (1998). Either edition may be used. Alternatively, the 18th edition (1992) may be used if at least 10 mL of EC medium, as described in paragraph (f)(5) of this section, is supplemented with 50 μg/mL of MUG before autoclaving. The inner inverted fermentation tube may be omitted. If the 18th edition is used, apply the procedure in paragraph (f)(5) of this section for transferring a total coliform-positive culture to EC medium supplemented with MUG, incubate the tube at 44.5 ±0.2 °C for 24 ±2 hours, and then observe fluorescence with an ultraviolet light (366 nm) in the dark. If fluorescence is visible, E. coli are present.

(ii) Nutrient agar supplemented with 100 μg/mL of 4-methylumbelliferyl-beta-D-glucuronide (MUG) (final concentration), as described in Method 9222G in Standard Methods for the Examination of Water and Wastewater, 19th edition (1995) and 20th edition (1998). Either edition may be used for determining if a total coliform-positive sample, as determined by a membrane filter technique, contains E. coli. Alternatively, the 18th edition (1992) may be used if the membrane filter containing a total coliform-positive colony(ies) is transferred to nutrient agar, as described in Method 9221B (paragraph 3) of Standard Methods (18th edition), supplemented with 100 μg/mL of MUG. If the 18th edition is used, incubate the agar plate at 35 °C for 4 hours and then observe the colony(ies) under ultraviolet light (366 nm) in the dark for fluorescence. If fluorescence is visible, E. coli are present.

(iii) Minimal Medium ONPG-MUG (MMO-MUG) Test, as set forth in the article ''National Field Evaluation of a Defined Substrate Method for the Simultaneous Detection of Total Coliforms and *Escherichia coli* from Drinking Water: Comparison with Presence-Absence Techniques'' (Edberg et al.), Applied and Environmental Microbiology, Volume 55, pp. 1003–1008, April 1989. (Note: The Autoanalysis Colilert System is an MMO-MUG test). If the MMO-MUG test is total coliform-positive after a 24-hour incubation, test the medium for fluorescence with a 366-nm ultraviolet light (preferably with a 6-watt lamp) in the dark. If fluorescence is observed, the sample is *E. coli*-positive. If fluorescence is questionable (cannot be definitively read) after 24 hours incubation, incubate the culture for an additional four hours (but not to exceed 28 hours total), and again test the medium for fluorescence. The MMO-MUG Test with hepes buffer in lieu of phosphate buffer is the only approved formulation for the detection of *E. coli*.

(iv) *The Colisure Test.* A description of the Colisure Test may be obtained from the Millipore Corporation, Technical Services Department, 80 Ashby Road, Bedford, MA 01730.

(v) The membrane filter method with MI agar, a description of which is cited in footnote 6 to the table in paragraph (f)(3) of this section.

(vi) E*Colite® Test, a description of which is cited in footnote 10 to the table at paragraph (f)(3) of this section.

(vii) m-ColiBlue24® Test, a description of which is cited in footnote 11 to the table in paragraph (f)(3) of this section.

(viii) Readycult® Coliforms 100 Presence/Absence Test, a description of which is cited in footnote 13 to the table at paragraph (f)(3) of this section.

(ix) Membrane Filter Technique using Chromocult® Coliform Agar, a description of which is cited in footnote 14 to the table at paragraph (f)(3) of this section.

(x) Colitag®, a description of which is cited in footnote 15 to the table at paragraph (f)(3) of this section.

(7) As an option to paragraph (f)(6)(iii) of this section, a system with a total coliform-positive, MUG-negative, MMO-MUG test may further analyze the culture for the presence of *E. coli* by transferring a 0.1 ml, 28-hour MMO-MUG culture to EC Medium + MUG with a pipet. The formulation and incubation conditions of EC Medium +

MUG, and observation of the results are described in paragraph (f)(6)(i) of this section.

(8) The following materials are incorporated by reference in this section with the approval of the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. Copies of the analytical methods cited in Standard Methods for the Examination of Water and Wastewater (18th, 19th, and 20th editions) may be obtained from the American Public Health Association *et al.*; 1015 Fifteenth Street, NW., Washington, DC 20005–2605. Copies of the MMO-MUG Test, as set forth in the article "National Field Evaluation of a Defined Substrate Method for the Simultaneous Enumeration of Total Coliforms and Escherichia coli from Drinking Water: Comparison with the Standard Multiple Tube Fermentation Method" (Edberg *et al.*) may be obtained from the American Water Works Association Research Foundation, 6666 West Quincy Avenue, Denver, CO 80235. Copies of the MMO-MUG Test as set forth in the article "National Field Evaluation of a Defined Substrate Method for the Simultaneous Enumeration of Total Coliforms and *Escherichia coli* from Drinking Water: Comparison with the Standard Multiple Tube Fermentation Method" (Edberg *et al.*) may be obtained from the American Water Works Association Research Foundation, 6666 West Quincy Avenue, Denver, CO 80235. A description of the Colisure Test may be obtained from the Millipore Corp., Technical Services Department, 80 Ashby Road, Bedford, MA 01730. Copies may be inspected at EPA's Drinking Water Docket; 401 M St., SW.; Washington, DC 20460, or at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202–741–6030, or go to: *http://www.archives.gov/federal | register/code | of | federal | regulations/ibr | locations.html.*

(g) *Response to violation.* (1) A public water system which has exceeded the MCL for total coliforms in §141.63 must report the violation to the State no later than the end of the next business day after it learns of the violation, and notify the public in accordance with subpart Q.

(2) A public water system which has failed to comply with a coliform monitoring requirement, including the sanitary survey requirement, must report the monitoring violation to the State within ten days after the system discovers the violation, and notify the public in accordance with subpart Q.

(h) The provisions of paragraphs (a) and (d) of this section are applicable until March 31, 2016. The provisions of paragraphs (b), (c), (e), (f), and (g) of this section are applicable until all required repeat monitoring under paragraph (b) of this section and fecal coliform or *E. coli* testing under paragraph (e) of this section that was initiated by a total coliform-positivesample taken before April 1, 2016 is completed, as well as analytical method, reporting, recordkeeping, public notification, and consumer confidence report requirements associated with that monitoring and testing. Beginning April 1, 2016, the provisions of subpart Y of this part are applicable, with systems required to begin regular monitoring at the same frequency as the system-specific frequency required on March 31, 2016.

[54 FR 27562, June 29, 1989]

EDITORIAL NOTE: For FEDERAL REGISTER citations affecting §141.21, see the List of CFR Sections Affected, which appears in the Finding Aids section of the printed volume and at *www.fdsys.gov.*

§141.22 Turbidity sampling and analytical requirements.

The requirements in this section apply to unfiltered systems until December 30, 1991, unless the State has determined prior to that date, in writing pursuant to section 1412(b)(7)(iii), that filtration is required. The requirements in this section apply to filtered systems until June 29, 1993. The requirements in this section apply to unfiltered systems that the State has determined, in writing pursuant to section 1412(b)(7)(C)(iii), must install filtration, until June 29, 1993, or until filtration is installed, whichever is later.

(a) Samples shall be taken by suppliers of water for both community and non-community water systems at a representative entry point(s) to the water distribution system at least once per day, for the purposes of making turbidity measurements to determine compliance with §141.13. If the State determines that a reduced sampling frequency in a non-community will not pose a risk to public health, it can reduce the required sampling frequency. The option of reducing the turbidity frequency shall be permitted only in those public water systems that practice disinfection and which maintain an active residual disinfectant in the distribution system, and in those cases where the State has indicated in writing that no unreasonable risk to health existed under the circumstances of this option. Turbidity measurements shall be made as directed in §141.74(a)(1).

(b) If the result of a turbidity analysis indicates that the maximum allowable limit has been exceeded, the sampling and measurement shall be confirmed by resampling as soon as practicable and preferably within one hour. If the repeat sample confirms that the maximum allowable limit has been exceeded, the supplier of water shall report to the State within 48 hours. The repeat sample shall be the sample used for the purpose of calculating the monthly average. If the monthly average of the daily samples exceeds the maximum allowable limit, or if the average of two samples taken on consecutive days exceeds 5 TU, the supplier of water shall report to the State and notify the public as directed in §141.31 and subpart Q.

(c) Sampling for non-community water systems shall begin within two years after the effective date of this part.

(d) The requirements of this §141.22 shall apply only to public water systems which use water obtained in whole or in part from surface sources.

(e) The State has the authority to determine compliance or initiate enforcement action based upon analytical results or other information compiled by their sanctioned representatives and agencies.

[40 FR 59570, Dec. 24, 1975, as amended at 45 FR 57344, Aug. 27, 1980; 47 FR 8998, Mar. 3, 1982; 47 FR 10998, Mar. 12, 1982; 54 FR 27527, June 29, 1989; 59 FR 62466, Dec. 5, 1994; 65 FR 26022, May 4, 2000]

§141.23 Inorganic chemical sampling and analytical requirements.

Community water systems shall conduct monitoring to determine compliance with the maximum contaminant levels specified in §141.62 in accordance with this section. Non-transient, non-community water systems shall conduct monitoring to determine compliance with the maximum contaminant levels specified in §141.62 in accordance with this section. Transient, non-community water systems shall conduct monitoring to determine compliance with the nitrate and nitrite maximum contaminant levels in §§141.11 and 141.62 (as appropriate) in accordance with this section.

(a) Monitoring shall be conducted as follows:

(1) Groundwater systems shall take a minimum of one sample at every entry point to the distribution system which is representative of each well after treatment (hereafter called a sampling point) beginning in the initial compliance period. The system shall take each sample at the same sampling point unless conditions make another sampling point more representative of each source or treatment plant.

(2) Surface water systems shall take a minimum of one sample at every entry point to the distribution system after any application of treatment or in the distribution system at a point which is representative of each source after treatment (hereafter called a sampling point) beginning in the initial compliance period. The system shall take each sample at the same sampling point unless conditions make another sampling point more representative of each source or treatment plant.

NOTE: For purposes of this paragraph, surface water systems include systems with a combination of surface and ground sources.

(3) If a system draws water from more than one source and the sources are combined before distribution, the system must sample at an entry point to the distribution system during periods of normal operating conditions (*i.e.*, when water is representative of all sources being used).

(4) The State may reduce the total number of samples which must be analyzed by allowing the use of compositing. Composite samples from a maximum of five samples are allowed, provided that the detection limit of the method used for analysis is less than one-fifth of the MCL. Compositing of samples must be done in the laboratory.

(i) If the concentration in the composite sample is greater than or equal to one-fifth of the MCL of any inorganic chemical, then a follow-up sample must be taken within 14 days at each sampling point included in the composite. These samples must be analyzed for the contaminants which exceeded one-fifth of the MCL in the composite sample. Detection limits for each analytical method and MCLs for each inorganic contaminant are the following:

DETECTION LIMITS FOR INORGANIC CONTAMINANTS

Contaminant	MCL (mg/l)	Methodology	Detection limit (mg/l)
Antimony	0.006	Atomic Absorption; Furnace	0.003
		Atomic Absorption; Platform	0.0008 [5]
		ICP-Mass Spectrometry	0.0004
		Hydride-Atomic Absorption	0.001
Arsenic	0.010 [6]	Atomic Absorption; Furnace	0.001
		Atomic Absorption; Platform—Stabilized Temperature	0.0005 [7]
		Atomic Absorption; Gaseous Hydride	0.001
		ICP-Mass Spectrometry	0.0014 [8]
Asbestos	7 MFL [1]	Transmission Electron Microscopy	0.01 MFL
Barium	2	Atomic Absorption; furnace technique	0.002
		Atomic Absorption; direct aspiration	0.1
		Inductively Coupled Plasma	0.002 (0.001)
Beryllium	0.004	Atomic Absorption; Furnace	0.0002
		Atomic Absorption; Platform	0.00002 [5]
		Inductively Coupled Plasma [2]	0.0003
		ICP-Mass Spectrometry	0.0003
Cadmium	0.005	Atomic Absorption; furnace technique	0.0001
		Inductively Coupled Plasma	0.001
Chromium	0.1	Atomic Absorption; furnace technique	0.001
		Inductively Coupled Plasma	0.007 (0.001)
Cyanide	0.2	Distillation, Spectrophotometric [3]	0.02
		Distillation, Automated, Spectrophotometric [3]	0.005
		Distillation, Amenable, Spectrophotometric [4]	0.02
		Distillation, Selective Electrode [3] [4]	0.05
		UV, Distillation, Spectrophotometric [9]	0.0005
		Micro Distillation, Flow Injection, Spectrophotometric [3]	0.0006
		Ligand Exchange with Amperometry [4]	0.0005
Mercury	0.002	Manual Cold Vapor Technique	0.0002
		Automated Cold Vapor Technique	0.0002
Nickel	xl	Atomic Absorption; Furnace	0.001
		Atomic Absorption; Platform	0.0006 [5]
		Inductively Coupled Plasma [2]	0.005
		ICP-Mass Spectrometry	0.0005
Nitrate	10 (as N)	Manual Cadmium Reduction	0.01
		Automated Hydrazine Reduction	0.01
		Automated Cadmium Reduction	0.05
		Ion Selective Electrode	1
		Ion Chromatography	0.01
		Capillary Ion Electrophoresis	0.076
Nitrite	1 (as N)	Spectrophotometric	0.01
		Automated Cadmium Reduction	0.05
		Manual Cadmium Reduction	0.01
		Ion Chromatography	0.004
		Capillary Ion Electrophoresis	0.103
Selenium	0.05	Atomic Absorption; furnace	0.002
		Atomic Absorption; gaseous hydride	0.002
Thallium	0.002	Atomic Absorption; Furnace	0.001
		Atomic Absorption; Platform	0.0007 [5]
		ICP-Mass Spectrometry	0.0003

[1] MFL = million fibers per liter >10 μm.

[2] Using a 2X preconcentration step as noted in Method 200.7. Lower MDLs may be achieved when using a 4X preconcentration.

[3] Screening method for total cyanides.

[4] Measures "free" cyanides when distillation, digestion, or ligand exchange is omitted.

[5] Lower MDLs are reported using stabilized temperature graphite furnace atomic absorption.

[6] The value for arsenic is effective January 23, 2006. Unit then, the MCL is 0.05 mg/L.

[7] The MDL reported for EPA method 200.9 (Atomic Absorption; Platform—Stablized Temperature) was determined using a 2x concentration step during sample digestion. The MDL determined for samples analyzed using direct analyses (*i.e.*, no sample digestion) will be higher. Using multiple depositions, EPA 200.9 is capable of obtaining MDL of 0.0001 mg/L.

[8] Using selective ion monitoring, EPA Method 200.8 (ICP-MS) is capable of obtaining a MDL of 0.0001 mg/L.

[9] Measures total cyanides when UV-digestor is used, and "free" cyanides when UV-digestor is bypassed.

(ii) If the population served by the system is >3,300 persons, then compositing may only be permitted by the State at sampling points within a single system. In systems serving ≤3,300 persons, the State may permit compositing among different systems provided the 5-sample limit is maintained.

(iii) If duplicates of the original sample taken from each sampling point used in the composite sample are available, the system may use these instead of resampling. The duplicates must be analyzed and the results reported to the State within 14 days after completing analysis of the composite sample, provided the holding time of the sample is not exceeded.

(5) The frequency of monitoring for asbestos shall be in accordance with paragraph (b) of this section: the frequency of monitoring for antimony, arsenic, barium, beryllium, cadmium, chromium, cyanide, fluoride, mercury, nickel, selenium and thallium shall be in accordance with paragraph (c) of this section; the frequency of monitoring for nitrate shall be in accordance with paragraph (d) of this section; and the frequency of monitoring for nitrite shall be in accordance with paragraph (e) of this section.

(b) The frequency of monitoring conducted to determine compliance with the maximum contaminant level for asbestos specified in §141.62(b) shall be conducted as follows:

(1) Each community and non-transient, non-community water system is required to monitor for asbestos during the first three-year compliance period of each nine-year compliance cycle beginning in the compliance period starting January 1, 1993.

(2) If the system believes it is not vulnerable to either asbestos contamination in its source water or due to corrosion of asbestos-cement pipe, or both, it may apply to the State for a waiver of the monitoring requirement in paragraph (b)(1) of this section. If the State grants the waiver, the system is not required to monitor.

(3) The State may grant a waiver based on a consideration of the following factors:

(i) Potential asbestos contamination of the water source, and

(ii) The use of asbestos-cement pipe for finished water distribution and the corrosive nature of the water.

(4) A waiver remains in effect until the completion of the three-year compliance period. Systems not receiving a waiver must monitor in accordance with the provisions of paragraph (b)(1) of this section.

(5) A system vulnerable to asbestos contamination due solely to corrosion of asbestos-cement pipe shall take one sample at a tap served by asbestos-cement pipe and under conditions where asbestos contamination is most likely to occur.

(6) A system vulnerable to asbestos contamination due solely to source water shall monitor in accordance with the provision of paragraph (a) of this section.

(7) A system vulnerable to asbestos contamination due both to its source water supply and corrosion of asbestos-cement pipe shall take one sample at a tap served by asbestos-cement pipe and under conditions where asbestos contamination is most likely to occur.

(8) A system which exceeds the maximum contaminant levels as determined in §141.23(i) of this section shall monitor quarterly beginning in the next quarter after the violation occurred.

(9) The State may decrease the quarterly monitoring requirement to the frequency specified in paragraph (b)(1) of this section provided the State has determined that the system is reliably and consistently below the maximum contaminant level. In no case can a State make this determination unless a groundwater system takes a minimum of two quarterly samples and a surface (or combined surface/ground)

water system takes a minimum of four quarterly samples.

(10) If monitoring data collected after January 1, 1990 are generally consistent with the requirements of §141.23(b), then the State may allow systems to use that data to satisfy the monitoring requirement for the initial compliance period beginning January 1, 1993.

(c) The frequency of monitoring conducted to determine compliance with the maximum contaminant levels in §141.62 for antimony, arsenic, barium, beryllium, cadmium, chromium, cyanide, fluoride, mercury, nickel, selenium and thallium shall be as follows:

(1) Groundwater systems shall take one sample at each sampling point during each compliance period. Surface water systems (or combined surface/ground) shall take one sample annually at each sampling point.

(2) The system may apply to the State for a waiver from the monitoring frequencies specified in paragraph (c)(1) of this section. States may grant a public water system a waiver for monitoring of cyanide, provided that the State determines that the system is not vulnerable due to lack of any industrial source of cyanide.

(3) A condition of the waiver shall require that a system shall take a minimum of one sample while the waiver is effective. The term during which the waiver is effective shall not exceed one compliance cycle (*i.e.*, nine years).

(4) The State may grant a waiver provided surface water systems have monitored annually for at least three years and groundwater systems have conducted a minimum of three rounds of monitoring. (At least one sample shall have been taken since January 1, 1990). Both surface and groundwater systems shall demonstrate that all previous analytical results were less than the maximum contaminant level. Systems that use a new water source are not eligible for a waiver until three rounds of monitoring from the new source have been completed.

(5) In determining the appropriate reduced monitoring frequency, the State shall consider:

(i) Reported concentrations from all previous monitoring;

(ii) The degree of variation in reported concentrations; and

(iii) Other factors which may affect contaminant concentrations such as changes in groundwater pumping rates, changes in the system's configuration, changes in the system's operating procedures, or changes in stream flows or characteristics.

(6) A decision by the State to grant a waiver shall be made in writing and shall set forth the basis for the determination. The determination may be initiated by the State or upon an application by the public water system. The public water system shall specify the basis for its request. The State shall review and, where appropriate, revise its determination of the appropriate monitoring frequency when the system submits new monitoring data or when other data relevant to the system's appropriate monitoring frequency become available.

(7) Systems which exceed the maximum contaminant levels as calculated in §141.23(i) of this section shall monitor quarterly beginning in the next quarter after the violation occurred.

(8) The State may decrease the quarterly monitoring requirement to the frequencies specified in paragraphs (c)(1) and (c)(2) of this section provided it has determined that the system is reliably and consistently below the maximum contaminant level. In no case can a State make this determination unless a groundwater system takes a minimum of two quarterly samples and a surface water system takes a minimum of four quarterly samples.

(9) All new systems or systems that use a new source of water that begin operation after January 22, 2004 must demonstrate compliance with the MCL within a period of time specified by the State. The system must also comply with the initial sampling frequencies specified by the State to ensure a system can demonstrate compliance with the MCL. Routine and increased monitoring frequencies shall be conducted in accordance with the requirements in this section.

(d) All public water systems (community; non-transient, non-community;

and transient, non-community systems) shall monitor to determine compliance with the maximum contaminant level for nitrate in §141.62.

(1) Community and non-transient, non-community water systems served by groundwater systems shall monitor annually beginning January 1, 1993; systems served by surface water shall monitor quarterly beginning January 1, 1993.

(2) For community and non-transient, non-community water systems, the repeat monitoring frequency for groundwater systems shall be quarterly for at least one year following any one sample in which the concentration is ≥50 percent of the MCL. The State may allow a groundwater system to reduce the sampling frequency to annually after four consecutive quarterly samples are reliably and consistently less than the MCL.

(3) For community and non-transient, non-community water systems, the State may allow a surface water system to reduce the sampling frequency to annually if all analytical results from four consecutive quarters are <50 percent of the MCL. A surface water system shall return to quarterly monitoring if any one sample is ≥50 percent of the MCL.

(4) Each transient non-community water system shall monitor annually beginning January 1, 1993.

(5) After the initial round of quarterly sampling is completed, each community and non-transient non-community system which is monitoring annually shall take subsequent samples during the quarter(s) which previously resulted in the highest analytical result.

(e) All public water systems (community; non-transient, non-community; and transient, non-community systems) shall monitor to determine compliance with the maximum contaminant level for nitrite in §141.62(b).

(1) All public water systems shall take one sample at each sampling point in the compliance period beginning January 1, 1993 and ending December 31, 1995.

(2) After the initial sample, systems where an analytical result for nitrite is <50 percent of the MCL shall monitor at the frequency specified by the State.

(3) For community, non-transient, non-community, and transient non-community water systems, the repeat monitoring frequency for any water system shall be quarterly for at least one year following any one sample in which the concentration is ≥50 percent of the MCL. The State may allow a system to reduce the sampling frequency to annually after determining the system is reliably and consistently less than the MCL.

(4) Systems which are monitoring annually shall take each subsequent sample during the quarter(s) which previously resulted in the highest analytical result.

(f) Confirmation samples:

(1) Where the results of sampling for antimony, arsenic, asbestos, barium, beryllium, cadmium, chromium, cyanide, fluoride, mercury, nickel, selenium or thallium indicate an exceedance of the maximum contaminant level, the State may require that one additional sample be collected as soon as possible after the initial sample was taken (but not to exceed two weeks) at the same sampling point.

(2) Where nitrate or nitrite sampling results indicate an exceedance of the maximum contaminant level, the system shall take a confirmation sample within 24 hours of the system's receipt of notification of the analytical results of the first sample. Systems unable to comply with the 24-hour sampling requirement must immediately notify persons served by the public water system in accordance with §141.202 and meet other Tier 1 public notification requirements under subpart Q of this part. Systems exercising this option must take and analyze a confirmation sample within two weeks of notification of the analytical results of the first sample.

(3) If a State-required confirmation sample is taken for any contaminant, then the results of the initial and confirmation sample shall be averaged. The resulting average shall be used to determine the system's compliance in accordance with paragraph (i) of this section. States have the discretion to delete results of obvious sampling errors.

(g) The State may require more frequent monitoring than specified in paragraphs (b), (c), (d) and (e) of this section or may require confirmation samples for positive and negative results at its discretion.

(h) Systems may apply to the State to conduct more frequent monitoring than the minimum monitoring frequencies specified in this section.

(i) Compliance with §141.11 or §141.62(b) (as appropriate) shall be determined based on the analytical result(s) obtained at each sampling point.

(1) For systems which are conducting monitoring at a frequency greater than annual, compliance with the maximum contaminant levels for antimony, arsenic, asbestos, barium, beryllium, cadmium, chromium, cyanide, fluoride, mercury, nickel, selenium or thallium is determined by a running annual average at any sampling point. If the average at any sampling point is greater than the MCL, then the system is out of compliance. If any one sample would cause the annual average to be exceeded, then the system is out of compliance immediately. Any sample below the method detection limit shall be calculated at zero for the purpose of determining the annual average. If a system fails to collect the required number of samples, compliance (average concentration) will be based on the total number of samples collected.

(2) For systems which are monitoring annually, or less frequently, the system is out of compliance with the maximum contaminant levels for antimony, arsenic, asbestos, barium, beryllium, cadmium, chromium, cyanide, fluoride, mercury, nickel, selenium or thallium if the level of a contaminant is greater than the MCL. If confirmation samples are required by the State, the determination of compliance will be based on the annual average of the initial MCL exceedance and any State-required confirmation samples. If a system fails to collect the required number of samples, compliance (average concentration) will be based on the total number of samples collected.

(3) Compliance with the maximum contaminant levels for nitrate and nitrate is determined based on one sample if the levels of these contaminants are below the MCLs. If the levels of nitrate and/or nitrite exceed the MCLs in the initial sample, a confirmation sample is required in accordance with paragraph (f)(2) of this section, and compliance shall be determined based on the average of the initial and confirmation samples.

(4) Arsenic sampling results will be reported to the nearest 0.001 mg/L.

(j) Each public water system shall monitor at the time designated by the State during each compliance period.

(k) Inorganic analysis:

(1) Analysis for the following contaminants shall be conducted in accordance with the methods in the following table, or the alternative methods listed in appendix A to subpart C of this part, or their equivalent as determined by EPA. Criteria for analyzing arsenic, barium, beryllium, cadmium, calcium, chromium, copper, lead, nickel, selenium, sodium, and thallium with digestion or directly without digestion, and other analytical test procedures are contained in *Technical Notes on Drinking Water Methods,* EPA–600/R–94–173, October 1994. This document is available from the National Service Center for Environmental Publications (NSCEP), P.O. Box 42419, Cincinnati, OH 45242–0419 or *http://www.epa.gov/nscep/.*

Contaminant	Methodology [13]	EPA	ASTM [3]	SM [4] (18th, 19th ed.)	SM [4] (20th ed.)	SM Online [22]	Other
1. Alkalinity	Titrimetric		D1067–92, 02 B	2320 B	2320 B	2320 B–97	
	Electrometric titration					I–1030–85 [5].	
2. Antimony	Inductively Coupled Plasma (ICP)—Mass Spectrometry.	200.8 [2]					
	Hydride-Atomic Absorption.		D3697–92, 02.				
	Atomic Absorption; Platform.	200.9 [2]					
	Atomic Absorption; Furnace.			3113 B		3113 B–99	
3. Arsenic [14]	ICP-Mass Spectrometry	200.8 [2].					
	Atomic Absorption; Platform.	200.9 [2].					
	Atomic Absorption; Furnace.		D2972–97, 03 C	3113 B		3113 B–99.	
	Hydride Atomic Absorption.		D1972–97, 03 B	3114 B		3114 B–97.	
4. Asbestos	Transmission Electron Microscopy.	100.1 [9]					
	Transmission Electron Microscopy.	100.2 [10]					
5. Barium	Inductively Coupled Plasma.	200.7 [2]		3120 B	3120 B	3120 B–99.	
	ICP-Mass Spectrometry	200.8 [2]					
	Atomic Absorption; Direct.			3111D		3111 D–99.	
	Atomic Absorption; Furnace.			3113 B		3113 B–99.	
6. Beryllium	Inductively Coupled Plasma.	200.7 [2]		3120 B	3120 B	3120 B–99.	
	ICP-Mass Spectrometry	200.8 [2]					
	Atomic Absorption; Platform.	200.9 [2]					
	Atomic Absorption; Furnace.		D3645–97, 03 B	3113 B		3113 B–99.	
7. Cadmium	Inductively Coupled Plasma.	200.7 [2]					
	ICP-Mass Spectrometry	200.8 [2]					
	Atomic Absorption; Platform.	200.9 [2]					

	Atomic Absorption; Furnace.			3113 B		3113 B–99.	
8. Calcium	EDTA titrimetric		D511–93, 03 A	3500–Ca D	3500–Ca B	3500–Ca B–97.	
	Atomic Absorption; Direct Aspiration.		D511–93, 03 B	3111 B		3111 B–99.	
	Inductively Coupled Plasma.	200.7[2]		3120 B	3120 B	3120 B–99.	
	Ion Chromatography		D6919–03.				
9. Chromium	Inductively Coupled Plasma.	200.7[2]		3120 B	3120 B	3120 B–99.	
	ICP- MassSpectrometry	200.8[2]					
	Atomic Absorption; Platform.	200.9[2]					
	Atomic Absorption; Furnace.			3113 B		3113 B–99.	
10. Copper	Atomic Absorption; Furnace.		D1688–95, 02 C	3113 B		3113 B–99.	
	Atomic Absorption; Direct Aspiration.		D1688–95, 02 A	3111 B		3111 B–99.	
	Inductively Coupled Plasma.	200.7[2]		3120 B	3120 B	3120 B–99.	
	ICP- Massspectrometry	200.8[2]					
	Atomic Absorption; Platform.	200.9[2]					
11. Conductivity	Conductance		D1125–95 (Reapproved 1999) A.	2510 B	2510 B	2510 B–97.	
12. Cyanide	Manual Distillation followed by		D2036–98 A	4500–CN¥ C	4500–CN¥ C.		
	Spectrophotometric, Amenable.		D2036–98 B	4500–CN¥ G	4500–CN¥ G	4500–CN¥ G–99.	
	Spectro- photometric Manual.		D2036–98 A	4500–CN¥ E	4500–CN¥ E	4500–CN¥ E–99.	I–3300–85[5]
	Spectro- photometric Semi- automated.	335.4[6]					
	Selective Electrode			4500–CN¥ F	4500–CN¥ F	4500–CN¥ F–99.	
	UV, Distillation, Spectrophotometric.						Kelada–01[17]
	Micro Distillation, Flow Injection, Spectrophotometric.						QuikChem 10–204–00–1–X[18]
	Ligand Exchange and Amperometry[21].		D6888–04				OIA–1677, DW[20]

Contaminant	Methodology[13]	EPA	ASTM[3]	SM[4] (18th, 19th ed.)	SM[4] (20th ed.)	SM Online[22]	Other
13. Fluoride	Ion Chromatography	300.0[6], 300.1[19]	D4327–97, 03	4110 B	4110 B	4110 B–00.	
	Manual Distill.; Color. SPADNS.			4500–F¥ B, D.	4500–F¥ B, D.	4500–F¥ B, D–97.	
	Manual Electrode		D1179–93, 99 B	4500–F¥ C	4500–F¥ C	4500–F¥ C–97.	
	Automated Electrode						380–75WE[11]
	Automated Alizarin			4500–F¥ E	4500–F¥ E	4500–F¥ E–97.	129–71W[11]
	Capillary Ion Electrophoresis.						D6508, Rev. 2[23]
14. Lead	Atomic Absorption; Furnace.		D3559–96, 03 D	3113 B		3113 B–99.	
	ICP–Mass spectrometry	200.8[2]					
	Atomic Absorption; Platform.	200.9[2]					
	Differential Pulse Anodic Stripping Voltametry.						Method 1001[16]
15. Magnesium	Atomic Absorption		D511–93, 03 B	3111 B		3111 B–99.	
	ICP	200.7[2]		3120 B	3120 B	3120 B–99.	
	Complexation Titrimetric Methods.		D511–93, 03 A	3500–Mg E	3500–Mg B	3500–Mg B–97.	
	Ion Chromatography		D6919–03.				
16. Mercury	Manual, Cold Vapor	245.1[2]	D3223–97, 02	3112 B		3112 B–99.	
	Automated, Cold Vapor	245.2[1]					
	ICP–Mass Spectrometry	200.8[2]					
17. Nickel	Inductively Coupled Plasma.	200.7[2]		3120 B	3120 B	3120 B–99.	
	ICP–Mass Spectrometry	200.8[2]					
	Atomic Absorption; Platform.	200.9[2]					
	Atomic Absorption; Direct.			3111 B		3111 B–99.	
	Atomic Absorption; Furnace.			3113 B		3113 B–99.	
18. Nitrate	Ion Chromatography	300.0[6], 300.1[19]	D4327–97, 03	4110 B	4110 B	4110 B–00	B–1011[8]
	Automated Cadmium Reduction.	353.2[6]	D3867–90 A	4500–NO$_3$¥ F	4500–NO$_3$¥ F	4500–NO$_3$¥ F–00	
	Ion Selective Electrode			4500–NO$_3$¥ D.	4500–NO$_3$¥ D.	4500–NO$_3$¥ D–00.	601[7]

	Manual Cadmium Reduction.	......	D3867–90 B	4500–NO$_3^{¥}$ E	4500–NO$_3^{¥}$ E	4500–NO$_3^{¥}$ E–00	
	Capillary Ion Electrophoresis.	......	D6508–00.				
19. Nitrite	Ion Chromatography	300.0[6], 300.1[19].	D4327–97, 03	4110 B	4110 B	4110 B–00	B–1011[8]
	Automated Cadmium Reduction.	353.2[6]	D3867–90 A	4500–NO$_3^{¥}$ F	4500–NO$_3^{¥}$ F	4500–NO$_3^{¥}$ F–00	
	Manual Cadmium Reduction.	......	D3867–90 B	4500–NO$_3^{¥}$ E	4500–NO$_3^{¥}$ E	4500–NO$_3^{¥}$ E–00	
	Spectrophotometric	......	......	4500–NO$_2^{¥}$ B	4500–NO$_2^{¥}$ B	4500–NO$_2^{¥}$ B–00	
	Capillary Ion Electrophoresis.	......	D6508–00				
20. Ortho- phosphate	Colorimetric, Automated, Ascorbic Acid.	365.1[6]	......	4500–P F	4500–P F		
	Colorimetric, ascorbic acid, single reagent.	......	D515–88 A	4500–P E	4500–P E		
	Colorimetric Phosphomolybdate; Automated- segmented flow; Automated Discrete.	......	......	......	......	......	I–1601–85[5] I–2601–90[5] I–2598–85[5]
	Ion Chromatography	300.0[6], 300.1[19].	D4327–97, 03	4110 B	4110 B	4110 B–00	
	Capillary Ion Electrophoresis.	......	D6508–00				
21. pH	Electrometric	150.1, 150.2[1]	D1293–95, 99	4500–H$^+$ B	4500–H$^+$ B	4500–H$^+$ B–00.	
22. Selenium	Hydride- Atomic Absorption.	......	D3859–98, 03 A	3114 B	......	3114 B–97.	
	ICP–Mass Spectrometry	200.8[2]					
	Atomic Absorption; Platform.	200.9[2]					
	Atomic Absorption; Furnace.	......	D3859–98, 03 B	3113 B	......	3113 B–99.	
23. Silica	Colorimetric, Molybdate Blue.	......	......	......	......	......	I–1700–85[5]
	Automated- segmented Flow.	......	......	......	......	......	I–2700–85[5]
	Colorimetric	......	D859–94, 00.				
	Molybdosilicate	......	......	4500–Si D	4500–SiO$_2$ C	4500–SiO$_2$ C–97.	

Contaminant	Methodology[13]	EPA	ASTM[3]	SM[4] (18th, 19th ed.)	SM[4] (20th ed.)	SM Online[22]	Other
	Heteropoly blue			4500–Si E	4500–SiO_2 D	4500–SiO_2 D–97.	
	Automated for Molybdate-reactive Silica.			4500–Si F	4500–SiO_2 E	4500–SiO_2 E–97.	
	Inductively Coupled Plasma.	200.7[2]		3120 B	3120 B	3120 B–99.	
24. Sodium	Inductively Coupled Plasma.	200.7[2]					
	Atomic Absorption; Direct Aspiration.			3111 B		3111 B–99.	
	Ion Chromatography		D6919–03.				
25. Temperature	Thermometric			2550	2550	2550–00.	
26. Thallium	ICP–Mass Spectrometry	200.8[2]					
	Atomic Absorption; Platform.	200.9[2].					

The procedures shall be done in accordance with the documents listed below. The incorporation by reference of the following documents listed in footnotes 1–11, 16–20, and 22–23 was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. Copies of the documents may be obtained from the sources listed below. Information regarding obtaining these documents can be obtained from the Safe Drinking Water Hotline at 800–426–4791. Documents may be inspected at EPA's Drinking Water Docket, EPA West, 1301 Constitution Avenue, NW., Room 3334, Washington, DC 20460 (Telephone: 202–566–2426); or at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202–741–6030, or go to: *http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html.*

[1] "Methods for Chemical Analysis of Water and Wastes," EPA/600/4–79/020, March 1983. Available at NTIS, PB84–128677.

[2] "Methods for the Determination of Metals in Environmental Samples—Supplement I," EPA/600/R–94/111, May 1994. Available at NTIS, PB95–125472.

[3] *Annual Book of ASTM Standards*, ASTM International, 100 Barr Harbor Drive, West Conshohocken, PA 19428, *http://www.astm.org.;* Annual Book of ASTM Standards 1994, Vols. 11.01 and 11.02; Annual Book of ASTM Standards 1996, Vols. 11.01 and 11.02; Annual Book of ASTM Standards 1999, Vols. 11.01 and 11.02; Annual Book of ASTM Standards 2003, Vols. 11.01 and 11.02.

[4] *Standard Methods for the Examination of Water and Wastewater*, American Public Health Association, 800 I Street NW., Washington, DC 20001–3710; *Standard Methods for the Examination of Water and Wastewater*, 18th edition (1992); *Standard Methods for the Examination of Water and Wastewater*, 19th edition (1995); *Standard Methods for the Examination of Water and Wastewater*, 20th edition (1998).The following methods from this edition cannot be used: 3111 B, 3111 D, 3113 B, and 3114 B.

[5] U.S. Geological Survey, Federal Center, Box 25286, Denver, CO 80225–0425; Methods for Analysis by the U.S. Geological Survey National Water Quality Laboratory—Determination of Inorganic and Organic Constituents in Water and Fluvial Sediment, Open File Report 93–125, 1993; Techniques of Water Resources Investigation of the U.S. Geological Survey, Book 5, Chapter A–1, 3rd edition, 1989.

[6] "Methods for the Determination of Inorganic Substances in Environmental Samples," EPA/600/R–93/100, August 1993. Available as Technical Report PB94–120821 at National Technical Information Service (NTIS), 5301 Shawnee Road, Alexandria, VA 22312. *http://www.ntis.gov.*

[7] The procedure shall be done in accordance with the Technical Bulletin 601 "Standard Method of Test for Nitrate in Drinking Water," July 1994, PN 221890–001, Analytical Technology, Inc. Copies may be obtained from ATI Orion, 529 Main Street, Boston, MA 02129.

[8] Method B–1011. "Waters Test Method for Determination of Nitrite/Nitrate in Water Using Single Column Ion Chromatography," August, 1987. Copies may be obtained from Waters Corporation, Technical Services Division, 34 Maple Street, Milford, MA 01757, Telephone: 508/482–2963, Fax: 508/482–4056.

[9] Method 100.1, "Analytical Method For Determination of Asbestos Fibers in Water," EPA/600/4–83/043, EPA, September 1983. Available at NTIS, PB83–260471.

[10] Method 100.2, "Determination of Asbestos Structure Over 10-µm In Length In Drinking Water," EPA/600/R–94/134, June 1994. Available at NTIS, PB94–201902.

[11] Industrial Method No. 129–71W, "Fluoride in Water and Wastewater," December 1972, and Method No. 380–75WE, "Fluoride in Water and Wastewater," February 1976, Technicon Industrial Systems. Copies may be obtained from Bran & Luebbe, 1025 Busch Parkway, Buffalo Grove, IL 60089.

[12] Unfiltered, no digestion or hydrolysis.

[13] Because MDLs reported in EPA Methods 200.7 and 200.9 were determined using a 2x preconcentration step during sample digestion, MDLs determined when samples are analyzed by direct analysis (*i.e.*, no sample digestion) will be higher. For direct analysis of cadmium and arsenic by Method 200.7, and arsenic by Method 3120 B, sample preconcentration using pneumatic nebulization may be required to achieve lower detection limits. Preconcentration may also be required for direct analysis of antimony, lead, and thallium by Method 200.9; antimony and lead by Method 3113 B; and lead by Method D3559–90D, unless multiple in-furnace depositions are made.

[14] If ultrasonic nebulization is used in the determination of arsenic by Method 200.8, the arsenic must be in the pentavalent state to provide uniform signal response. For direct analysis of arsenic with Method 200.8 using ultrasonic nebulization, samples and standards must contain 1 mg/L of sodium hypochlorite.

[15] [Reserved]

[16] The description for Method Number 1001 for lead is available from Palintest, LTD, 21 Kenton Lands Road, P.O. Box 18395, Erlanger, KY 41018. Or from the Hach Company, P.O. Box 389, Loveland, CO 80539.

[17] The description for the Kelada- 01 Method, "Kelada Automated Test Methods for Total Cyanide, Acid Dissociable Cyanide, And Thiocyanate," Revision 1.2, August 2001, EPA # 821–B–01–009 for cyanide is available from the National Technical Information Service (NTIS), PB 2001–108275, 5285 Port Royal Road, Springfield, VA 22161. The toll free telephone number is 800–553–6847. **Note:** A 450–W UV lamp may be used in this method instead of the 550–W lamp specified if it provides performance within the quality control (QC) acceptance criteria of the method in a given instrument. Similarly, modified flow cell configurations and flow conditions may be used in the method, provided that the QC acceptance criteria are met.

[18] The description for the QuikChem Method 10–204–00–1–X, "Digestion and distillation of total cyanide in drinking and wastewaters using MICRO DIST and determination of cyanide by flow injection analysis," Revision 2.1, November 30, 2000, for cyanide is available from Lachat Instruments, 6645 W. Mill Rd., Milwaukee, WI 53218. Telephone: 414–358–4200.

[19] "Methods for the Determination of Organic and Inorganic Compounds in Drinking Water," Vol. 1, EPA 815–R–00–014, August 2000. Available as Technical Report PB2000–106981 at National Technical Information Service (NTIS), 5301 Shawnee Road, Alexandria, VA 22312. *http://www.ntis.gov.*

[20] Method OIA–1677, DW "Available Cyanide by Flow Injection, Ligand Exchange, and Amperometry," January 2004. EPA–821–R–04–001, Available from ALPKEM, A Division of OI Analytical, P.O. Box 9010, College Station, TX 77842–9010.

[21] Sulfide levels below those detected using lead acetate paper may produce positive method interferences. Test samples using a more sensitive sulfide method to determine if a sulfide interference is present, and treat samples accordingly.

[22] Standard Methods Online, American Public Health Association, 800 I Street NW., Washington, DC 20001, available at *http://www.standardmethods.org.* The year in which each method was approved by the Standard Methods Committee is designated by the last two digits in the method number. The methods listed are the only online versions that may be used.

(2) Sample collection for antimony, arsenic, asbestos, barium, beryllium, cadmium, chromium, cyanide, fluoride, mercury, nickel, nitrate, nitrite, selenium, and thallium under this section shall be conducted using the sample preservation, container, and maximum holding time procedures specified in the table below:

Contaminant	Preservative [1]	Container [2]	Time [3]
Antimony	HNO^3	P or G	6 months
Arsenic	Conc HNO_3 to pH <2.	P or G	6 months
Asbestos	4 °C	P or G	48 hours [4]
Barium	HNO^3	P or G	6 months
Beryllium	HNO^3	P or G	6 months
Cadmium	HNO^3	P or G	6 months
Chromium	HNO^3	P or G	6 months
Cyanide	4 °C, NaOH	P or G	14 days
Fluoride	None	P or G	1 month
Mercury	HNO^3	P or G	28 days
Nickel	HNO^3	P or G	6 months
Nitrate	4 °C	P or G	48 hours [5]
Nitrate-Nitrite[6]	H^2SO^4	P or G	28 days
Nitrite	4 °C	P or G	48 hours
Selenium	HNO^3	P or G	6 months
Thallium	HNO^3	P or G	6 months

[1] For cyanide determinations samples must be adjusted with sodium hydroxide to pH 12 at the time off collection. When chilling is indicated the sample must be shipped and stored at 4 °C or less. Acidification of nitrate or metals samples may be with a concentrated acid or a dilute (50% by volume) solution of the applicable concentrated acid. Acidification of samples for metals analysis is encouraged and allowed at the laboratory rather than at the time of sampling provided the shipping time and other instructions in Section 8.3 of EPA Methods 200.7 or 200.8 or 200.9 are followed.

[2] P = plastic, hard or soft; G=glass, hard or soft.

[3] In all cases samples should be analyzed as soon after collection as possible. Follow additional (if any) information on preservation, containers or holding times that is specified in method.

[4] Instructions for containers, preservation procedures and holding times as specified in Method 100.2 must be adhered to for all compliance analyses including those conducted with Method 100.1.

[5] If the sample is chlorinated, the holding time for an unacidified sample kept at 4 °C is extended to 14 days.

[6] Nitrate-Nitriterefers to a measurement of total nitrate.

(3) Analysis under this section shall only be conducted by laboratories that have been certified by EPA or the State. Laboratories may conduct sample analysis under provisional certification until January 1, 1996. To receive certification to conduct analyses for antimony, arsenic, asbestos, barium, beryllium, cadmium, chromium, cyanide, fluoride, mercury, nickel, nitrate, nitrite and selenium and thallium, the laboratory must:

(i) Analyze Performance Evaluation (PE) samples provided by EPA, the State or by a third party (with the approval of the State or EPA) at least once a year.

(ii) For each contaminant that has been included in the PE sample and for each method for which the laboratory desires certification achieve quantitative results on the analyses that are within the following acceptance limits:

Contaminant	Acceptance limit
Antimony	±30 at ≥0.006 mg/1
Arsenic	±30 at ≥0.003 mg/L
Asbestos	2 standard deviations based on study statistics.
Barium	±15% at ≥0.15 mg/1
Beryllium	±15% at ≥0.001 mg/1
Cadmium	±20% at ≥0.002 mg/1
Chromium	±15% at ≥0.01 mg/1
Cyanide	±25% at ≥0.1 mg/1
Fluoride	±10% at ≥1 to 10 mg/1
Mercury	±30% at ≥0.0005 mg/1
Nickel	±15% at ≥0.01 mg/1
Nitrate	±10% at ≥0.4 mg/1
Nitrite	±15% at ≥0.4 mg/1
Selenium	±20% at ≥0.01 mg/1
Thallium	±30% at ≥0.002 mg/1

(l) Analyses for the purpose of determining compliance with §141.11 shall be conducted using the requirements specified in paragraphs (l) through (q) of this section.

(1) Analyses for all community water systems utilizing surface water sources shall be completed by June 24, 1978. These analyses shall be repeated at yearly intervals.

(2) Analyses for all community water systems utilizing only ground water sources shall be completed by June 24, 1979. These analyses shall be repeated at three-year intervals.

(3) For non-community water systems, whether supplied by surface or ground sources, analyses for nitrate shall be completed by December 24, 1980. These analyses shall be repeated at intervals determined by the State.

(4) The State has the authority to determine compliance or initiate enforcement action based upon analytical results and other information compiled by their sanctioned representatives and agencies.

(m) If the result of an analysis made under paragraph (l) of this section indicates that the level of any contaminant listed in §141.11 exceeds the maximum contaminant level, the supplier of the water shall report to the State within 7 days and initiate three additional analyses at the same sampling point within one month.

(n) When the average of four analyses made pursuant to paragraph (m) of this section, rounded to the same number of significant figures as the maximum contaminant level for the substance in question, exceeds the maximum contaminant level, the supplier of water shall notify the State pursuant to §141.31 and give notice to the public pursuant to subpart Q. Monitoring after public notification shall be at a frequency designated by the State and shall continue until the maximum contaminant level has not been exceeded in two successive samples or until a monitoring schedule as a condition to a variance, exemption or enforcement action shall become effective.

(o) The provisions of paragraphs (m) and (n) of this section notwithstanding, compliance with the maximum contaminant level for nitrate shall be determined on the basis of the mean of two analyses. When a level exceeding the maximum contaminant level for nitrate is found, a second analysis shall be initiated within 24 hours, and if the mean of the two analyses exceeds the maximum contaminant level, the supplier of water shall report his findings to the State pursuant to §141.31 and shall notify the public pursuant to subpart Q.

(p) For the initial analyses required by paragraph (l) (1), (2) or (3) of this section, data for surface waters acquired within one year prior to the effective date and data for ground waters acquired within 3 years prior to the effective date of this part may be substituted at the discretion of the State.

(q) [Reserved]

[56 FR 3579, Jan. 30, 1991]

EDITORIAL NOTE: For FEDERAL REGISTER citations affecting §141.23, see the List of CFR Sections Affected, which appears in the Finding Aids section of the printed volume and at *www.fdsys.gov*.

§141.24 Organic chemicals, sampling and analytical requirements.

(a)–(d) [Reserved]

(e) Analyses for the contaminants in this section shall be conducted using the methods listed in the following table, or the alternative methods listed in appendix A to subpart C of this part, or their equivalent as determined by EPA.

(1) The following documents are incorporated by reference. This incorporation by reference was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. Copies may be inspected at EPA's Drinking Water Docket, 1301 Constitution Avenue, NW., EPA West, Room 3334, Washington, DC 20460 (Telephone: 202–566–2426); or at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202–741–6030, or go to: *http://www.archives.gov/federal* I *register/code* I *of* I *federal* I *regulations/ibr* I *locations.html*. Method 508A and 515.1 are in *Methods for the Determination of Organic Compounds in Drinking Water,* EPA/600/4–88–039, December 1988, Revised, July 1991. Methods 547, 550 and 550.1 are in *Methods for the Determination of Organic Compounds in Drinking Water—Supplement I,* EPA/600–4–90–020, July 1990. Methods 548.1, 549.1, 552.1 and 555 are in *Methods for the Determination of Organic Compounds in Drinking Water—Supplement II,* EPA/600/R–92–129, August 1992. Methods 502.2, 504.1, 505, 506, 507, 508, 508.1, 515.2, 524.2 525.2, 531.1, 551.1 and 552.2 are in *Methods for the Determination of Organic Compounds in Drinking Water—Supplement III,* EPA/600/R–95–131, August 1995. Method 1613 is titled "Tetra-through Octa-Chlorinated Dioxins and Furans by Isotope-Dilution HRGC/HRMS," EPA/821–B–94–005, October 1994. These documents are available from the National Technical Information Service, NTIS PB91–231480, PB91–146027, PB92–207703, PB95–261616 and PB95–104774, U.S. Department of Commerce, 5285 Port Royal Road, Springfield, Virginia 22161. The toll free number is: 800–553–6847. Method 6651 shall be followed in accordance with *Standard Methods for the Examination of Water and Wastewater,* 18th edition (1992), 19th edition (1995), or 20th edition (1998), American Public Health Association (APHA); any of these three editions may be used. Method 6610 shall be followed in accordance with *Standard Methods for the Examination of Water and Wastewater,* (18th Edition Supplement) (1994), or with the 19th edition (1995) or 20th edition (1998) of *Standard Methods for the Examination of Water and Wastewater;*

any of these publications may be used. The APHA documents are available from APHA, 1015 Fifteenth Street NW., Washington, DC 20005. Other required analytical test procedures germane to the conduct of these analyses are contained in *Technical Notes on Drinking Water Methods,* EPA/600/R–94–173, October 1994, NTIS PB95–104766. EPA Methods 515.3 and 549.2 are available from U.S. Environmental Protection Agency, National Exposure Research Laboratory (NERL)–Cincinnati, 26 West Martin Luther King Drive, Cincinnati, OH 45268. ASTM Method D 5317–93, 98 (Reapproved 2003) is available in the *Annual Book of ASTM Standards,* (1999), Vol. 11.02, ASTM International, 100 Barr Harbor Drive, West Conshohocken, PA 19428, any edition containing the cited version of the method may be used. EPA Method 515.4, ''Determination of Chlorinated Acids in Drinking Water by Liquid-Liquid Microextraction, Derivatization and Fast Gas Chromatography with Electron Capture Detection,'' Revision 1.0, April 2000, EPA/815/B–00/001 and EPA Method 552.3, ''Determination of Haloacetic Acids and Dalapon in Drinking Water by Liquid-Liquid Microextraction, Derivatization, and Gas Chromatography with Electron Capture Detection,'' Revision 1.0, July 2003, EPA 815–B–03–002, can be accessed and downloaded directly online at *http://www.epa.gov/safewater/methods/sourcalt.html.* Syngenta Method AG–625, ''Atrazine in Drinking Water by Immunoassay,'' February 2001, is available from Syngenta Crop Protection, Inc., 410 Swing Road, P.O. Box 18300, Greensboro, NC 27419. Telephone: 336–632–6000. Method 531.2 ''Measurement of N-methylcarbamoyloximes and N-methylcarbamates in Water by Direct Aqueous Injection HPLC with Postcolumn Derivatization,'' Revision 1.0, September 2001, EPA 815–B–01–002, can be accessed and downloaded directly online at *http://www.epa.gov/safewater/methods/sourcalt.html.*

Contaminant	EPA method	Standard methods	ASTM	Other
1. Benzene	502.2, 524.2.			
2. Carbon tetrachloride	502.2, 524.2, 551.1.			
3. Chlorobenzene	502.2, 524.2.			
4. 1,2-Dichlorobenzene	502.2, 524.2.			
5. 1,4-Dichlorobenzene	502.2, 524.2.			
6. 1,2-Dichloroethane	502.2, 524.2.			
7. cis-Dichloroethylene	502.2, 524.2.			
8. trans-Dichloroethylene	502.2, 524.2.			
9. Dichloromethane	502.2, 524.2.			
10. 1,2-Dichloropropane	502.2, 524.2.			
11. Ethylbenzene	502.2, 524.2.			
12. Styrene	502.2, 524.2.			
13. Tetrachloroethylene	502.2, 524.2, 551.1.			
14. 1,1,1-Trichloroethane	502.2, 524.2, 551.1.			
15. Trichloroethylene	502.2, 524.2, 551.1.			
16. Toluene	502.2, 524.2.			
17. 1,2,4-Trichlorobenzene	502.2, 524.2.			
18. 1,1-Dichloroethylene	502.2, 524.2.			
19. 1,1,2-Trichloroethane	502.2, 524.2, 551.1.			
20. Vinyl chloride	502.2, 524.2.			
21. Xylenes (total)	502.2, 524.2.			
22. 2,3,7,8-TCDD (dioxin)	1613.			
23. 2,4–D[4] (as acids, salts, and esters)	515.2, 555, 515.1, 515.3, 515.4		D5317–93, 98 (Reapproved 2003).	
24. 2,4,5–TP[4] (Silvex)	515.2, 555, 515.1, 515.3, 515.4		D5317–93, 98 (Reapproved 2003).	
25. Alachlor[2]	507, 525.2, 508.1, 505, 551.1.			
26. Atrazine[2]	507, 525.2, 508.1, 505, 551.1			Syngenta[5] AG–625
27. Benzo(a)pyrene	525.2, 550, 550.1.			
28. Carbofuran	531.1, 531.2	6610.		
29. Chlordane	508, 525.2, 508.1, 505.			
30. Dalapon	552.1 515.1, 552.2, 515.3, 515.4, 552.3.			

Contaminant	EPA method	Standard methods	ASTM	Other
31. Di(2-ethylhexyl)adipate	506, 525.2.			
32. Di(2-ethylhexyl)phthalate	506, 525.2.			
33. Dibromochloropropane (DBCP)	504.1, 551.1.			
34. Dinoseb [4]	515.2, 555, 515.1, 515.3, 515.4.			
35. Diquat	549.2.			
36. Endothall	548.1.			
37. Endrin	508, 525.2, 508.1, 505, 551.1.			
38. Ethylene dibromide (EDB)	504.1, 551.1.			
39. Glyphosate	547	6651.		
40. Heptachlor	508, 525.2, 508.1, 505, 551.1.			
41. Heptachlor Epoxide	508, 525.2, 508.1, 505, 551.1.			
42. Hexachlorobenzene	508, 525.2, 508.1, 505, 551.1.			
43. Hexachlorocyclopentadiene	508, 525.2, 508.1, 505, 551.1.			
44. Lindane	508, 525.2, 508.1, 505, 551.1.			
45. Methoxychlor	508, 525.2, 508.1, 505, 551.1.			
46. Oxamyl	531.1, 531.2	6610.		
47. PCBs [3] (as decachlorobiphenyl)	508A.			
48. PCBs [3] (as Aroclors)	508.1, 508, 525.2, 505.			
49. Pentachlorophenol	515.2, 525.2, 555, 515.1, 515.3, 515.4		D5317–93, 98 (Reapproved 2003).	
50. Picloram [4]	515.2, 555, 515.1, 515.3, 515.4		D5317–93, 98 (Reapproved 2003).	
51. Simazine [2]	507, 525.2, 508.1, 505, 551.1.			
52. Toxaphene	508, 508.1, 525.2, 505.			
53. Total Trihalomethanes	502.2, 524.2, 551.1.			

[1] [Reserved]

[2] Substitution of the detector specified in Method 505, 507, 508 or 508.1 for the purpose of achieving lower detection limits is allowed as follows. Either an electron capture or nitrogen phosphorous detector may be used provided all regulatory requirements and quality control criteria are met.

[3] PCBs are qualitatively identified as Aroclors and measured for compliance purposes as decachlorobiphenyl. Users of Method 505 may have more difficulty in achieving the required detection limits than users of Methods 508.1, 525.2 or 508.

[4] Accurate determination of the chlorinated esters requires hydrolysis of the sample as described in EPA Methods 515.1, 515.2, 515.3, 515.4 and 555 and ASTM Method D5317–93.

[5] This method may not be used for the analysis of atrazine in any system where chlorine dioxide is used for drinking water treatment. In samples from all other systems, any result for atrazine generated by Method AG–625 that is greater than one-half the maximum contaminant level (MCL) (in other words, greater than 0.0015mg/L or 1.5 µg/L) must be confirmed using another approved method for this contaminant and should use additional volume of the original sample collected for compliance monitoring. In instances where a result from Method AG–625 triggers such confirmatory testing, the confirmatory result is to be used to determine compliance.

(2) [Reserved]

(f) Beginning with the initial compliance period, analysis of the contaminants listed in §141.61(a) (1) through (21) for the purpose of determining compliance with the maximum contaminant level shall be conducted as follows:

(1) Groundwater systems shall take a minimum of one sample at every entry point to the distribution system which is representative of each well after treatment (hereafter called a sampling point). Each sample must be taken at the same sampling point unless conditions make another sampling point more representative of each source, treatment plant, or within the distribution system.

(2) Surface water systems (or combined surface/ground) shall take a minimum of one sample at points in the distribution system that are representative of each source or at each entry point to the distribution system after treatment (hereafter called a sampling point). Each sample must be taken at the same sampling point unless conditions make another sampling point more representative of each source, treatment plant, or within the distribution system.

(3) If the system draws water from more than one source and the sources are combined before distribution, the system must sample at an entry point to the distribution system during periods of normal operating conditions

(*i.e.*, when water representative of all sources is being used).

(4) Each community and non-transient non-community water system shall take four consecutive quarterly samples for each contaminant listed in §141.61(a) (2) through (21) during each compliance period, beginning in the initial compliance period.

(5) If the initial monitoring for contaminants listed in §141.61(a) (1) through (8) and the monitoring for the contaminants listed in §141.61(a) (9) through (21) as allowed in paragraph (f)(18) has been completed by December 31, 1992, and the system did not detect any contaminant listed in §141.61(a) (1) through (21), then each ground and surface water system shall take one sample annually beginning with the initial compliance period.

(6) After a minimum of three years of annual sampling, the State may allow groundwater systems with no previous detection of any contaiminant listed in §141.61(a) to take one sample during each compliance period.

(7) Each community and non-transient non-community ground water system which does not detect a contaminant listed in §141.61(a) (1) through (21) may apply to the State for a waiver from the requirements of paragraphs (f)(5) and (f)(6) of this section after completing the initial monitoring. (For purposes of this section, detection is defined as ≥0.0005 mg/l.) A waiver shall be effective for no more than six years (two compliance periods). States may also issue waivers to small systems for the initial round of monitoring for 1,2,4-trichlorobenzene.

(8) A State may grant a waiver after evaluating the following factor(s):

(i) Knowledge of previous use (including transport, storage, or disposal) of the contaminant within the watershed or zone of influence of the system. If a determination by the State reveals no previous use of the contaminant within the watershed or zone of influence, a waiver may be granted.

(ii) If previous use of the contaminant is unknown or it has been used previously, then the following factors shall be used to determine whether a waiver is granted.

(A) Previous analytical results.

(B) The proximity of the system to a potential point or non-point source of contamination. Point sources include spills and leaks of chemicals at or near a water treatment facility or at manufacturing, distribution, or storage facilities, or from hazardous and municipal waste landfills and other waste handling or treatment facilities.

(C) The environmental persistence and transport of the contaminants.

(D) The number of persons served by the public water system and the proximity of a smaller system to a larger system.

(E) How well the water source is protected against contamination, such as whether it is a surface or groundwater system. Groundwater systems must consider factors such as depth of the well, the type of soil, and wellhead protection. Surface water systems must consider watershed protection.

(9) As a condition of the waiver a groundwater system must take one sample at each sampling point during the time the waiver is effective (*i.e.*, one sample during two compliance periods or six years) and update its vulnerability assessment considering the factors listed in paragraph (f)(8) of this section. Based on this vulnerability assessment the State must reconfirm that the system is non-vulnerable. If the State does not make this reconfirmation within three years of the initial determination, then the waiver is invalidated and the system is required to sample annually as specified in paragraph (5) of this section.

(10) Each community and non-transient non-community surface water system which does not detect a contaminant listed in §141.61(a) (1) through (21) may apply to the State for a waiver from the requirements of (f)(5) of this section after completing the initial monitoring. Composite samples from a maximum of five sampling points are allowed, provided that the detection limit of the method used for analysis is less than one-fifth of the MCL. Systems meeting this criterion must be determined by the State to be non-vulnerable based on a vulnerability assessment during each compliance period. Each system receiving a waiver shall sample at the frequency specified by the State (if any).

(11) If a contaminant listed in §141.61(a) (2) through (21) is detected at a level exceeding 0.0005 mg/l in any sample, then:

(i) The system must monitor quarterly at each sampling point which resulted in a detection.

(ii) The State may decrease the quarterly monitoring requirement speci fied in paragraph (f)(11)(i) of this section provided it has determined that the system is reliably and consistently below the maximum contaminant level. In no case shall the State make this determination unless a groundwater system takes a minimum of two quarterly samples and a surface water system takes a minimum of four quarterly samples.

(iii) If the State determines that the system is reliably and consistently below the MCL, the State may allow the system to monitor annually. Systems which monitor annually must monitor during the quarter(s) which previously yielded the highest analytical result.

(iv) Systems which have three consecutive annual samples with no detection of a contaminant may apply to the State for a waiver as specified in paragraph (f)(7) of this section.

(v) Groundwater systems which have detected one or more of the following two-carbon organic compounds: trichloroethylene, tetrachloroethylene, 1,2-dichloroethane, 1,1,1-trichloroethane, cis-1,2-dichloroethylene,trans-1,2-dichloroethylene, or 1,1-dichloroethylene shall monitor quarterly for vinyl chloride. A vinyl chloride sample shall be taken at each sampling point at which one or more of the two-carbon organic compounds was detected. If the results of the first analysis do not detect vinyl chloride, the State may reduce the quarterly monitoring frequency of vinyl chloride monitoring to one sample during each compliance period. Surface water systems are required to monitor for vinyl chloride as specified by the State.

(12) Systems which violate the requirements of §141.61(a) (1) through (21), as determined by paragraph (f)(15) of this section, must monitor quarterly. After a minimum of four consecutive quarterly samples which show the system is in compliance as specified in paragraph (f)(15) of this section the system and the State determines that the system is reliably and consistently below the maximum contaminant level, the system may monitor at the frequency and times specified in paragraph (f)(11)(iii) of this section.

(13) The State may require a confirmation sample for positive or negative results. If a confirmation sample is required by the State, the result must be averaged with the first sampling result and the average is used for the compliance determination as specified by paragraph (f)(15). States have discretion to delete results of obvious sampling errors from this calculation.

(14) The State may reduce the total number of samples a system must analyze by allowing the use of compositing. Composite samples from a maximum of five sampling points are allowed, provided that the detection limit of the method used for analysis is less than one-fifth of the MCL. Compositing of samples must be done in the laboratory and analyzed within 14 days of sample collection.

(i) If the concentration in the composite sample is greater than or equal to 0.0005 mg/l for any contaminant listed in §141.61(a), then a follow-up sample must be taken within 14 days at each sampling point included in the composite, and be analyzed for that contaminant.

(ii) If duplicates of the original sample taken from each sampling point used in the composite sample are available, the system may use these instead of resampling. The duplicates must be analyzed and the results reported to the State within 14 days after completing analysis of the composite sample, provided the holding time of the sample is not exceeded.

(iii) If the population served by the system is >3,300 persons, then compositing may only be permitted by the State at sampling points within a single system. In systems serving ≤3,300 persons, the State may permit compositing among different systems provided the 5-sample limit is maintained.

(iv) Compositing samples prior to GC analysis.

(A) Add 5 ml or equal larger amounts of each sample (up to 5 samples are allowed) to a 25 ml glass syringe. Special precautions must be made to maintain zero headspace in the syringe.

(B) The samples must be cooled at 4 °C during this step to minimize volatilization losses.

(C) Mix well and draw out a 5-ml aliquot for analysis.

(D) Follow sample introduction, purging, and desorption steps described in the method.

(E) If less than five samples are used for compositing, a proportionately small syringe may be used.

(v) Compositing samples prior to GC/MS analysis.

(A) Inject 5-ml or equal larger amounts of each aqueous sample (up to 5 samples are allowed) into a 25-ml purging device using the sample introduction technique described in the method.

(B) The total volume of the sample in the purging device must be 25 ml.

(C) Purge and desorb as described in the method.

(15) Compliance with §141.61(a) (1) through (21) shall be determined based on the analytical results obtained at each sampling point. If one sampling point is in violation of an MCL, the system is in violation of the MCL.

(i) For systems monitoring more than once per year, compliance with the MCL is determined by a running annual average at each sampling point.

(ii) Systems monitoring annually or less frequently whose sample result exceeds the MCL must begin quarterly sampling. The system will not be considered in violation of the MCL until it has completed one year of quarterly sampling.

(iii) If any sample result will cause the running annual average to exceed the MCL at any sampling point, the system is out of compliance with the MCL immediately.

(iv) If a system fails to collect the required number of samples, compliance will be based on the total number of samples collected.

(v) If a sample result is less than the detection limit, zero will be used to calculate the annual average.

(16) [Reserved]

(17) Analysis under this section shall only be conducted by laboratories that are certified by EPA or the State according to the following conditions (laboratories may conduct sample analysis under provisional certification until January 1, 1996):

(i) To receive certification to conduct analyses for the contaminants in §141.61(a) (2) through (21) the laboratory must:

(A) Analyze Performance Evaluation (PE) samples provided by EPA, the State, or by a third party (with the approval of the State or EPA) at least once a year by each method for which the laboratory desires certification.

(B) Achieve the quantitative acceptance limits under paragraphs (f)(17)(i)(C) and (D) of this section for at least 80 percent of the regulated organic contaminants included in the PE sample.

(C) Achieve quantitative results on the analyses performed under paragraph (f)(17)(i)(A) of this section that are within ±20% of the actual amount of the substances in the Performance Evaluation sample when the actual amount is greater than or equal to 0.010 mg/l.

(D) Achieve quantitative results on the analyses performed under paragraph (f)(17)(i)(A) of this section that are within ±40 percent of the actual amount of the substances in the Performance Evaluation sample when the actual amount is less than 0.010 mg/l.

(E) Achieve a method detection limit of 0.0005 mg/l, according to the procedures in appendix B of part 136.

(ii) To receive certification to conduct analyses for vinyl chloride, the laboratory must:

(A) Analyze Performance Evaluation (PE) samples provided by EPA, the State, or by a third party (with the approval of the State or EPA) at least once a year by each method for which the laboratory desires certification.

(B) Achieve quantitative results on the analyses performed under paragraph (f)(17)(ii)(A) of this section that are within ±40 percent of the actual amount of vinyl chloride in the Performance Evaluation sample.

(C) Achieve a method detection limit of 0.0005 mg/l, according to the procedures in appendix B of part 136.

(D) Obtain certification for the contaminants listed in §141.61(a)(2) through (21).

(18) States may allow the use of monitoring data collected after January 1, 1988, required under section 1445 of the Act for purposes of initial monitoring compliance. If the data are generally consistent with the other requirements of this section, the State may use these data (*i.e.*, a single sample rather than four quarterly samples) to satisfy the initial monitoring requirement of paragraph (f)(4) of this section. Systems which use grandfathered samples and did not detect any contaminant listed §141.61(a)(2) through (21) shall begin monitoring annually in accordance with paragraph (f)(5) of this section beginning with the initial compliance period.

(19) States may increase required monitoring where necessary to detect variations within the system.

(20) Each certified laboratory must determine the method detection limit (MDL), as defined in appendix B to part 136, at which it is capable of detecting VOCs. The acceptable MDL is 0.0005 mg/l. This concentration is the detection concentration for purposes of this section.

(21) Each public water system shall monitor at the time designated by the State within each compliance period.

(22) All new systems or systems that use a new source of water that begin operation after January 22, 2004 must demonstrate compliance with the MCL within a period of time specified by the State. The system must also comply with the initial sampling frequencies specified by the State to ensure a system can demonstrate compliance with the MCL. Routine and increased monitoring frequencies shall be conducted in accordance with the requirements in this section.

(g) [Reserved]

(h) Analysis of the contaminants listed in §141.61(c) for the purposes of determining compliance with the maximum contaminant level shall be conducted as follows, with the exception that no monitoring is required for aldicarb, aldicarb sulfoxide or aldicarb sulfone:

(1) Groundwater systems shall take a minimum of one sample at every entry point to the distribution system which is representative of each well after treatment (hereafter called a sampling point). Each sample must be taken at the same sampling point unless conditions make another sampling point more representative of each source or treatment plant.

(2) Surface water systems shall take a minimum of one sample at points in the distribution system that are representative of each source or at each entry point to the distribution system after treatment (hereafter called a sampling point). Each sample must be taken at the same sampling point unless conditions make another sampling point more representative of each source or treatment plant.

NOTE: For purposes of this paragraph, surface water systems include systems with a combination of surface and ground sources.

(3) If the system draws water from more than one source and the sources are combined before distribution, the system must sample at an entry point to the distribution system during periods of normal operating conditions (*i.e.*, when water representative of all sources is being used).

(4) *Monitoring frequency:* (i) Each community and non-transient non-community water system shall take four consecutive quarterly samples for each contaminant listed in §141.61(c) during each compliance period beginning with the initial compliance period.

(ii) Systems serving more than 3,300 persons which do not detect a contaminant in the initial compliance period may reduce the sampling frequency to a minimum of two quarterly samples in one year during each repeat compliance period.

(iii) Systems serving less than or equal to 3,300 persons which do not detect a contaminant in the initial compliance period may reduce the sampling frequency to a minimum of one sample during each repeat compliance period.

(5) Each community and non-transient water system may apply to the State for a waiver from the requirement of paragraph (h)(4) of this section. A system must reapply for a waiver for each compliance period.

(6) A State may grant a waiver after evaluating the following factor(s): Knowledge of previous use (including transport, storage, or disposal) of the contaminant within the watershed or zone of influence of the system. If a determination by the State reveals no previous use of the contaminant within the watershed or zone of influence, a waiver may be granted. If previous use of the contaminant is unknown or it has been used previously, then the following factors shall be used to determine whether a waiver is granted.

(i) Previous analytical results.

(ii) The proximity of the system to a potential point or non-point source of contamination. Point sources include spills and leaks of chemicals at or near a water treatment facility or at manufacturing, distribution, or storage facilities, or from hazardous and municipal waste landfills and other waste handling or treatment facilities. Non-point sources include the use of pesticides to control insect and weed pests on agricultural areas, forest lands, home and gardens, and other land application uses.

(iii) The environmental persistence and transport of the pesticide or PCBs.

(iv) How well the water source is protected against contamination due to such factors as depth of the well and the type of soil and the integrity of the well casing.

(v) Elevated nitrate levels at the water supply source.

(vi) Use of PCBs in equipment used in the production, storage, or distribution of water (*i.e.*, PCBs used in pumps, transformers, etc.).

(7) If an organic contaminant listed in §141.61(c) is detected (as defined by paragraph (h)(18) of this section) in any sample, then:

(i) Each system must monitor quarterly at each sampling point which resulted in a detection.

(ii) The State may decrease the quarterly monitoring requirement specified in paragraph (h)(7)(i) of this section provided it has determined that the system is reliably and consistently below the maximum contaminant level. In no case shall the State make this determination unless a groundwater system takes a minimum of two quarterly samples and a surface water system takes a minimum of four quarterly samples.

(iii) After the State determines the system is reliably and consistently below the maximum contaminant level the State may allow the system to monitor annually. Systems which monitor annually must monitor during the quarter that previously yielded the highest analytical result.

(iv) Systems which have 3 consecutive annual samples with no detection of a contaminant may apply to the State for a waiver as specified in paragraph (h)(6) of this section.

(v) If the monitoring results in detection of one or more of certain related contaminants (heptachlor and heptachlor epoxide), then subsequent monitoring shall analyze for all related contaminants.

(8) Systems which violate the requirements of §141.61(c) as determined by paragraph (h)(11) of this section must monitor quarterly. After a minimum of four quarterly samples show the system is in compliance and the State determines the system is reliably and consistently below the MCL, as specified in paragraph (h)(11) of this section, the system shall monitor at the frequency specified in paragraph (h)(7)(iii) of this section.

(9) The State may require a confirmation sample for positive or negative results. If a confirmation sample is required by the State, the result must be averaged with the first sampling result and the average used for the compliance determination as specified by paragraph (h)(11) of this section. States have discretion to delete results of obvious sampling errors from this calculation.

(10) The State may reduce the total number of samples a system must analyze by allowing the use of compositing. Composite samples from a maximum of five sampling points are allowed, provided that the detection limit of the method used for analysis is less than one-fifth of the MCL. Compositing of samples must be done in the laboratory and analyzed within 14 days of sample collection.

(i) If the concentration in the composite sample detects one or more contaminants listed in §141.61(c), then a follow-upsample must be taken within

14 days at each sampling point included in the composite, and be analyzed for that contaminant.

(ii) If duplicates of the original sample taken from each sampling point used in the composite sample are available, the system may use these instead of resampling. The duplicates must be analyzed and the results reported to the State within 14 days after completion of the composite analysis or before the holding time for the initial sample is exceeded whichever is sooner.

(iii) If the population served by the system is >3,300 persons, then compositing may only be permitted by the State at sampling points within a single system. In systems serving ≤3,300 persons, the State may permit compositing among different systems provided the 5-sample limit is maintained.

(11) Compliance with §141.61(c) shall be determined based on the analytical results obtained at each sampling point. If one sampling point is in violation of an MCL, the system is in violation of the MCL.

(i) For systems monitoring more than once per year, compliance with the MCL is determined by a running annual average at each sampling point.

(ii) Systems monitoring annually or less frequently whose sample result exceeds the regulatory detection level as defined by paragraph (h)(18) of this section must begin quarterly sampling. The system will not be considered in violation of the MCL until it has completed one year of quarterly sampling.

(iii) If any sample result will cause the running annual average to exceed the MCL at any sampling point, the system is out of compliance with the MCL immediately.

(iv) If a system fails to collect the required number of samples, compliance will be based on the total number of samples collected.

(v) If a sample result is less than the detection limit, zero will be used to calculate the annual average.

(12) [Reserved]

(13) Analysis for PCBs shall be conducted as follows using the methods in paragraph (e) of this section:

(i) Each system which monitors for PCBs shall analyze each sample using either Method 508.1, 525.2, 508 or 505. Users of Method 505 may have more difficulty in achieving the required Aroclor detection limits than users of Methods 508.1, 525.2 or 508.

(ii) If PCBs (as one of seven Aroclors) are detected (as designated in this paragraph) in any sample analyzed using Method 505 or 508, the system shall reanalyze the sample using Method 508A to quantitate PCBs (as decachlorobiphenyl).

Aroclor	Detection limit (mg/l)
1016	0.00008
1221	0.02
1232	0.0005
1242	0.0003
1248	0.0001
1254	0.0001
1260	0.0002

(iii) Compliance with the PCB MCL shall be determined based upon the quantitative results of analyses using Method 508A.

(14) If monitoring data collected after January 1, 1990, are generally consistent with the requirements of §141.24(h), then the State may allow systems to use that data to satisfy the monitoring requirement for the initial compliance period beginning January 1, 1993.

(15) The State may increase the required monitoring frequency, where necessary, to detect variations within the system (e.g., fluctuations in concentration due to seasonal use, changes in water source).

(16) The State has the authority to determine compliance or initiate enforcement action based upon analytical results and other information compiled by their sanctioned representatives and agencies.

(17) Each public water system shall monitor at the time designated by the State within each compliance period.

(18) Detection as used in this paragraph shall be defined as greater than or equal to the following concentrations for each contaminant.

Contaminant	Detection limit (mg/l)
Alachlor	.0002
Aldicarb	.0005
Aldicarb sulfoxide	.0005
Aldicarb sulfone	.0008
Atrazine	.0001
Benzo[a]pyrene	.00002
Carbofuran	.0009

Contaminant	Detection limit (mg/l)
Chlordane	.0002
Dalapon	.001
1,2–Dibromo–3–chloropropane (DBCP)	.00002
Di (2-ethylhexyl)adipate	.0006
Di (2-ethylhexyl)phthalate	.0006
Dinoseb	.0002
Diquat	.0004
2,4-D	.0001
Endothall	.009
Endrin	.00001
Ethylene dibromide (EDB)	.00001
Glyphosate	.006
Heptachlor	.00004
Heptachlor epoxide	.00002
Hexachlorobenzene	.0001
Hexachlorocyclopentadiene	.0001
Lindane	.00002
Methoxychlor	.0001
Oxamyl	.002
Picloram	.0001
Polychlorinated biphenyls (PCBs) (as decachlorobiphenyl)	.0001
Pentachlorophenol	.00004
Simazine	.00007
Toxaphene	.001
2,3,7,8-TCDD(Dioxin)	.000000005
2,4,5-TP(Silvex)	.0002

(19) Anaylsis under this section shall only be conducted by laboratories that have received certification by EPA or the State and have met the following conditions:

(i) To receive certification to conduct analyses for the contaminants in §141.61(c) the laboratory must:

(A) Analyze Performance Evaluation (PE) samples provided by EPA, the State, or by a third party (with the approval of the State or EPA) at least once a year by each method for which the laboratory desires certification.

(B) For each contaminant that has been included in the PE sample achieve quantitative results on the analyses that are within the following acceptance limits:

Contaminant	Acceptance limits (percent)
DBCP	±40
EDB	±40.
Alachlor	±45.
Atrazine	±45.
Benzo[a]pyrene	2 standard deviations.
Carbofuran	±45.
Chlordane	±45.
Dalapon	2 standard deviations.
Di(2-ethylhexyl)adipate	2 standard deviations.
Di(2-ethylhexyl)phthalate	2 standard deviations.
Dinoseb	2 standard deviations.
Diquat	2 standard deviations.
Endothall	2 standard deviations.
Endrin	±30.
Glyphosate	2 standard deviations.
Heptachlor	±45.
Heptachlor epoxide	±45.
Hexachlorobenzene	2 standard deviations.
Hexachloro-cyclopentadiene	2 standard deviations.
Lindane	±45.
Methoxychlor	±45.
Oxamyl	2 standard deviations.
PCBs (as Decachlorobiphenyl)	0–200.
Picloram	2 standard deviations.
Simazine	2 standard deviations.
Toxaphene	±45.
Aldicarb	2 standard deviations.
Aldicarb sulfoxide	2 standard deviations.
Aldicarb sulfone	2 standard deviations.
Pentachlorophenol	±50.
2,3,7,8-TCDD(Dioxin)	2 standard deviations.
2,4-D	±50.
2,4,5-TP(Silvex)	±50.

(ii) [Reserved]

(20) All new systems or systems that use a new source of water that begin operation after January 22, 2004 must demonstrate compliance with the MCL within a period of time specified by the State. The system must also comply with the initial sampling frequencies specified by the State to ensure a system can demonstrate compliance with the MCL. Routine and increased monitoring frequencies shall be conducted in accordance with the requirements in this section.

(Approved by the Office of Management and Budget under control number 2040–0090)

[40 FR 59570, Dec. 24, 1975]

EDITORIAL NOTE: For FEDERAL REGISTER citations affecting §141.24, see the List of CFR Sections Affected, which appears in the Finding Aids section of the printed volume and at *www.fdsys.gov*.

§141.25 Analytical methods for radioactivity.

(a) Analysis for the following contaminants shall be conducted to determine compliance with §141.66 (radioactivity) in accordance with the methods in the following table, or the alternative methods listed in appendix A to subpart C this part, or their equivalent determined by EPA in accordance with §141.27.

Contaminant	Methodology	Reference (Method of Page Number)								
		EPA[1]	EPA[2]	EPA[3]	EPA[4]	SM[5]	ASTM[6]	USGS[7]	DOE[8]	Other
Naturally Occurring:										
Gross alpha[11] and beta	Evaporation	900.0	p. 1	00–01	p. 1	302, 7110 B, 7110 B–00.	....	R–1120–76.		
Gross alpha[11]	Coprecipitation	....	....	00–02	....	7110 C, 7110 C–00.				
Radium 226	Radon emanation	903.1	p. 16	Ra–04	p. 19	305, 7500–Ra C, 7500–Ra C–01.	D3454–97	R–1141–76	Ra- 04	NY[9],
	Radiochemical	903.0	p. 13	Ra- 03	....	304, 7500–Ra B, 7500–Ra B–01.	D2460–97	R–1140–76	....	GA[14]
Radium 228	Radiochemical	904.0	p. 24	Ra- 05	p. 19	7500–Ra D, 7500–Ra D–01.	....	R–1142–76	....	NY[9], NJ[10], GA[14]
Uranium[12]	Radiochemical	908.0	....	....	....	7500–U B, 7500–U B–00.				
	Fluorometric	908.1	....	....	....	7500–U C (17th Ed.).	D2907–97	R–1180–76, R–1181–76.	U–04.	
	ICP–MS	200.8[13]	....	....	....	3125	D5673–03.			
	Alpha Spectrometry.	....	....	00–07	p. 33	7500–U C (18th, 19th, or 20th Ed.), 7500–U C–00.	D3972–97, 02.	R–1182–76	U–02.	
	Laser Phosphorimetry.	....	....	....	....	....	D5174–97, 02.			
Man- Made:										
Radioactive Cesium	Radiochemical	901.0	p. 4	....	....	7500–Cs B, 7500–Cs B–00.	D2459–72	R–1111–76.		
	Gamma Ray Spectrometry.	901.1	....	....	p. 92	7120, 7120–97.	D3649–91, 98a.	R–1110–76	4.5.2.3.	
Radioactive Iodine	Radiochemical	902.0	p. 6	....	....	7500–I B, 7500–I B–00.				
			p. 9	....	....	7500–I C, 7500–I C–00.				

Contaminant	Methodology	Reference (Method of Page Number)								
		EPA[1]	EPA[2]	EPA[3]	EPA[4]	SM[5]	ASTM[6]	USGS[7]	DOE[8]	Other
						7500–I D, 7500–I D–00.	D3649–91, 98a.			
	Gamma Ray Spectrometry.	901.1	....	....	p. 92	7120, 7120–97.	D4785–93, 00a.	....	4.5.2.3.	
Radioactive Strontium 89, 90.	Radiochemical	905.0	p. 29	Sr–04	p. 65	303, 7500–Sr B, 7500–Sr B–01.	....	R–1160–76	Sr–01, Sr–02.	
Tritium	Liquid Scintillation	906.0	p. 34	H–02 ..	p. 87	306, 7500–^{3}H B, 7500–^{3}H B–00.	D4107–91, 98 (Reapproved 2002).	R–1171–76.		
Gamma Emitters	Gamma Ray Spectrometry.	901.1	....	....	p. 92	7120, 7120–97.	D3649–91, 98a.	R–1110–76	Ga–01–R.	
		902.0	....	....	....	7500–Cs B, 7500–Cs B–00.	D4785–93, 00a.			
		901.0	....	....	....	7500–I B, 7500–I B–00.				

The procedures shall be done in accordance with the documents listed below. The incorporation by reference of documents 1 through 10 and 13 through 14 was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. Copies of the documents may be obtained from the sources listed below. Information regarding obtaining these documents can be obtained from the Safe Drinking Water Hotline at 800–426–4791. Documents may be inspected at EPA's Drinking Water Docket, EPA West, 1301 Constitution Avenue, NW., Room 3334 , Washington, DC 20460 (Telephone: 202–566–2426); or at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202–741–6030, or go to: *http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html.*

[1] "Prescribed Procedures for the Measurement of Radioactivity in Drinking Water," EPA 600/4–80–032, August 1980. Available at the U.S. Department of Commerce, National Technical Information Service (NTIS), 5285 Port Royal Road, Springfield, VA 22161 (Telephone 800–553–6847), PB 80–224744.

[2] "Interim Radiochemical Methodology for Drinking Water," EPA 600/4–75–008 (revised), March 1976. Available NTIS, ibid.

[3] "Radiochemistry Procedures Manual," EPA 520/5–84–006, December 1987. Available NTIS, ibid.

[4] "Radiochemical Analytical Procedures for Analysis of Environmental Samples," March 1979. Available at NTIS, ibid. EMSL LV 053917.

[5] "Standard Methods for the Examination of Water and Wastewater," 13th, 17th, 18th, 19th or 20th edition, 1971, 1989, 1992, 1995, 1998. Available at American Public Health Association, 1015 Fifteenth Street, NW., Washington, DC 20005. Methods 302, 303, 304, 305 and 306 are only in the 13th edition. Methods 7110B, 7500–Ra B, 7500–Ra C, 7500–Ra D, 7500–U B, 7500–Cs B, 7500–I B, 7500–I C, 7500–I D, 7500–Sr B, and 7500–^{3}H B are in the 17th, 18th, 19th and 20th editions. Method 7110 C is in the 18th, 19th and 20th editions. Method 7500–U C Fluorometric Uranium is only in the 17th Edition, and 7500–U C Alpha spectrometry is only in the 18th, 19th and 20th editions. Method 7120 is only in the 19th and 20th editions. Method 3125 is only in the 20th edition. Methods 7110 B–00, 7110 C–00, 7500–Ra B–01, 7500–Ra C–01, 7500–Ra D–01, 7500–U B–00, 7500–U C–00, 7500–I B–00, 7500–I C–00, 7500–I D–00, 7120–97, 7500–Sr B–01, and 7500–^{3}H B–00 are available online at *http://www.standardmethods.org*. The year in which each method was approved by the Standard Methods Committee is designated by the last two digits in the method number. The methods listed are the only online versions that may be used.

[6] *Annual Book of ASTM Standards,* Vol. 11.01 and 11.02, 2002; ASTM International; any year containing the cited version of the method may be used. Copies of these two volumes and the 2003 version of D 5673–03 may be obtained from ASTM International, 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19428–2959.

[7] "Methods for Determination of Radioactive Substances in Water and Fluvial Sediments," Chapter A5 in Book 5 of *Techniques of Water-Resources Investigations of the United States Geological Survey,* 1977. Available at U.S. Geological Survey (USGS) Information Services, Box 25286, Federal Center, Denver, CO 80225–0425.

[8] "EML Procedures Manual," 28th (1997) or 27th (1990) Editions, Volumes 1 and 2; either edition may be used. In the 27th Edition Method Ra-04 is listed as Ra-05 and Method Ga-01–R is listed as Sect. 4.5.2.3. Available at the Environmental Measurements Laboratory, U.S. Department of Energy (DOE), 376 Hudson Street, New York, NY 10014–3621.

[9] "Determination of Ra–226 and Ra–228 (Ra–02)," January 1980, Revised June 1982. Available at Radiological Sciences Institute for Laboratories and Research, New York State Department of Health, Empire State Plaza, Albany, NY 12201.

[10] "Determination of Radium 228 in Drinking Water," August 1980. Available at State of New Jersey, Department of Environmental Protection, Division of Environmental Quality, Bureau of Radiation and Inorganic Analytical Services, 9 Ewing Street, Trenton, NJ 08625.

[11] Natural uranium and thorium-230 are approved as gross alpha calibration standards for gross alpha with co-precipitation and evaporation methods; americium-241 is approved with co-precipitation methods.

[12] If uranium (U) is determined by mass, a 0.67 pCi/µg of uranium conversion factor must be used. This conversion factor is based on the 1:1 activity ratio of U–234 and U–238 that is characteristic of naturally occurring uranium.

[13] "Determination of Trace Elements in Waters and Wastes by Inductively Coupled Plasma-Mass Spectrometry," Revision 5.4, which is published in "Methods for the Determination of Metals in Environmental Samples—Supplement I,'" EPA 600–R–94–111, May 1994. Available at NTIS, PB 95–125472.

[14] "The Determination of Radium-226 and Radium-228 in Drinking Water by Gamma-ray Spectrometry Using HPGE or Ge(Li) Detectors," Revision 1.2, December 2004. Available from the Environmental Resources Center, Georgia Institute of Technology, 620 Cherry Street, Atlanta, GA 30332–0335, USA, Telephone: 404–894–3776. This method may be used to analyze for radium-226 and radium-228 in samples collected after January 1, 2005 to satisfy the radium-226 and radium-228 monitoring requirements specified at 40 CFR 141.26.

(b) When the identification and measurement of radionuclides other than those listed in paragraph (a) of this section is required, the following references are to be used, except in cases where alternative methods have been approved in accordance with §141.27.

(1) *Procedures for Radiochemical Analysis of Nuclear Reactor Aqueous Solutions,* H. L. Krieger and S. Gold, EPA-R4–73–014. USEPA, Cincinnati, Ohio, May 1973.

(2) *HASL Procedure Manual,* Edited by John H. Harley. HASL 300, ERDA Health and Safety Laboratory, New York, NY., 1973.

(c) For the purpose of monitoring radioactivity concentrations in drinking water, the required sensitivity of the radioanalysis is defined in terms of a detection limit. The detection limit shall be that concentration which can be counted with a precision of plus or minus 100 percent at the 95 percent confidence level (1.96s where s is the standard deviation of the net counting rate of the sample).

(1) To determine compliance with §141.66(b), (c), and (e) the detection limit shall not exceed the concentrations in Table B to this paragraph.

TABLE B—DETECTION LIMITS FOR GROSS ALPHA PARTICLE ACTIVITY, RADIUM 226, RADIUM 228, AND URANIUM

Contaminant	Detection limit
Gross alpha particle activity	3 pCi/L.
Radium 226	1 pCi/L.
Radium 228	1 pCi/L.
Uranium	1 µg/L

(2) To determine compliance with §141.66(d) the detection limits shall not exceed the concentrations listed in Table C to this paragraph.

TABLE C—DETECTION LIMITS FOR MAN-MADE BETA PARTICLE AND PHOTON EMITTERS

Radionuclide	Detection limit
Tritium	1,000 pCi/1.
Strontium–89	10 pCi/1.
Strontium–90	2 pCi/1.
Iodine–131	1 pCi/1.
Cesium–134	10 pCi/1.
Gross beta	4 pCi/1.
Other radionuclides	Ú$_0$ of the applicable limit.

(d) To judge compliance with the maximum contaminant levels listed in §141.66, averages of data shall be used and shall be rounded to the same number of significant figures as the maximum contaminant level for the substance in question.

(e) The State has the authority to determine compliance or initiate enforcement action based upon analytical results or other information compiled by their sanctioned representatives and agencies.

[41 FR 28404, July 9, 1976, as amended at 45 FR 57345, Aug. 27, 1980; 62 FR 10173, Mar. 5, 1997; 65 FR 76745, Dec. 7, 2000; 67 FR 65250, Oct. 23, 2002; 69 FR 38855, June 29, 2004; 69 FR 52180, Aug. 25, 2004; 72 FR 11245, Mar. 12, 2007; 74 FR 30958, June 29, 2009]

§141.26 Monitoring frequency and compliance requirements for radionuclides in community water systems.

(a) *Monitoring and compliance requirements for gross alpha particle activity, radium-226, radium-228, and uranium.* (1) Community water systems (CWSs) must conduct initial monitoring to determine compliance with §141.66(b), (c), and (e) by December 31, 2007. For the purposes of monitoring for gross alpha particle activity, radium-226, radium-228, uranium, and beta particle and photon radioactivity in drinking water, ''detection limit'' is defined as in §141.25(c).

(i) *Applicability and sampling location for existing community water systems or sources.* All existing CWSs using ground water, surface water or systems using both ground and surface water (for the purpose of this section hereafter referred to as systems) must sample at every entry point to the distribution system that is representative of all sources being used (hereafter called a sampling point) under normal operating conditions. The system must take each sample at the same sampling point unless conditions make another sampling point more representative of each source or the State has designated a distribution system location, in accordance with paragraph (a)(2)(ii)(C) of this section.

(ii) *Applicability and sampling location for new community water systems or sources.* All new CWSs or CWSs that use a new source of water must begin to conduct initial monitoring for the new source within the first quarter after initiating use of the source. CWSs must conduct more frequent monitoring when ordered by the State in the event of possible contamination or when changes in the distribution system or treatment processes occur which may increase the concentration of radioactivity in finished water.

(2) *Initial monitoring:* Systems must conduct initial monitoring for gross alpha particle activity, radium-226, radium-228, and uranium as follows:

(i) Systems without acceptable historical data, as defined below, must collect four consecutive quarterly samples at all sampling points before December 31, 2007.

(ii) *Grandfathering of data:* States may allow historical monitoring data collected at a sampling point to satisfy the initial monitoring requirements for that sampling point, for the following situations.

(A) To satisfy initial monitoring requirements, a community water system having only one entry point to the distribution system may use the monitoring data from the last compliance monitoring period that began between June 2000 and December 8, 2003.

(B) To satisfy initial monitoring requirements, a community water system with multiple entry points and having appropriate historical monitoring data for each entry point to the distribution system may use the monitoring data from the last compliance monitoring period that began between June 2000 and December 8, 2003.

(C) To satisfy initial monitoring requirements, a community water system with appropriate historical data for a representative point in the distribution system may use the monitoring data from the last compliance monitoring period that began between June 2000 and December 8, 2003, provided that the State finds that the historical data satisfactorily demonstrate that each entry point to the distribution system is expected to be in compliance based upon the historical data and reasonable assumptions about the variability of contaminant levels between entry points. The State must make a written finding indicating how the data conforms to the these requirements.

(iii) For gross alpha particle activity, uranium, radium-226, and radium-228 monitoring, the State may waive the final two quarters of initial monitoring for a sampling point if the results of the samples from the previous two quarters are below the detection limit.

(iv) If the average of the initial monitoring results for a sampling point is above the MCL, the system must collect and analyze quarterly samples at that sampling point until the system has results from four consecutive quarters that are at or below the MCL, unless the system enters into another schedule as part of a formal compliance agreement with the State.

(3) *Reduced monitoring:* States may allow community water systems to reduce the future frequency of monitoring from once every three years to once every six or nine years at each sampling point, based on the following criteria.

(i) If the average of the initial monitoring results for each contaminant (*i.e.*, gross alpha particle activity, uranium, radium-226, or radium-228) is below the detection limit specified in Table B, in §141.25(c)(1), the system must collect and analyze for that contaminant using at least one sample at that sampling point every nine years.

(ii) For gross alpha particle activity and uranium, if the average of the initial monitoring results for each contaminant is at or above the detection limit but at or below ½ the MCL, the system must collect and analyze for that contaminant using at least one sample at that sampling point every six years. For combined radium-226 and radium-228, the analytical results must be combined. If the average of the combined initial monitoring results for radium-226 and radium-228 is at or above the detection limit but at or below ½ the MCL, the system must collect and analyze for that contaminant using at least one sample at that sampling point every six years.

(iii) For gross alpha particle activity and uranium, if the average of the initial monitoring results for each contaminant is above ½ the MCL but at or below the MCL, the system must collect and analyze at least one sample at that sampling point every three years. For combined radium-226 and radium-

228, the analytical results must be combined. If the average of the combined initial monitoring results for radium-226 and radium-228 is above ½ the MCL but at or below the MCL, the system must collect and analyze at least one sample at that sampling point every three years.

(iv) Systems must use the samples collected during the reduced monitoring period to determine the monitoring frequency for subsequent monitoring periods (e.g., if a system's sampling point is on a nine year monitoring period, and the sample result is above ½ MCL, then the next monitoring period for that sampling point is three years).

(v) If a system has a monitoring result that exceeds the MCL while on reduced monitoring, the system must collect and analyze quarterly samples at that sampling point until the system has results from four consecutive quarters that are below the MCL, unless the system enters into another schedule as part of a formal compliance agreement with the State.

(4) *Compositing:* To fulfill quarterly monitoring requirements for gross alpha particle activity, radium-226, radium-228, or uranium, a system may composite up to four consecutive quarterly samples from a single entry point if analysis is done within a year of the first sample. States will treat analytical results from the composited as the average analytical result to determine compliance with the MCLs and the future monitoring frequency. If the analytical result from the composited sample is greater than ½ MCL, the State may direct the system to take additional quarterly samples before allowing the system to sample under a reduced monitoring schedule.

(5) A gross alpha particle activity measurement may be substituted for the required radium-226 measurement provided that the measured gross alpha particle activity does not exceed 5 pCi/l. A gross alpha particle activity measurement may be substituted for the required uranium measurement provided that the measured gross alpha particle activity does not exceed 15 pCi/l. The gross alpha measurement shall have a confidence interval of 95% (1.65s, where s is the standard deviation of the net counting rate of the sample) for radium-226 and uranium. When a system uses a gross alpha particle activity measurement in lieu of a radium-226 and/or uranium measurement, the gross alpha particle activity analytical result will be used to determine the future monitoring frequency for radium-226 and/or uranium. If the gross alpha particle activity result is less than detection, ½ the detection limit will be used to determine compliance and the future monitoring frequency.

(b) *Monitoring and compliance requirements for beta particle and photon radioactivity.* To determine compliance with the maximum contaminant levels in §141.66(d) for beta particle and photon radioactivity, a system must monitor at a frequency as follows:

(1) Community water systems (both surface and ground water) designated by the State as vulnerable must sample for beta particle and photon radioactivity. Systems must collect quarterly samples for beta emitters and annual samples for tritium and strontium-90 at each entry point to the distribution system (hereafter called a sampling point), beginning within one quarter after being notified by the State. Systems already designated by the State must continue to sample until the State reviews and either reaffirms or removes the designation.

(i) If the gross beta particle activity minus the naturally occurring potassium-40 beta particle activity at a sampling point has a running annual average (computed quarterly) less than or equal to 50 pCi/L (screening level), the State may reduce the frequency of monitoring at that sampling point to once every 3 years. Systems must collect all samples required in paragraph (b)(1) of this section during the reduced monitoring period.

(ii) For systems in the vicinity of a nuclear facility, the State may allow the CWS to utilize environmental surveillance data collected by the nuclear facility in lieu of monitoring at the system's entry point(s), where the State determines if such data is applicable to a particular water system. In the event that there is a release from a nuclear facility, systems which are using surveillance data must begin monitoring at the community water system's entry point(s) in accordance with paragraph (b)(1) of this section.

(2) Community water systems (both surface and ground water) designated by the State as utilizing waters contaminated by effluents from nuclear facilities must sample for beta particle and photon radioactivity. Systems must collect quarterly samples for beta emitters and iodine-131 and annual samples for tritium and strontium-90 at each entry point to the distribution system (hereafter called a sampling point), beginning within one quarter after being notified by the State. Systems already designated by the State as systems using waters contaminated by effluents from nuclear facilities must continue to sample until the State reviews and either reaffirms or removes the designation.

(i) Quarterly monitoring for gross beta particle activity shall be based on the analysis of monthly samples or the analysis of a composite of three monthly samples. The former is recommended.

(ii) For iodine-131, a composite of five consecutive daily samples shall be analyzed once each quarter. As ordered by the State, more frequent monitoring shall be conducted when iodine-131 is identified in the finished water.

(iii) Annual monitoring for strontium-90 and tritium shall be conducted by means of the analysis of a composite of four consecutive quarterly samples or analysis of four quarterly samples. The latter procedure is recommended.

(iv) If the gross beta particle activity minus the naturally occurring potassium-40 beta particle activity at a sampling point has a running annual average (computed quarterly) less than or equal to 15 pCi/L (screening level), the State may reduce the frequency of monitoring at that sampling point to every 3 years. Systems must collect the same type of samples required in paragraph (b)(2) of this section during the reduced monitoring period.

(v) For systems in the vicinity of a nuclear facility, the State may allow the CWS to utilize environmental surveillance data collected by the nuclear facility in lieu of monitoring at the system's entry point(s), where the State determines if such data is applicable to a particular water system. In the event that there is a release from a nuclear facility, systems which are using surveillance data must begin monitoring at the community water system's entry point(s) in accordance with paragraph (b)(2) of this section.

(3) Community water systems designated by the State to monitor for beta particle and photon radioactivity can not apply to the State for a waiver from the monitoring frequencies specified in paragraph (b)(1) or (b)(2) of this section.

(4) Community water systems may analyze for naturally occurring potassium-40 beta particle activity from the same or equivalent sample used for the gross beta particle activity analysis. Systems are allowed to subtract the potassium-40 beta particle activity value from the total gross beta particle activity value to determine if the screening level is exceeded. The potassium-40 beta particle activity must be calculated by multiplying elemental potassium concentrations (in mg/L) by a factor of 0.82.

(5) If the gross beta particle activity minus the naturally occurring potassium-40 beta particle activity exceeds the appropriate screening level, an analysis of the sample must be performed to identify the major radioactive constituents present in the sample and the appropriate doses must be calculated and summed to determine compliance with §141.66(d)(1), using the formula in §141.66(d)(2). Doses must also be calculated and combined for measured levels of tritium and strontium to determine compliance.

(6) Systems must monitor monthly at the sampling point(s) which exceed the maximum contaminant level in §141.66(d) beginning the month after the exceedance occurs. Systems must continue monthly monitoring until the system has established, by a rolling average of 3 monthly samples, that the MCL is being met. Systems who establish that the MCL is being met must return to quarterly monitoring until they meet the requirements set forth in paragraph (b)(1)(i) or (b)(2)(iv) of this section.

(c) *General monitoring and compliance requirements for radionuclides.* (1) The

State may require more frequent monitoring than specified in paragraphs (a) and (b) of this section, or may require confirmation samples at its discretion. The results of the initial and confirmation samples will be averaged for use in compliance determinations.

(2) Each public water systems shall monitor at the time designated by the State during each compliance period.

(3) *Compliance:* Compliance with §141.66 (b) through (e) will be determined based on the analytical result(s) obtained at each sampling point. If one sampling point is in violation of an MCL, the system is in violation of the MCL.

(i) For systems monitoring more than once per year, compliance with the MCL is determined by a running annual average at each sampling point. If the average of any sampling point is greater than the MCL, then the system is out of compliance with the MCL.

(ii) For systems monitoring more than once per year, if any sample result will cause the running average to exceed the MCL at any sample point, the system is out of compliance with the MCL immediately.

(iii) Systems must include all samples taken and analyzed under the provisions of this section in determining compliance, even if that number is greater than the minimum required.

(iv) If a system does not collect all required samples when compliance is based on a running annual average of quarterly samples, compliance will be based on the running average of the samples collected.

(v) If a sample result is less than the detection limit, zero will be used to calculate the annual average, unless a gross alpha particle activity is being used in lieu of radium-226 and/or uranium. If the gross alpha particle activity result is less than detection, ½ the detection limit will be used to calculate the annual average.

(4) States have the discretion to delete results of obvious sampling or analytic errors.

(5) If the MCL for radioactivity set forth in §141.66 (b) through (e) is exceeded, the operator of a community water system must give notice to the State pursuant to §141.31 and to the public as required by subpart Q of this part.

[65 FR 76745, Dec. 7, 2000, as amended at 69 FR 38855, June 29, 2004]

§141.27 Alternate analytical techniques.

(a) With the written permission of the State, concurred in by the Administrator of the U.S. EPA, an alternate analytical technique may be employed. An alternate technique shall be accepted only if it is substantially equivalent to the prescribed test in both precision and accuracy as it relates to the determination of compliance with any MCL. The use of the alternate analytical technique shall not decrease the frequency of monitoring required by this part.

[45 FR 57345, Aug. 27, 1980]

§141.28 Certified laboratories.

(a) For the purpose of determining compliance with §141.21 through 141.27, 141.30, 141.40, 141.74, 141.89 and 141.402, samples may be considered only if they have been analyzed by a laboratory certified by the State except that measurements of alkalinity, calcium, conductivity, disinfectant residual, orthophosphate, pH, silica, temperature and turbidity may be performed by any person acceptable to the State.

(b) Nothing in this part shall be construed to preclude the State or any duly designated representative of the State from taking samples or from using the results from such samples to determine compliance by a supplier of water with the applicable requirements of this part.

[45 FR 57345, Aug. 27, 1980; 47 FR 10999, Mar. 12, 1982, as amended at 59 FR 34323, July 1, 1994; 64 FR 67465, Dec. 1, 1999; 71 FR 65651, Nov. 8, 2006]

§141.29 Monitoring of consecutive public water systems.

When a public water system supplies water to one or more other public water systems, the State may modify the monitoring requirements imposed by this part to the extent that the interconnection of the systems justifies treating them as a single system for monitoring purposes. Any modified monitoring shall be conducted pursuant to a schedule specified by the State and concurred in by the Administrator of the U.S. Environmental Protection Agency.

APPENDIX A TO SUBPART C OF PART 141—ALTERNATIVE TESTING METHODS APPROVED FOR ANALYSES UNDER THE SAFE DRINKING WATER ACT

Only the editions stated in the following table are approved.

ALTERNATIVE TESTING METHODS FOR CONTAMINANTS LISTED AT 40 CFR 141.21(f)(3)

Organism	Methodology	SM 21st Edition [1]	SM 22nd Edition [28]	SM Online [3]	Other
Total Coliforms	Total Coliform Fermentation Technique.	9221 A, B	9221 A, B	9221 A,B–06.	
	Total Coliform Membrane Filter Technique.	9222 A, B, C	.		
	Presence-Absence (P–A) Coliform Test.	9221 D	.		
	ONPG–MUG Test	9223	9223 B	9223 B–04.	
	Colitag™				Modified Colitag™ [13]
	Tecta EC/TC [33]				

ALTERNATIVE TESTING METHODS FOR CONTAMINANTS LISTED AT 40 CFR 141.21(f)(5)

Organism	Methodology	SM 22nd Edition [28]	SM Online [3]
Fecal Coliforms	Fecal Coliform Procedure	9221 E	9221 E–06

ALTERNATIVE TESTING METHODS FOR CONTAMINANTS LISTED AT 40 CFR 141.21(f)(6)

Organism	Methodology	SM 20th Edition[6]	SM 21st Edition[1]	SM 22nd Edition[28]	SM Online[3]	Other
E.coli	ONPG–MUG Test	9223 B	9223 B	9223 B	9223 B–97, B–04	
	Colitag™					Modified Colitag™[13]
	Tecta EC/TC[33]					

ALTERNATIVE TESTING METHODS FOR CONTAMINANTS LISTED AT 40 CFR 141.23(k)(1)

Contaminant	Methodology	EPA method	SM 21st edition[1]	SM 22nd edition[28]	SM online[3]	ASTM[4]	Other
Alkalinity	Titrimetric		2320 B	2320 B		D1067–06 B, 11 B	
Antimony	Hydride—Atomic Absorption.					D 3697–07.	
	Atomic Absorption; Furnace.		3113 B	3113 B	3113 B–04, B–10.		
	Axially viewed inductively coupled plasma-atomic emission spectrometry (AVICP–AES).	200.5, Revision 4.2[2].			.		
Arsenic	Atomic Absorption; Furnace.		3113 B	3113 B	3113 B–04, B–10.	D 2972–08 C.	
	Hydride Atomic Absorption.		3114 B	3114 B	3114 B–09	D 2972–08 B.	
	Axially viewed inductively coupled plasma-atomic emission spectrometry (AVICP–AES).	200.5, Revision 4.2[2].			.		
Barium	Inductively Coupled Plasma.		3120 B	3120 B	.		
	Atomic Absorption; Direct.		3111 D	3111 D	.		
	Atomic Absorption; Furnace.		3113 B	3113 B	3113 B–04, B–10.		
	Axially viewed inductively coupled plasma-atomic emission spectrometry (AVICP–AES).	200.5, Revision 4.2[2].			.		
Beryllium	Inductively Coupled Plasma.		3120 B	3120 B	.		
	Atomic Absorption; Furnace.		3113 B	3113 B	3113 B–04, B–10.	D 3645–08 B.	
	Axially viewed inductively coupled plasma-atomic emission spectrometry (AVICP–AES).	200.5, Revision 4.2[2].			.		
Cadmium	Atomic Absorption; Furnace.		3113 B	3113 B	3113 B–04, B–10.		
	Axially viewed inductively coupled plasma-atomic emission spectrometry (AVICP–AES).	200.5, Revision 4.2[2].			.		
Calcium	EDTA titrimetric		3500–Ca B	3500–Ca B		D 511–09 A	
	Atomic Absorption; Direct Aspiration.		3111 B	3111 B		D 511–09 B	
	Inductively Coupled Plasma.		3120 B	3120 B			
	Axially viewed inductively coupled plasma-atomic emission spectrometry (AVICP–AES).	200.5, Revision 4.2[2]					
	Ion Chromatography					D 6919–09	
Chromium	Inductively Coupled Plasma.		3120 B	3120 B	.		
	Atomic Absorption; Furnace.		3113 B	3113 B	3113 B–04, B–10.		
	Axially viewed inductively coupled plasma-atomic emission spectrometry (AVICP–AES).	200.5, Revision 4.2[2].			.		
Copper	Atomic Absorption; Furnace.		3113 B	3113 B	3113 B–04, B–10.	D 1688–07 C.	

ALTERNATIVE TESTING METHODS FOR CONTAMINANTS LISTED AT 40 CFR 141.23(k)(1)—Continued

Contaminant	Methodology	EPA method	SM 21st edition[1]	SM 22nd edition[28]	SM online[3]	ASTM[4]	Other
	Atomic Absorption; Direct Aspiration.		3111 B	3111 B		D 1688–07 A.	
	Inductively Coupled Plasma.		3120 B	3120 B			
	Axially viewed inductively coupled plasma-atomic emission spectrometry (AVICP–AES).	200.5, Revision 4.2[2].					
Conductivity.	Conductance		2510 B	2510 B			
Cyanide	Manual Distillation followed by.					D 2036–06 A	
	Spectrophotometric, Amenable.		4500–CN$^{¥}$ G.	4500–CN$^{¥}$ G.		D 2036–06 B	
	Spectrophotometric Manual.		4500–CN$^{¥}$ E.	4500–CN$^{¥}$ E.		D2036–06 A	
	Selective Electrode		4500–CN$^{¥}$ F.	4500–CN$^{¥}$ F.			
	Headspace Gas Chromatography/Mass Spectrometry.						ME355.01[7]
Fluoride	Ion Chromatography		4110 B	4110 B		D 4327–11.	
	Manual Distillation; Colorimetric SPADNS.		4500–F$^{¥}$ B, D.	4500–F$^{¥}$ B, D.			
	Manual Electrode		4500–F$^{¥}$ C.	4500–F$^{¥}$ C.		D 1179–04, 10 B.	
	Automated Alizarin		4500–F$^{¥}$ E.	4500–F$^{¥}$ E.			
	Arsenite-Free Colorimetric SPADNS.						Hach SPADNS 2 Method 10225[22]
Lead	Atomic Absorption; Furnace.		3113 B	3113 B	3113 B–04, B–10.	D 3559–08 D.	
	Axially viewed inductively coupled plasma-atomic emission spectrometry (AVICP–AES).	200.5, Revision 4.2[2].					
Magnesium.	Atomic Absorption		3111 B	3111 B		D 511–09 B	
	Inductively Coupled Plasma.		3120 B	3120 B			
	Complexation Titrimetric Methods.		3500–Mg B.	3500–Mg B.		D 511–09 A	
	Axially viewed inductively coupled plasma-atomic emission spectrometry (AVICP–AES).	200.5, Revision 4.2[2]					
	Ion Chromatography					D 6919–09	
Mercury	Manual, Cold Vapor		3112 B	3112 B	3112 B–09	D 3223–12.	
Nickel	Inductively Coupled Plasma.		3120 B	3120 B			
	Atomic Absorption; Direct.		3111 B	3111 B			
	Atomic Absorption; Furnace.		3113 B	3113 B	3113 B–04, B–10.		
	Axially viewed inductively coupled plasma-atomic emission spectrometry (AVICP–AES).	200.5, Revision 4.2[2].					
Nitrate	Ion Chromatography		4110 B	4110 B		D 4327–11.	
	Automated Cadmium Reduction.		4500–$NO_3^{¥}$ F.	4500–$NO_3^{¥}$ F.			
	Manual Cadmium Reduction.		4500–$NO_3^{¥}$ E.	4500–$NO_3^{¥}$ E.			
	Ion Selective Electrode		4500–$NO_3^{¥}$ D.	4500–$NO_3^{¥}$ D.			

ALTERNATIVE TESTING METHODS FOR CONTAMINANTS LISTED AT 40 CFR 141.23(k)(1)—Continued

Contaminant	Methodology	EPA method	SM 21st edition[1]	SM 22nd edition[28]	SM online[3]	ASTM[4]	Other
	Reduction/Colorimetric						Systea Easy (1-Reagent)[8]
	Colorimetric; Direct						Hach TNTplus™ 835/836 Method 10206[23]
Nitrite	Ion Chromatography		4110 B	4110 B		D 4327–11.	
	Automated Cadmium Reduction.		4500–NO_3¥ F.	4500–NO_3¥ F.	.		
	Manual Cadmium Reduction.		4500–NO_3¥ E.	4500–NO_3¥ E.	.		
	Spectrophotometric		4500–NO_2¥ B.	4500–NO_2¥ B.	.		
	Reduction/Colorimetric						Systea Easy (1-Reagent)[8]
Orthophosphate.	Ion Chromatography		4110 B	4110 B		D 4327–11.	
	Colorimetric, ascorbic acid, single reagent.		4500–P E	4500–P E	4500–P E–99.		
	Colorimetric, Automated, Ascorbic Acid.		4500–P F	4500–P F	4500–P F–99.		
pH	Electrometric		4500–H^+ B	4500–H^+ B		D 1293–12	
Selenium	Hydride-Atomic Absorption.		3114 B	3114 B	3114 B–09	D 3859–08 A.	
	Atomic Absorption; Furnace.		3113 B	3113 B	3113 B–04, B–10.	D 3859–08 B.	
	Axially viewed inductively coupled plasma-atomic emission spectrometry (AVICP–AES).	200.5, Revision 4.2[2].			.		
Silica	Colorimetric					D859–05, 10	
	Molybdosilicate		4500-SiO_2 C.	4500-SiO_2 C.			
	Heteropoly blue		4500–SiO_2 D.	4500–SiO_2 D.			
	Automated for Molybdate-reactive Silica.		4500–SiO_2 E.	4500–SiO_2 E.			
	Axially viewed inductively coupled plasma-atomic emission spectrometry (AVICP–AES).	200.5, Revision 4.2[2]					
	Inductively Coupled Plasma.		3120 B	3120 B			
Sodium	Atomic Absorption; Direct Aspiration.		3111 B	3111 B			
	Axially viewed inductively coupled plasma-atomic emission spectrometry (AVICP–AES).	200.5, Revision 4.2[2]					
	Ion Chromatography					D 6919–09	
Temperature.	Thermometric		2550	2550	2550–10.		

ALTERNATIVE TESTING METHODS FOR CONTAMINANTS LISTED AT 40 CFR 141.24(e)(1)

Contaminant	Methodology	EPA method	SM 21st edition [1]	SM 22nd edition [28]	SM online [3]
Benzene	Purge & trap/Gas Chromatography/Mass Spectrometry	524.3,[9] 524.4[29]			
Carbon tetrachloride	Purge & trap/Gas Chromatography/Mass Spectrometry	524.3,[9] 524.4[29]			
Chlorobenzene	Purge & trap/Gas Chromatography/Mass Spectrometry	524.3,[9] 524.4[29]			
1,2- Dichlorobenzene	Purge & trap/Gas Chromatography/Mass Spectrometry	524.3,[9] 524.4[29]			
1,4- Dichlorobenzene	Purge & trap/Gas Chromatography/Mass Spectrometry	524.3,[9] 524.4[29]			
1,2- Dichloroethane	Purge & trap/Gas Chromatography/Mass Spectrometry	524.3,[9] 524.4[29]			
cis- Dichloroethylene	Purge & trap/Gas Chromatography/Mass Spectrometry	524.3,[9] 524.4[29]			
trans- Dichloroethylene	Purge & trap/Gas Chromatography/Mass Spectrometry	524.3,[9] 524.4[29]			
Dichloromethane	Purge & trap/Gas Chromatography/Mass Spectrometry	524.3,[9] 524.4[29]			
1,2- Dichloropropane	Purge & trap/Gas Chromatography/Mass Spectrometry	524.3,[9] 524.4[29]			
Ethylbenzene	Purge & trap/Gas Chromatography/Mass Spectrometry	524.3,[9] 524.4[29]			
Styrene	Purge & trap/Gas Chromatography/Mass Spectrometry	524.3,[9] 524.4[29]			
Tetrachloroethylene	Purge & trap/Gas Chromatography/Mass Spectrometry	524.3,[9] 524.4[29]			
1,1,1- Trichloroethane	Purge & trap/Gas Chromatography/Mass Spectrometry	524.3,[9] 524.4[29]			
Trichloroethylene	Purge & trap/Gas Chromatography/Mass Spectrometry	524.3,[9] 524.4[29]			
Toluene	Purge & trap/Gas Chromatography/Mass Spectrometry	524.3,[9] 524.4[29]			
1,2,4- Trichlorobenzene	Purge & trap/Gas Chromatography/Mass Spectrometry	524.3,[9] 524.4[29]			
1,1- Dichloroethylene	Purge & trap/Gas Chromatography/Mass Spectrometry	524.3,[9] 524.4[29]			
1,1,2- Trichlorethane	Purge & trap/Gas Chromatography/Mass Spectrometry	524.3,[9] 524.4[29]			
Vinyl chloride	Purge & trap/Gas Chromatography/Mass Spectrometry	524.3,[9] 524.4[29]			
Xylenes (total)	Purge & trap/Gas Chromatography/Mass Spectrometry	524.3,[9] 524.4[29]			
2,4- D	Gas Chromatography/Electron Capture Detection (GC/ECD)		6640 B	6640 B	6640 B–01, B–06.
2,4,5- TP (Silvex)	Gas Chromatography/Electron Capture Detection (GC/ECD)		6640 B	6640 B	6640 B–01, B–06.
Alachlor	Solid Phase Extraction/Gas Chromatography/Mass Spectrometry (GC/MS).	525.3[24]			
Atrazine	Liquid Chromatography Electrospray Ionization Tandem Mass Spectrometry (LC/ESI–MS/MS).	536[25]			
	Solid Phase Extraction/Gas Chromatography/Mass Spectrometry (GC/MS).	525.3,[24] 523[26]			
Benzo(a)pyrene	Solid Phase Extraction/Gas Chromatography/Mass Spectrometry (GC/MS).	525.3[24]			
Carbofuran	High- performance liquid chromatography (HPLC) with post-column derivatization and fluorescence detection.		6610 B	6610 B	6610 B–04.
Chlordane	Solid Phase Extraction/Gas Chromatography/Mass Spectrometry (GC/MS).	525.3[24]			
Dalapon	Ion Chromatography Electrospray Ionization Tandem Mass Spectrometry (IC–ESI–MS/MS).	557[14]	.		
	Gas Chromatography/Electron Capture Detection (GC/ECD)		6640 B	6640 B	6640 B–01, B–06.
Di(2- ethylhexyl)adipate	Solid Phase Extraction/Gas Chromatography/Mass Spectrometry (GC/MS).	525.3[24]			
Di(2- ethylhexyl)phthalate	Solid Phase Extraction/Gas Chromatography/Mass Spectrometry (GC/MS).	525.3[24]			

Dibromochloropropane (DBCP)	Purge & trap/Gas Chromatography/Mass Spectrometry	524.3[9]			
Dinoseb	Gas Chromatography/Electron Capture Detection (GC/ECD)		6640 B	6640 B	6640 B–01, B–06.
Endrin	Solid Phase Extraction/Gas Chromatography/Mass Spectrometry (GC/MS).	525.3[24]			
Ethyl dibromide (EDB)	Purge & trap/Gas Chromatography/Mass Spectrometry	524.3[9]			
Glyphosate	High-Performance Liquid Chromatography (HPLC) with Post-Column Derivatization and Fluorescence Detection.		6651 B	6651 B	6651 B–00, B–05.
Heptachlor	Solid Phase Extraction/Gas Chromatography/Mass Spectrometry (GC/MS).	525.3[24]			
Heptachlor Epoxide	Solid Phase Extraction/Gas Chromatography/Mass Spectrometry (GC/MS).	525.3[24]			
Hexachlorobenzene	Solid Phase Extraction/Gas Chromatography/Mass Spectrometry (GC/MS).	525.3[24]			
Hexachlorocyclopentadiene	Solid Phase Extraction/Gas Chromatography/Mass Spectrometry (GC/MS).	525.3[24]			
Lindane	Solid Phase Extraction/Gas Chromatography/Mass Spectrometry (GC/MS).	525.3[24]			
Methoxychlor	Solid Phase Extraction/Gas Chromatography/Mass Spectrometry (GC/MS).	525.3[24]			
Oxamyl	High-performance liquid chromatography (HPLC) with post-column derivatization and fluorescence detection.		6610 B	6610 B	6610 B–04.
PCBs (as Aroclors)	Solid Phase Extraction/Gas Chromatography/Mass Spectrometry (GC/MS).	525.3[24]			
Pentachlorophenol	Gas Chromatography/Electron Capture Detection (GC/ECD)		6640 B	6640 B	6640 B–01, B–06.
	Solid Phase Extraction/Gas Chromatography/Mass Spectrometry (GC/MS).	525.3[24]	.		
Picloram	Gas Chromatography/Electron Capture Detection (GC/ECD)		6640 B	6640 B	6640 B–01, B–06.
Simazine	Liquid Chromatography Electrospray Ionization Tandem Mass Spectrometry (LC/ESI–MS/MS).	536[25]			
	Solid Phase Extraction/Gas Chromatography/Mass Spectrometry (GC/MS).	525.3,[24] 523[26]			
Toxaphene	Solid Phase Extraction/Gas Chromatography/Mass Spectrometry (GC/MS).	525.3[24]			
Total Trihalomethanes	Purge & trap/Gas Chromatography/Mass Spectrometry	524.3,[9] 524.4[29]			

ALTERNATIVE TESTING METHODS FOR CONTAMINANTS LISTED AT 40 CFR 141.25(a)

Contaminant	Methodology	SM 21st Edition [1]	SM 22nd Edition [28]	ASTM [4]
Naturally Occurring:				
Gross alpha and beta	Evaporation	7110 B	7110 B.	
Gross alpha	Coprecipitation	7110 C	7110 C.	
Radium 226	Radon emanation	7500–Ra C	7500–Ra C	D3454–05
	Radiochemical	7500–Ra B	7500–Ra B	D2460–07
Radium 228	Radiochemical	7500–Ra D	7500–Ra D.	
Uranium	Radiochemical	7500–U B	7500–U B.	
	ICP–MS	3125		D5673–05, 10
	Alpha spectrometry	7500–U C	7500–U C	D3972–09
	Laser Phosphorimetry			D5174–07
	Alpha Liquid Scintillation Spectrometry			D6239–09
Man-Made:				
Radioactive Cesium	Radiochemical	7500–Cs B	7500–Cs B.	
	Gamma Ray Spectrometry	7120	7120	D3649–06
Radioactive Iodine	Radiochemical	7500–I B	7500–I B	D3649–06
		7500–I C	7500–I C.	
		7500–I D	7500–I D.	
	Gamma Ray Spectrometry	7120	7120	D4785–08
Radioactive Strontium 89, 90	Radiochemical	7500–Sr B	7500–Sr B.	
Tritium	Liquid Scintillation	7500–^{3}H B	7500–^{3}H B	D4107–08
Gamma Emitters	Gamma Ray Spectrometry	7120	7120	D3649–06
		7500–Cs B	7500–Cs B	D4785–08
		7500–I B	7500–I B	

ALTERNATIVE TESTING METHODS FOR CONTAMINANTS LISTED AT 40 CFR 141.74(a)(1)

Organism	Methodology	SM 21st Edition [1]	SM 22nd Edition [28]	SM Online [3]	Other
Total Coliform	Total Coliform Fermentation Technique.	9221 A, B, C	9221 A, B, C	9221 A,B,C–06.	
	Total Coliform Membrane Filter Technique.	9222 A, B, C	.		
	ONPG–MUG Test	9223	9223 B	9223 B–04.	
Fecal Coliforms	Fecal Coliform Procedure	9221 E	9221 E	9221 E–06.	
	Fecal Coliform Filter Procedure.	9222 D	9222 D	9222 D–06.	
Heterotrophic bacteria	Pour Plate Method	9215 B	9215 B	9215 B–04.	
Turbidity	Nephelometric Method	2130 B	2130 B.		
	Laser Nephelometry (on- line)				Mitchell M5271.[10]
	LED Nephelometry (on- line)				Mitchell M5331.[11]
	LED Nephelometry (on- line)				AMI Turbiwell.[15]
	LED Nephelometry (portable)				Orion AQ4500.[12]

ALTERNATIVE TESTING METHODS FOR DISINFECTANT RESIDUALS LISTED AT 40 CFR 141.74(a)(2)

Residual	Methodology	SM 21st Edition[1]	SM 22nd Edition[28]	ASTM[4]	Other
Free Chlorine.	Amperometric Titration	4500-Cl D	4500-Cl D	D 1253–08.	
	DPD Ferrous Titrimetric	4500-Cl F	4500-Cl F.		
	DPD Colorimetric	4500-Cl G	4500-Cl G		Hach Method 10260.[31]
	Syringaldazine (FACTS)	4500-Cl H	4500-Cl H.		
	On-line Chlorine Analyzer				EPA 334.0.[16]
	Amperometric Sensor				ChloroSense.[17]
Total Chlorine.	Amperometric Titration	4500-Cl D	4500-Cl D	D 1253–08.	
	Amperometric Titration (Low level measurement).	4500-Cl E	4500-Cl E.		
	DPD Ferrous Titrimetric	4500-Cl F	4500-Cl F.		
	DPD Colorimetric	4500-Cl G	4500-Cl G		Hach Method 10260.[31]
	Iodometric Electrode	4500-Cl I	4500-Cl I.		
	On-line Chlorine Analyzer				EPA 334.0.[16]
	Amperometric Sensor				ChloroSense.[17]
Chlorine Dioxide.	Amperometric Titration	4500–ClO_2 C	4500–ClO_2 C.		
	Amperometric Titration	4500–ClO_2 E	4500–ClO_2 E.		
	Amperometric Sensor				ChlordioX Plus.[32]
Ozone	Indigo Method	4500–O_3 B	4500–O_3 B.		

ALTERNATIVE TESTING METHODS FOR CONTAMINANTS LISTED AT 40 CFR 141.131(b)(1)

Contaminant	Methodology	EPA Method	ASTM[4]	SM Online[3]	SM 21st Edition[1]	SM 22nd Edition[28]	Other
TTHM	P&T/GC/MS	524.3[9], 524.4[29]					
HAA5	LLE (diazomethane)/GC/ECD.			6251 B–07	6251 B	6251 B.	
	Ion Chromatography Electrospray Ionization Tandem Mass Spectrometry (IC–ESI–MS/MS).	557[14]					
Bromate	Two-Dimensional Ion Chromatography (IC).	302.0[18]					
	Ion Chromatography Electrospray Ionization Tandem Mass Spectrometry (IC–ESI–MS/MS).	557[14]					
	Chemically Suppressed Ion Chromatography.		D 6581–08 A				
	Electrolytically Suppressed Ion Chromatography.		D 6581–08 B				
Chlorite	Chemically Suppressed Ion Chromatography.		D 6581–08 A				
	Electrolytically Suppressed Ion Chromatography.		D 6581–08 B				
Chlorite—daily monitoring as prescribed in 40 CFR 141.132(b)(2)(i)(A).	Amperometric Titration.				4500–ClO$_2$ E	4500–ClO$_2$ E.	
	Amperometric Sensor						ChlordioX Plus.[32]

ALTERNATIVE TESTING METHODS FOR DISINFECTANT RESIDUALS LISTED AT 40 CFR 141.131(c)(1)

Residual	Methodology	SM 21st Edition[1]	SM 22nd Edition[28]	ASTM[4]	Other
Free Chlorine	Amperometric Titration	4500-Cl D	4500-Cl D	D 1253–08.	
	DPD Ferrous Titrimetric	4500-Cl F	4500-Cl F.		
	DPD Colorimetric	4500-Cl G	4500-Cl G		Hach Method 10260[31].
	Syringaldazine (FACTS)	4500-Cl H	4500-Cl H.		
	Amperometric Sensor				ChloroSense[17].
	On-line Chlorine Analyzer				EPA 334.0[16].

ALTERNATIVE TESTING METHODS FOR DISINFECTANT RESIDUALS LISTED AT 40 CFR 141.131(c)(1)—Continued

Residual	Methodology	SM 21st Edition[1]	SM 22nd Edition[28]	ASTM[4]	Other
Combined Chlorine	Amperometric Titration	4500-Cl D	4500-Cl D	D 1253–08.	
	DPD Ferrous Titrimetric	4500-Cl F	4500-Cl F.		
	DPD Colorimetric	4500-Cl G	4500-Cl G		Hach Method 10260[31].
Total Chlorine	Amperometric Titration	4500-Cl D	4500-Cl D	D 1253–08.	
	Low level Amperometric Titration.	4500-Cl E	4500-Cl E.		
	DPD Ferrous Titrimetric	4500-Cl F	4500-Cl F.		
	DPD Colorimetric	4500-Cl G	4500-Cl G		Hach Method 10260[31].
	Iodometric Electrode	4500-Cl I	4500-Cl I.		
	Amperometric Sensor				ChloroSense[17].
	On-line Chlorine Analyzer				EPA 334.0[16].
Chlorine Dioxide	Amperometric Method II	4500–ClO_2 E	4500–ClO_2 E.		
	Amperometric Sensor				ChlordioX Plus[32].

ALTERNATIVE TESTING METHODS FOR DISINFECTANT RESIDUALS LISTED AT 40 CFR 141.131(c)(2), IF APPROVED BY THE STATE

Residual	Methodology	Method
Free Chlorine	Test Strips	Method D99–003 [5]

ALTERNATIVE TESTING METHODS FOR PARAMETERS LISTED AT 40 CFR 141.131(d)

Parameter	Methodology	SM 21st Edition [1]	SM 22nd Edition [28]	SM Online [3]	EPA
Total Organic Carbon (TOC)	High Temperature Combustion.	5310 B	5310 B		415.3, Rev 1.2 [19].
	Persulfate- Ultraviolet or Heated Persulfate Oxidation.	5310 C	5310 C		415.3, Rev 1.2 [19].
	Wet Oxidation	5310 D	5310 D		415.3, Rev 1.2 [19].
Specific Ultraviolet Absorbance (SUVA).	Calculation using DOC and UV_{254} data.				415.3, Rev 1.2 [19].
Dissolved Organic Carbon (DOC).	High Temperature Combustion.	5310 B	5310 B		415.3, Rev 1.2 [19].
	Persulfate- Ultraviolet or Heated Persulfate Oxidation.	5310 C	5310 C		415.3, Rev 1.2 [19].
	Wet Oxidation	5310 D	5310 D		415.3, Rev 1.2 [19].
Ultraviolet absorption at 254 nm (UV_{254}).	Spectrophotometry	5910 B	5910 B	5910 B–11	415.3, Rev 1.2 [19].

Alternative Testing Methods With MRL >0.0010 mg/L for Monitoring Listed at 40 CFR 141.132(b)(3)(ii)(B)

Contaminant	Methodology	EPA method
Bromate	Two-Dimensional Ion Chromatography (IC) Ion Chromatography Electrospray Ionization Tandem Mass Spectrometry (IC–ESI–MS/MS).	302.0 [18] 557 [14]

Alternative Testing Methods for Contaminants Listed at 40 CFR 141.402(c)(2)

Organism	Methodology	SM 20th Edition [6]	SM 21st Edition [1]	SM 22nd Edition [28]	SM Online [3]	Other
E. coli	Colilert®		9223 B	9223 B	*9223 B–97, B–04.*	
	Colisure®		9223 B	9223 B	9223 B–97, B–04.	
	Colilert-18	9223 B	9223 B	9223 B	9223 B–97, B–04.	
	Readycult®					Readycult® [20].
	Colitag					Modified Colitag™ [13].
	Chromocult®					Chromocult® [21].
	EC–MUG			9221 F	9221 F–06.	
	Tecta EC/TC [33].			.		
Enterococci	Multiple-Tube Technique.				*9230 B–04.*	
Coliphage	Two-Step Enrichment Presence-Absence Procedure.					Fast Phage [30]

Alternative Testing Methods for Contaminants Listed at 40 CFR 141.704(a)

Organism	Methodology	EPA Method
Cryptosporidium	*Filtration/Immunomagnetic Separation/Immunofluorescence Assay Microscopy.*	*1623.1* [27]

Alternative Testing Methods for Contaminants Listed at 40 CFR 141.704(b)

Organism	Methodology	SM 20th edition [6]
E. coli	Membrane Filtration, Two Step	9222 D/9222 G

Alternative Testing Methods for Contaminants Listed at 40 CFR 141.852(a)(5)

Organism	Methodology category	Method	SM 20th, 21st editions [1] [6]	SM 22nd Edition [28]	SM Online [3]
Total Coliforms	Lactose Fermentation Methods.	Standard Total Coliform Fermentation Technique.		9221 B.1, B.2	9221 B.1, B.2–06.
	Enzyme Substrate Methods.	Colilert®		9223 B	9223 B–04.
		Colisure®		9223 B	9223 B–04.
		Colilert-18®	9223 B	9223 B	9223 B–04.
		Tecta EC/TC. [33]			
Escherichia coli	*Escherichia coli* Procedure (following Lactose Fermentation Methods).	EC–MUG medium		9221 F.1	9221 F.1–06.
	Enzyme Substrate Methods.	Colilert®		9223 B	9223 B–04.
		Colisure®		9223 B	9223 B–04.
		Colilert-18®	9223 B	9223 B	9223 B–04.
		Tecta EC/TC. [33]			

ALTERNATIVE TESTING METHODS FOR CONTAMINANTS LISTED AT 40 CFR 143.4(b)

Contaminant	Methodology	EPA method	ASTM[4]	SM 21st Edition[1]	SM 22nd Edition[28]	SM online[3]
Aluminum	Axially viewed inductively coupled plasma-atomic emission spectrometry (AVICP–AES).	200.5, Revision 4.2[2]		.		
	Atomic Absorption; Direct			3111 D	3111 D.	
	Atomic Absorption; Furnace			3113 B	3113 B	3113 B-04, B-10.
	Inductively Coupled Plasma			3120 B	3120 B.	
Chloride	Silver Nitrate Titration		D 512-04B, 12 B	4500-Cl^- B	4500-Cl^- B.	
	Ion Chromatography		D 4327-11	4110 B	4110 B.	
	Potentiometric Titration			4500-Cl^- D	4500-Cl^- D.	
Color	Visual Comparison			2120 B	2120 B.	
Foaming Agents	Methylene Blue Active Substances (MBAS).			5540 C	5540 C.	
Iron	Axially viewed inductively coupled plasma-atomic emission spectrometry (AVICP–AES).	200.5, Revision 4.2[2]		.		
	Atomic Absorption; Direct			3111 B	3111 B.	
	Atomic Absorption; Furnace			3113 B	3113 B	3113 B-04, B-10.
	Inductively Coupled Plasma			3120 B	3120 B.	
Manganese	Axially viewed inductively coupled plasma-atomic emission spectrometry (AVICP–AES).	200.5, Revision 4.2[2]		.		
	Atomic Absorption; Direct			3111 B	3111 B.	
	Atomic Absorption; Furnace			3113 B	3113 B	3113 B-04, B-10.
	Inductively Coupled Plasma			3120 B	3120 B.	
Odor	Threshold Odor Test			2150 B	2150 B.	
Silver	Axially viewed inductively coupled plasma-atomic emission spectrometry (AVICP–AES).	200.5, Revision 4.2[2]		.		
	Atomic Absorption; Direct			3111 B	3111 B.	
	Atomic Absorption; Furnace			3113 B	3113 B	3113 B-04, B-10.
	Inductively Coupled Plasma			3120 B	3120 B.	
Sulfate	Ion Chromatography		D 4327-11	4110 B	4110 B.	
	Gravimetric with ignition of residue.			4500-SO_4^{2-} C	4500-SO_4^{2-} C	4500-SO_4^{2-} C-97
	Gravimetric with drying of residue.			4500-SO_4^{2-} D	4500-SO_4^{2-} D	4500-SO_4^{2-} D-97
	Turbidimetric method		D 516–07, 11	4500-SO_4^{2-} E	4500-SO_4^{2-} E	4500-SO_4^{2-} E-97
	Automated methylthymol blue method.			4500-SO_4^{2-} F	4500-SO_4^{2-} F	4500-SO_4^{2-} F-97
Total Dissolved Solids	Total Dissolved Solids Dried at 180 deg C.			2540 C	2540 C.	

Zinc	Axially viewed inductively coupled plasma-atomic emission spectrometry (AVICP–AES).	200.5, Revision 4.2 [2]				
	Atomic Absorption; Direct Aspiration.			3111 B	3111 B.	
	Inductively Coupled Plasma			3120 B	3120 B.	

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[2] EPA Method 200.5, Revision 4.2. "Determination of Trace Elements in Drinking Water by Axially Viewed Inductively Coupled Plasma-Atomic Emission Spectrometry." 2003. EPA/600/R–06/115. (Available at *http://www.epa.gov/nerlcwww/ordmeth.htm.*)

[3] Standard Methods Online are available at *http://www.standardmethods.org*. The year in which each method was approved by the Standard Methods Committee is designated by the last two digits in the method number. The methods listed are the only online versions that may be used.

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[5] Method D99–003, Revision 3.0. "Free Chlorine Species (HOCl¥ and OCl¥) by Test Strip," November 21, 2003. Available from Industrial Test Systems, Inc., 1875 Langston St., Rock Hill, SC 29730.

[6] *Standard Methods for the Examination of Water and Wastewater*, 20th edition (1998). Available from American Public Health Association, 800 I Street, NW., Washington, DC 20001–3710.

[7] Method ME355.01, Revision 1.0. "Determination of Cyanide in Drinking Water by GC/MS Headspace," May 26, 2009. Available at *http://www.nemi.gov* or from James Eaton, H & E Testing Laboratory, 221 State Street, Augusta, ME 04333. (207) 287–2727.

[8] Systea Easy (1-Reagent). "Systea Easy (1-Reagent) Nitrate Method," February 4, 2009. Available at *http://www.nemi.gov* or from Systea Scientific, LLC., 900 Jorie Blvd., Suite 35, Oak Brook, IL 60523.

[9] EPA Method 524.3, Version 1.0. "Measurement of Purgeable Organic Compounds in Water by Capillary Column Gas Chromatography/Mass Spectrometry," June 2009. EPA 815–B–09–009. Available at *http://epa.gov/safewater/methods/analyticalmethods_ogwdw.html.*

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[12] Orion Method AQ4500, Revision 1.0. "Determination of Turbidity by LED Nephelometry," May 8, 2009. Available at *http://www.nemi.gov* or from Thermo Scientific, 166 Cummings Center, Beverly, MA 01915, *http://www.thermo.com.*

[13] Modified Colitag™ Method, "Modified Colitag™ Test Method for the Simultaneous Detection of *E. coli* and other Total Coliforms in Water (ATP D05–0035)," August 28, 2009. Available at *http://www.nemi.gov* or from CPI, International, 580 Skylane Boulevard, Santa Rosa, CA 95403.

[14] EPA Method 557. "Determination of Haloacetic Acids, Bromate, and Dalapon in Drinking Water by Ion Chromatography Electrospray Ionization Tandem Mass Spectrometry (IC–ESI–MS/MS)," September 2009. EPA 815–B–09–012. Available at *http://water.epa.gov/scitech/drinkingwater/labcert/analyticalmethods_expedited.cfm.*

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[16] EPA Method 334.0. "Determination of Residual Chlorine in Drinking Water Using an On-line Chlorine Analyzer," August 2009. EPA 815–B–09–013. Available at *http://epa.gov/safewater/methods/analyticalmethods_ogwdw.html.*

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[18] EPA Method 302.0. "Determination of Bromate in Drinking Waters using Two-Dimensional Ion Chromatography with Suppressed Conductivity Detection," September 2009. EPA 815–B–09–014. Available at *http://epa.gov/safewater/methods/analyticalmethods_ogwdw.html.*

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Subpart D—Reporting and Recordkeeping

§141.31 Reporting requirements.

(a) Except where a shorter period is specified in this part, the supplier of water shall report to the State the results of any test measurement or analysis required by this part within (1) The first ten days following the month in which the result is received, or (2) the first ten days following the end of the required monitoring period as stipulated by the State, whichever of these is shortest.

(b) Except where a different reporting period is specified in this part, the supplier of water must report to the State within 48 hours the failure to comply with any national primary drinking water regulation (including failure to comply with monitoring requirements) set forth in this part.

(c) The supplier of water is not required to report analytical results to the State in cases where a State laboratory performs the analysis and reports the results to the State office which would normally receive such notification from the supplier.

(d) The public water system, within 10 days of completing the public notification requirements under subpart Q of this part for the initial public notice and any repeat notices, must submit to the primacy agency a certification that it has fully complied with the public notification regulations. The public water system must include with this certification a representative copy of each type of notice distributed, published, posted, and made available to the persons served by the system and to the media.

(e) The water supply system shall submit to the State within the time stated in the request copies of any records required to be maintained under §141.33 hereof or copies of any documents then in existence which the State or the Administrator is entitled to inspect pursuant to the authority of section 1445 of the Safe Drinking Water Act or the equivalent provisions of State law.

[40 FR 59570, Dec. 24, 1975, as amended at 45 FR 57345, Aug. 27, 1980; 65 FR 26022, May 4, 2000]

§141.32 [Reserved]

§141.33 Record maintenance.

Any owner or operator of a public water system subject to the provisions of this part shall retain on its premises or at a convenient location near its premises the following records:

(a) Records of microbiological analyses and turbidity analyses made pursuant to this part shall be kept for not less than 5 years. Records of chemical analyses made pursuant to this part shall be kept for not less than 10 years. Actual laboratory reports may be kept, or data may be transferred to tabular summaries, provided that the following information is included:

(1) The date, place, and time of sampling, and the name of the person who collected the sample;

(2) Identification of the sample as to whether it was a routine distribution system sample, check sample, raw or process water sample or other special purpose sample;

(3) Date of analysis;

(4) Laboratory and person responsible for performing analysis;

(5) The analytical technique/method used; and

(6) The results of the analysis.

(b) Records of action taken by the system to correct violations of primary drinking water regulations shall be kept for a period not less than 3 years after the last action taken with respect to the particular violation involved.

(c) Copies of any written reports, summaries or communications relating to sanitary surveys of the system conducted by the system itself, by a private consultant, or by any local, State or Federal agency, shall be kept for a period not less than 10 years after completion of the sanitary survey involved.

(d) Records concerning a variance or exemption granted to the system shall be kept for a period ending not less than 5 years following the expiration of such variance or exemption.

(e) Copies of public notices issued pursuant to subpart Q of this part and certifications made to the primacy agency pursuant to §141.31 must be kept for three years after issuance.

(f) Copies of monitoring plans developed pursuant to this part shall be kept for the same period of time as the records of analyses taken under the plan are required to be kept under paragraph (a) of this section, except as specified elsewhere in this part.

[40 FR 59570, Dec. 24, 1975, as amended at 65 FR 26022, May 4, 2000; 71 FR 478, Jan. 4, 2006]

§141.34 [Reserved]

§141.35 Reporting for unregulated contaminant monitoring results.

(a) *General applicability.* This section applies to any owner or operator of a public water system (PWS) required to monitor for unregulated contaminants under §141.40(a); such owner or operator is referred to as ''you.'' This section specifies the information that must be reported to EPA prior to the commencement of monitoring and describes the process for reporting monitoring results to EPA. For the purposes of this section, PWS ''population served'' is the retail population served directly by the PWS as reported to the Federal Safe Drinking Water Information System (SDWIS/Fed); wholesale or consecutive populations are not included. For purposes of this section, the term ''finished'' means water that is introduced into the distribution system of a PWS and is intended for distribution and consumption without further treatment, except the treatment necessary to maintain water quality in the distribution system (e.g., booster disinfection, addition of corrosion control chemicals). For purposes of this section, the term ''State'' refers to the State or Tribal government entity that has jurisdiction over your PWS even if that government does not have primary enforcement responsibility for PWSs under the Safe Drinking Water Act. For purposes of this section, the term ''PWS Official'' refers to the person at your PWS who is able to function as the official spokesperson for the system's Unregulated Contaminant Monitoring Regulation (UCMR) activities; and the term ''PWS Technical Contact'' refers to the person at your PWS who is responsible for the technical aspects of your UCMR activities, such as details concerning sampling and reporting.

(b) *Reporting by all systems.* You must meet the reporting requirements of this paragraph if you meet the applicability criteria in §141.40(a)(1) and (2).

(1) *Where to submit UCMR reporting requirement information.* Some of your reporting requirements are to be fulfilled electronically and others by mail. Information that must be submitted using EPA's electronic data reporting system must be submitted through: *http://water.epa.gov/lawsregs/rulesregs/sdwa/ucmr/ucmr3/reporting.cfm.* Documentation that is required to be mailed can be submitted either: To UCMR Sampling Coordinator, USEPA, Technical Support Center, 26 West Martin Luther King Drive (MS 140), Cincinnati, OH 45268; or by email at *UCMR | Sampling | Coordinator@epa.gov.* In addition, you must notify the public of the availability of unregulated contaminant monitoring data as provided in subpart Q (Public Notification) of this part (40 CFR 141.207). Community Water Systems that detect unregulated contaminants under this monitoring must also address such detections as part of their Consumer Confidence Reports, as provided in subpart O of this part (40 CFR 141.151).

(2) *Contacting EPA if your system does not meet applicability criteria or has a status change.* If you have received a letter from EPA concerning your required monitoring and your system does not meet the applicability criteria for UCMR established in §141.40(a)(1) or (2), or if a change occurs at your system that may affect your requirements under UCMR as defined in §141.40(a)(3) through (5), you must mail or email a letter to EPA, as specified in paragraph (b)(1) of this section. The letter must be from your PWS Official and must include an explanation as to why the UCMR requirements are not applicable to your PWS, or have changed for your PWS, along with the appropriate contact information. EPA will make an applicability determination based on your letter and in consultation with the State when necessary. You are subject to UCMR requirements unless and until you receive a letter from EPA agreeing that you do not meet the applicability criteria.

(c) *Reporting by large systems.* If you serve a population of more than 10,000 people, and meet the applicability criteria in §141.40(a)(2)(i), you must meet the reporting requirements in paragraphs (c)(1) through (8) of this section.

(1) *Contact and zip code information.* You must provide contact information by October 1, 2012, and provide updates within 30 days if this information changes. The contact information must be submitted using EPA's electronic data reporting system, as specified in paragraph (b)(1) of this section, and include the name, affiliation, mailing address, phone number, and email address for your PWS Technical Contact and your PWS Official. In addition, as a one-time reporting requirement, you must report the U.S. Postal Service Zip Code(s) for all areas being served water by your PWS.

(2) *Sampling location and inventory information.* You must provide your sampling location and inventory information by October 1, 2012, using EPA's electronic data reporting system. You must submit, verify or update the following information for each sampling location, or for each approved representative sampling location (as specified in paragraph (c)(3) of this section regarding representative sampling locations): PWS identification (PWSID) code; PWS facility identification code; water source type, sampling point identification code; and sampling point type code; (as defined in Table 1 of paragraph (e) of this section). If this information changes, you must report updates, including new sources and sampling locations that are put in use before or during the PWS' UCMR sampling period, to EPA's electronic data reporting system within 30 days of the change.

(3) *Proposed ground water representative sampling locations.* Some systems that use ground water as a source and have multiple entry points to the distribution system (EPTDSs) may propose monitoring at representative entry point(s), rather than monitor at every EPTDS, as follows:

(i) *Qualifications.* Large PWSs that have EPA- or State-approved alternate EPTDS sampling locations from a previous UCMR cycle, or as provided for under §141.23(a)(1), §141.24(f)(1), or §141.24(h)(1), may submit a copy of documentation from their State or EPA that approves their alternative sampling plan for EPTDSs. PWSs that do not have an approved alternative EPTDS sampling plan may submit a proposal to sample at representative EPTDS(s) rather than at each individual EPTDS if: They use ground water as a source; all of their well sources have either the same treatment or no treatment; and they have multiple EPTDSs from the same source, such as an aquifer. You must submit a copy of the existing alternate EPTDS sampling plan or your representative well proposal, as appropriate, by August 1, 2012, as specified in paragraph (b)(1) of this section.

(ii) *Demonstration.* If you are submitting a proposal to sample at representative EPTDS(s) rather than at each individual EPTDS, you must demonstrate that any EPTDS that you select as representative of the ground water you supply from multiple wells is associated with a well that draws from the same aquifer as the wells it will represent. The proposed well must be representative of the highest annual volume producing and most consistently active wells in the representative array. If that representative well is not in use at the scheduled sampling time, you must select and sample an alternative representative well. You must submit the following information for each proposed representative sampling location: PWSID Code, PWS Facility Identification Code, and Sampling Point Identification Code (as defined in Table 1, paragraph (e) of this section). You must also include documentation to support your proposal that the specified wells are representative of other wells. This documentation can include system-maintained well logs or construction drawings indicating that the representative well(s) is/are at a representative depth, and details of well casings and grouting; data demonstrating relative homogeneity of water quality constituents (e.g., pH, dissolved oxygen, conductivity, iron, manganese) in samples drawn from each well; and data showing that your wells are located in a limited geographic area (e.g., all wells within a 0.5 mile radius) and/or, if available, the hydrogeologic data indicating the time of travel separating the representative well from each of the individual wells it represents (e.g., all wells within a five-year time of travel delineation). Your proposal must be sent in writing to EPA, as specified in paragraph (b)(1) of this section. You must also provide a copy of this information to the State, unless otherwise directed by the State. Information about the actual or potential occurrence or non-occurrence of contaminants in an individual well, or a well's vulnerability to contamination, must not be used as a basis for selecting a representative well.

(iii) *Approval*. EPA or the State (as specified in the Partnership Agreement reached between the State and EPA) will review your proposal, coordinate any necessary changes with you, and approve the final list of EPTDSs where you will be required to monitor. Your plan will not be final until you receive written approval from EPA or the State.

(4) *Contacting EPA if your PWS has not been notified of requirements*. If you believe you are subject to UCMR requirements, as defined in §141.40(a)(1) and (2)(i), and you have not been notified by either EPA or your State by October 1, 2012, you must send a letter to EPA, as specified in paragraph (b)(1) of this section. The letter must be from your PWS Official and must include an explanation as to why the UCMR requirements are applicable to your system along with the appropriate contact information. A copy of the letter must also be submitted to the State, as directed by the State. EPA will make an applicability determination based on your letter, and in consultation with the State when necessary, and will notify you regarding your applicability status and required sampling schedule. However, if your PWS meets the applicability criteria specified in §141.40(a)(2)(i), you are subject to the UCMR monitoring and reporting requirements, regardless of whether you have been notified by the State or EPA.

(5) *Notifying EPA if your PWS cannot sample according to schedule*—(i) *General rescheduling notification requirements*. Large systems may change their Assessment Monitoring (List 1) or Screening Survey (List 2) schedules up to October 1, 2012, using EPA's electronic data reporting system, as specified in paragraph (b)(1) of this section. After these dates have passed, if your PWS cannot sample according to your assigned sampling schedule (e.g., because of budget constraints, or if a sampling location will be closed during the scheduled month of monitoring), you must mail or email a letter to EPA, as specified in paragraph (b)(1) of this section, prior to the scheduled sampling date. You must include an explanation of why the samples cannot be taken according to the assigned schedule, and you must provide the alternative schedule you are requesting. You are subject to your assigned UCMR sampling schedule or the schedule that you revised on or before October 1, 2012, unless and until you receive a letter from EPA specifying a new schedule.

(ii) *Exceptions to the rescheduling notification requirements*. For ground water sampling, if the second round of sampling will be completed five to seven months after the first sampling event, as specified in Table 2 of §141.40(a)(4)(i)(B), no notification to EPA is required. If any ground water sampling location will be non-operational for more than one month before and one month after the month in which the second sampling event is scheduled (*i.e.*, it is not possible for you to sample within the five to seven month window), you must notify EPA, as specified in paragraph (b)(1) of this section, explaining why the schedule cannot be met. You must comply with any modified schedule provided by EPA.

(6) *Reporting monitoring results.* For each sample, you must report all data elements specified in Table 1 of paragraph (e) of this section, using EPA's electronic data reporting system. You also must report any changes, relative to what is currently posted, made to data elements 1 through 6 to EPA, in writing, explaining the nature and purpose of the proposed change, as specified in paragraph (b)(1) of this section.

(i) *Electronic reporting system.* You are responsible for ensuring that the laboratory conducting the analysis of your unregulated contaminant monitoring samples (your laboratory) posts the analytical results to EPA's electronic reporting system. You are also responsible for reviewing, approving, and submitting those results to EPA.

(ii) *Reporting schedule.* You must ensure that your laboratory posts the data to EPA's electronic data reporting system within 120 days from the sample collection date (sample collection must occur as specified in §141.40(a)(4)). You have 60 days from when the laboratory posts the data in EPA's electronic data reporting system to review, approve, and submit the data to the State and EPA, at the Web address specified in paragraph (b)(1) of this section. If you do not electronically approve and submit the laboratory data to EPA within 60 days of the laboratory's posting data to EPA's electronic reporting system, the data will be considered approved by you and available for State and EPA review.

(7) *Only one set of results accepted.* If you report more than one set of valid results for the same sampling location and the same sampling event (for example, because you have had more than one laboratory analyze replicate samples collected under §141.40(a)(5), or because you have collected multiple samples during a single monitoring event at the same sampling location), EPA will use the highest of the reported values as the official result.

(8) *No reporting of previously collected data.* You cannot report previously collected data to meet the testing and reporting requirements for the contaminants listed in §141.40(a)(3). All analyses must be performed by laboratories approved by EPA to perform UCMR analyses using the analytical methods specified in Table 1 of §141.40(a)(3) and using samples collected according to §141.40(a)(4). Such requirements preclude the possibility of ''grandfathering'' previously collected data.

(d) *Reporting by small systems.* If you serve a population of 10,000 or fewer people, and you are notified that you have been selected for UCMR monitoring, your reporting requirements will be specified within the materials that EPA sends you, including a request for contact information, and a request for information associated with the sampling kit.

(1) *Contact and zip code information.* EPA will send you a notice requesting contact information for key individuals at your system, including name, affiliation, mailing address, phone number and email address. These individuals include your PWS Technical Contact and your PWS Official. You are required to provide this contact information within 90 days of receiving the notice from EPA as specified in paragraph (b)(1) of this section. If this contact information changes, you also must provide updates within 30 days of the change, as specified in paragraph (b)(1) of this section. In addition, as a one-time reporting requirement, you must report the U.S. Postal Service Zip Code(s) for all areas being served water by your PWS.

(2) *Reporting sampling information.* You must record all data elements listed in Table 1 of paragraph (e) of this section on each sample form and sample bottle provided to you by the UCMR Sampling Coordinator. You must send this information as specified in the instructions of your sampling kit, which will include the due date and return address. You must report any changes made in data elements 1 through 6 by mailing or emailing an explanation of the nature and purpose of the proposed change to EPA, as specified in paragraph (b)(1) of this section.

(e) *Data elements.* Table 1 defines the data elements that must be provided with UCMR sample results.

TABLE 1—UNREGULATED CONTAMINANT MONITORING REPORTING REQUIREMENTS

Data element	Definition
1. Public Water System Identification (PWSID) Code.	The code used to identify each PWS. The code begins with the standard 2-character postal State abbreviation or Region code; the remaining 7 numbers are unique to each PWS in the State. The same identification code must be used to represent the PWS identification for all current and future UCMR monitoring.
2. Public Water System Facility Identification Code	An identification code established by the State or, at the State's discretion, by the PWS, following the format of a 5-digit number unique within each PWS for each applicable facility (*i.e.*, for each source of water, treatment plant, distribution system, or any other facility associated with water treatment or delivery). The same identification code must be used to represent the facility for all current and future UCMR monitoring.

TABLE 1—UNREGULATED CONTAMINANT MONITORING REPORTING REQUIREMENTS—Continued

Data element	Definition
3. Water Source Type	The type of source water that supplies a water system facility. Systems must report one of the following codes for each sampling location: **SW** = surface water (to be reported for water facilities that are served all or in part by a surface water source at any time during the twelve-month period). **GW** = ground water (to be reported for water facilities that are served entirely by a ground water source). **GU** = ground water under the direct influence of surface water (to be reported for water facilities that are served all or in part by ground water under the direct influence of surface water at any time during the twelve-month sampling period), and are not served at all by surface water during this period.
4. Sampling Point Identification Code	An identification code established by the State, or at the State's discretion, by the PWS, that uniquely identifies each sampling point. Each sampling code must be unique within each applicable facility, for each applicable sampling location (*i.e.*, entry point to the distribution system or distribution system sample at maximum residence time). The same identification code must be used to represent the sampling location for all current and future UCMR monitoring.
5. Sampling Point Type Code	A code that identifies the location of the sampling point as either: **EP** = entry point to the distribution system. **MR** = distribution system sample at maximum residence time.
6. Disinfectant Type	All of the disinfectants that have been added to the water being sampled. To be reported by systems for each sampling point, with possible choices being: CLGA= Gaseous chlorine. CLOF = Offsite Generated Hypochlorite (stored as a liquid form). CLON = Onsite Generated Hypochlorite (no storage). CAGC = Chloramine (formed from gaseous chlorine). CAOF = Chloramine (formed from offsite hypochlorite). CAON = Chloramine (formed from onsite hypochlorite). CLDO = Chlorine dioxide. OZON = Ozone. ULVL = Ultraviolet Light. OTHD = All Other Types of Disinfectant. NODU = No Disinfectant Used.
7. Sample Collection Date	The date the sample is collected, reported as 4-digit year, 2-digit month, and 2-digit day.
8. Sample Identification Code	An alphanumeric value up to 30 characters assigned by the laboratory to uniquely identify containers, or groups of containers, containing water samples collected at the same sampling location for the same sampling date.
9. Contaminant	The unregulated contaminant for which the sample is being analyzed.
10. Analytical Method Code	The identification code of the analytical method used.
11. Sample Analysis Type	The type of sample collected and/or prepared, as well as the fortification level. Permitted values include: **FS** = field sample; sample collected and submitted for analysis under this rule. **LFSM** = laboratory fortified sample matrix; a UCMR field sample with a known amount of the contaminant of interest added. **LFSMD** = laboratory fortified sample matrix duplicate; duplicate of the laboratory fortified sample matrix. **CF** = concentration fortified; reported with sample analysis types LFSM and LFSMD, the concentration of a known contaminant added to a field sample.
12. Analytical Results—Sign	A value indicating whether the sample analysis result was: (<) ''less than'' means the contaminant was not detected, or was detected at a level below the Minimum Reporting Level. (=) ''equal to'' means the contaminant was detected at the level reported in ''Analytical Result—Value.''
13. Analytical Result—Value	The actual numeric value of the analytical results for: field samples; laboratory fortified matrix samples; laboratory fortified sample matrix duplicates; and concentration fortified.
14. Laboratory Identification Code	The code, assigned by EPA, used to identify each laboratory. The code begins with the standard two-character State postal abbreviation; the remaining five numbers are unique to each laboratory in the State.
15. Sample Event Code	A code assigned by the PWS for each sample event. This will associate samples with the PWS monitoring plan to allow EPA to track compliance and completeness. Systems must assign the following codes: **SE1** = represents samples collected to meet the UCMR monitoring requirement for the first sampling period (all source types). **SE2** = represents samples collected to meet the UCMR monitoring requirement for the second sampling period (all source types).

TABLE 1—UNREGULATED CONTAMINANT MONITORING REPORTING REQUIREMENTS—Continued

Data element	Definition
	SE3 = represents samples collected to meet the UCMR monitoring requirement for the third sampling period (surface water and ground water under the direct influence of surface water (GWUDI) sources only). **SE4** = represents samples collected to meet the UCMR monitoring requirement for the fourth sampling period (surface water and GWUDI sources only).

[72 FR 389, Jan. 4, 2007, as amended at 77 FR 26096, May 2, 2012]

Subpart E—Special Regulations, Including Monitoring Regulations and Prohibition on Lead Use

§141.40 Monitoring requirements for unregulated contaminants.

(a) *General applicability.* This section specifies the monitoring and quality control requirements that must be followed if you own or operate a public water system (PWS) that is subject to the Unregulated Contaminant Monitoring Regulation (UCMR), as specified in paragraphs (a)(1) and (2) of this section. In addition, this section specifies the UCMR requirements for State and Tribal participation. For the purposes of this section, PWS ''population served,'' ''State,'' '' PWS Official,'' ''PWS Technical Contact,'' and ''finished water'' apply as defined in §141.35(a). The determination of whether a PWS is required to monitor under this rule is based on the type of system (e.g., community water system, non-transient non-community water system, etc.), and its retail population, as indicated by SDWIS/Fed on December 31, 2010.

(1) *Applicability to transient non-community systems.* If you own or operate a transient non-community water system, and you are notified by your State or EPA, you must permit the State, EPA or their contractors to collect samples for the contaminants specified on List 3 of Table 1, in paragraph (a)(3) of this section.

(2) *Applicability to community water systems and non-transient non-community water systems*—(i) *Large systems.* If you own or operate a retail PWS (other than a transient non-community system) that serves more than 10,000 people, you must monitor according to the specifications in this paragraph (a)(2)(i). If you believe that your applicability status is different than EPA has specified in the notification letter that you received, or if you are subject to UCMR requirements and you have not been notified by either EPA or your State, you must report to EPA, as specified in §141.35(b)(2) or (c)(4).

(A) *Assessment Monitoring.* You must monitor for the unregulated contaminants on List 1 and Total Chromium per Table 1, UCMR Contaminant List, in paragraph (a)(3) of this section. If you serve a population of more than 10,000 people, you are required to perform this monitoring regardless of whether you have been notified by the State or EPA.

(B) *Screening Survey.* You must monitor for the unregulated contaminants on List 2 (Screening Survey) of Table 1, as specified in paragraph (a)(3) of this section, if your system serves 10,001 to 100,000 people and you are notified by EPA or your State that you are part of the State Monitoring Plan for Screening Survey testing. If your system serves more than 100,000 people, you are required to conduct this Screening Survey testing regardless of whether you have been notified by the State or EPA.

(C) *Pre-Screen Testing.* You must monitor for the unregulated contaminants on List 3 of Table 1, in paragraph (a)(3) of this section, if notified by your State or EPA that you are part of the Pre-Screen Testing.

(ii) *Small systems.* Small PWSs, as defined in this paragraph, will not be selected to monitor for any more than one of the three monitoring lists provided in Table 1, UCMR Contaminant List, in paragraph (a)(3) of this section. EPA will provide sample containers, provide pre-paid air bills for shipping the sampling materials, conduct the laboratory analysis, and report and review monitoring results for all small systems selected to conduct monitoring under paragraphs (a)(2)(ii)(A) through (C) of this section. If you own or operate a PWS that serves 10,000 or fewer people you must monitor as follows:

(A) *Assessment Monitoring.* You must monitor for the unregulated contaminants on List 1 and Total Chromium per Table 1, in paragraph (a)(3) of this section, if you are notified by your State or EPA that you are part of the State Monitoring Plan for Assessment Monitoring.

(B) *Screening Survey.* You must monitor for the unregulated contaminants on List 2 of Table 1, in paragraph (a)(3) of this section, if notified by your State or EPA that you are part of the State Monitoring Plan for the Screening Survey.

(C) *Pre-Screen Testing.* You must allow EPA or its representative to collect samples to support monitoring for the unregulated contaminants on List 3 of Table 1, in paragraph (a)(3) of this section, if you are notified by your State or EPA that you are part of the State Monitoring plan for Pre-Screen Testing. In addition, you must permit the collection of samples as necessary for EPA to perform analysis for total coliforms, *E. coli,* bacteriophage, *Enterococci* and aerobic spores.

(3) *Analytes to be monitored.* Lists 1, 2, and 3 of unregulated contaminants and total chromium monitoring are provided in the following table:

TABLE 1—UCMR CONTAMINANT LIST

1-Contaminant	2-CAS Registry No.	3-Analytical methods [a]	4-Minimum reporting level [b]	5-Sampling location [c]	6-Period during which monitoring to be completed
List 1: Assessment Monitoring Chemical Contaminants					
Volatile Organic Compounds					
1,2,3-trichloropropane	96–18–4	EPA 524.3	0.03 µg/L	EPTDS	1/1/2013–12/31/2015
1,3-butadiene	106–99–0	EPA 524.3	0.1 µg/L	EPTDS	1/1/2013–12/31/2015
chloromethane	74–87–3	EPA 524.3	0.2 µg/L	EPTDS	1/1/2013–12/31/2015
1,1-dichloroethane	75–34–3	EPA 524.3	0.03 µg/L	EPTDS	1/1/2013–12/31/2015
bromomethane	74–83–9	EPA 524.3	0.2 µg/L	EPTDS	1/1/2013–12/31/2015
chlorodifluoromethane (HCFC–22)	75–45–6	EPA 524.3	0.08 µg/L	EPTDS	1/1/2013–12/31/2015
bromochloromethane (Halon 1011)	74–97–5	EPA 524.3	0.06 µg/L	EPTDS	1/1/2013–12/31/2015
Synthetic Organic Compound					
1,4-dioxane	123–91–1	EPA 522	0.07 µg/L	EPTDS	1/1/2013–12/31/2015
Metals					
vanadium	7440–62–2	EPA 200.8, ASTM D5673–10, SM 3125.	0.2 µg/L	EPTDS and DSMRT.	1/1/2013–12/31/2015
molybdenum	7439–98–7	EPA 200.8, ASTM D5673–10, SM 3125.	1. µg/L	EPTDS and DSMRT.	1/1/2013–12/31/2015
cobalt	7440–48–4	EPA 200.8, ASTM D5673–10, SM 3125.	1. µg/L	EPTDS and DSMRT.	1/1/2013–12/31/2015
strontium	7440–24–6	EPA 200.8, ASTM D5673–10, SM 3125.	0.3 µg/L	EPTDS and DSMRT.	1/1/2013–12/31/2015
Chromium-6					
chromium-6[d]	18540–29–9	EPA 218.7	0.03 µg/L	EPTDS and DSMRT.	1/1/2013–12/31/2015

TABLE 1—UCMR CONTAMINANT LIST—Continued

1-Contaminant	2-CAS Registry No.	3-Analytical methods [a]	4-Minimum reporting level [b]	5-Sampling location [c]	6-Periodd during which monitoring to be completed
Oxyhalide Anion					
chlorate	14866–68–3	EPA 300.1, ASTM D 6581–08, SM 4110D.	20 µg/L	EPTDS and DSMRT.	1/1/2013–12/31/2015
Perfluorinated Compounds					
perfluorooctanesulfonic acid (PFOS)	1763–23–1	EPA 537	0.04 µg/L	EPTDS	1/1/2013–12/31/2015
perfluorooctanoic acid (PFOA)	335–67–1	EPA 537	0.02 µg/L	EPTDS	1/1/2013–12/31/2015
perfluorononanoic acid (PFNA)	375–95–1	EPA 537	0.02 µg/L	EPTDS	1/1/2013–12/31/2015
perfluorohexanesulfonic acid (PFHxS).	355–46–4	EPA 537	0.03 µg/L	EPTDS	1/1/2013–12/31/2015
perfluoroheptanoic acid (PFHpA)	375–85–9	EPA 537	0.01 µg/L	EPTDS	1/1/2013–12/31/2015
perfluorobutanesulfonic acid (PFBS)	375–73–5	EPA 537	0.09 µg/L	EPTDS	1/1/2013–12/31/2015
List 2: Screening Survey					
Hormones					
17-b-estradiol	50–28–2	EPA 539	0.0004 µg/L.	EPTDS	1/1/2013–12/31/2015
17-a-ethynylestradiol	57–63–6	EPA 539	0.0009 µg/L.	EPTDS	1/1/2013–12/31/2015
estriol	50–27–1	EPA 539	0.0008 µg/L.	EPTDS	1/1/2013–12/31/2015
equilin	474–86–2	EPA 539	0.004 µg/L.	EPTDS	1/1/2013–12/31/2015
estrone	53–16–7	EPA 539	0.002 µg/L.	EPTDS	1/1/2013–12/31/2015
testosterone	58–22–0	EPA 539	0.0001 µg/L.	EPTDS	1/1/2013–12/31/2015
4-androstene-3,17-dione	63–05–8	EPA 539	0.0003 µg/L.	EPTDS	1/1/2013–12/31/2015
List 3: Pre-Screen Testing [e]ROW RUL='s*'≤					
Microbiological Contaminants					
enteroviruses	N/A	N/A	N/A	EPTDS	1/1/2013–12/31/2015
noroviruses	N/A	N/A	N/A	EPTDS	1/1/2013–12/31/2015
Total Chromium Monitoring					
total chromium	N/A	EPA 200.8, ASTM D5673–10, SM 3125.	0.2 µg/L	EPTDS and DSMRT.	1/1/2013–12/31/2015

Column headings are:

1—Contaminant: The name of the contaminant to be analyzed.

2—CAS (Chemical Abstract Service) Registry Number or Identification Number: A unique number identifying the chemical contaminants.

3—Analytical Methods: Method numbers identifying the methods that must be used to test the contaminants. For List 3, analyses will only be performed by laboratories under contract to EPA.

4—Minimum Reporting Level: The value and unit of measure at or above which the concentration of the contaminant must be measured using the approved analytical methods. If EPA determines, after the first six months of monitoring, that the MRLs specified in UCMR 3 result in excessive resampling, EPA will establish alternate MRLs and will notify affected PWSs and laboratories of the new MRLs. For List 3, minimum reporting level is based on volume of water filtered and PCR amplification level.

5—Sampling Location: The locations within a PWS at which samples must be collected.

6—Period During Which Monitoring to be Completed: The time period during which the sampling and testing will occur for the indicated contaminant.

[a] The analytical procedures shall be performed in accordance with the documents associated with each method, see paragraph (c) of this section.

[b] The minimum reporting level (MRL) is the minimum concentration of each analyte that must be reported to EPA.

[c] Sampling must occur at entry points to the distribution system (EPTDSs) after treatment is applied that represent each non-emergency water source in routine use over the 12-month period of monitoring. Systems that purchase water with multiple connections from the same wholesaler may select one representative connection from that wholesaler. This EPTDS sampling location must be representative of the highest annual volume connections. If the connection selected as the representative EPTDS is not available for sampling, an alternate highest volume representative connection must be sampled. See 40 CFR 141.35(c)(3) for an explanation of the requirements related to use of representative ground water EPTDSs. Sampling for total chromium, chromium-6, cobalt, molybdenum, strontium, vanadium, and chlorate must be conducted at distribution system maximum residence time (DSMRT) sampling locations. DSMRT is defined as an active point (*i.e.*, a location that currently provides water to customers) in the distribution system where the water has been in the system the longest relative to the EPTDS.

[d] Chromium-6 will be measured as soluble chromate ion (CAS Registry Number 13907–45–4).

[e] EPA will collect the samples from List 3 Pre-Screen Testing sampling locations.

(4) *Sampling requirements*—(i) *Large systems*. If you serve more than 10,000 people and meet the UCMR applicability criteria specified in paragraph (a)(2)(i) of this section, you must comply with the requirements specified in paragraphs (a)(4)(i)(A) through (I) of this section. Your samples must be collected according to the schedule that you are assigned by EPA or your State, or the schedule that you revised using EPA's electronic data reporting system on or before October 1, 2012. Your schedule must follow both the timing and frequency of monitoring specified in Tables 1 and 2 of this section.

(A) *Monitoring period.* You must collect the samples in one continuous 12-month period for List 1 Assessment Monitoring, and, if applicable, for List 2 Screening Survey, or List 3 Pre-Screen Testing, during the time frame indicated in column 6 of Table 1, in paragraph (a)(3) of this section. EPA or your State will specify the month(s) and year(s) in which your monitoring must occur. As specified in §141.35(c)(5), you must contact EPA if you believe you cannot conduct monitoring according to your schedule.

(B) *Frequency.* You must collect the samples within the time frame and according to the frequency specified by contaminant type and water source type for each sampling location, as specified in Table 2, in this paragraph. For the second or subsequent round of sampling, if a sample location is non-operational for more than one month before and one month after the scheduled sampling month (*i.e.*, it is not possible for you to sample within the window specified in Table 2, in this paragraph), you must notify EPA as specified in §141.35(c)(5) to reschedule your sampling.

TABLE 2—MONITORING FREQUENCY BY CONTAMINANT AND WATER SOURCE TYPES

Contaminant type	Water source type	Time frame	Frequency
Chemical	Surface water or ground water under the direct influence of surface water (GWUDI) (includes all sampling locations for which some or all of the water comes from a surface water or GWUDI source at any time during the 12 month monitoring period).	12 months	You must monitor for 4 consecutive quarters. Sample events must occur 3 months apart. (Example: If first monitoring is in January, the second monitoring must occur any time in April, the third any time in July and the fourth any time in October.)
	Ground water	12 months	You must monitor twice in a consecutive 12-month period. Sample events must occur 5–7 months apart.
Microbiological	Ground water	12 months	You must monitor twice in a consecutive 12-month period. Sample events must occur 5–7 months apart.

(C) *Location.* You must collect samples for each List 1 Assessment Monitoring contaminant, and, if applicable, for each List 2 Screening Survey, or List 3 Pre-Screen Testing contaminant, as specified in Table 1, in paragraph (a)(3) of this section. Samples must be collected at each sample point that is specified in column 5 and footnote c of Table 1, in paragraph (a)(3) of this section. If you are a ground water system with multiple EPTDSs, and you request and receive approval from EPA or the State for sampling at representative EPTDS(s), as specified in §141.35(c)(3), you must collect your samples from the approved representative sampling location(s). Systems conducting Assessment Monitoring must also sample for total chromium, chromium-6, cobalt, molybdenum, strontium, vanadium, and chlorate at the location that represents the maximum residence time in the distribution system (DSMRT). DSMRT is defined as an active point (*i.e.*, a location that currently provides water to customers) in the distribution system where the water has been in the system the longest relative to the EPTDS.

(D) *Sampling instructions.* For each List 1 Assessment Monitoring contaminant, and, if applicable, for each List 2 Screening Survey, or List 3 Pre-Screen Testing contaminant, you must follow the sampling procedure for the method specified in column 3 of Table 1, in paragraph (a)(3) of this section. In addition, you must not composite (that is, combine, mix, or blend) the samples; you must collect and preserve each sample separately.

(E) *Sample collection and shipping time.* If you must ship the samples for analysis, you must collect the samples early enough in the day to allow adequate time to send the samples for overnight delivery to the laboratory. You should not collect samples on Friday, Saturday, or Sunday because sampling on these days may not allow samples to be shipped and received at the laboratory at the required temperature, unless you have made special arrangements with your laboratory to receive the samples.

(F) *Analytical methods.* For each contaminant, you must use the respective analytical methods for List 1, and, if applicable, for List 2, or List 3 that are specified in column 3 of Table 1, in paragraph (a)(3) of this section; report values at or above the minimum reporting levels for List 1, and, if applicable, for List 2 Screening Survey, or List 3 Pre-Screen Testing, that are specified in column 4 of Table 1, in paragraph (a)(3) of this section; and conduct the quality control procedures specified in paragraph (a)(5) of this section.

(G) *Laboratory errors or sampling deviations.* If the laboratory data do not meet the required QC criteria, as specified in paragraph (a)(5) of this section, or you do not follow the required sampling procedures, as specified in paragraphs (a)(4) of this section, you must resample within 30 days of being informed or becoming aware of these facts. This resampling is not for the purpose of confirming previous results, but to correct the sampling or laboratory error. All systems must report the results obtained from the first sampling for each sampling period, except for cases of sampling or laboratory errors. For the purposes of this rule, no samples are to be recollected for the purposes of confirming the results observed in a previous sampling.

(H) *Analysis.* For the List 1 contaminants, and, if applicable, List 2 Screening Survey, or List 3 Pre-Screen Testing contaminants, identified in Table 1, paragraph (a)(3) of this section, you must arrange for testing by a laboratory that has been approved by EPA according to requirements in paragraph (a)(5)(ii) of this section.

(I) *Review and reporting of results.* After you have received the laboratory results, you must review, approve, and submit the system information, and sample collection data and test results. You must report the results as provided in §141.35(c)(6).

(ii) *Small systems.* If you serve 10,000 or fewer people and are notified that you are part of the State Monitoring Plan for Assessment Monitoring, Screening Survey or Pre-Screen monitoring, you must comply with the requirements specified in paragraphs (a)(4)(i)(A) through (H) of this section. If EPA or the State informs you that they will be collecting your UCMR samples, you must assist them in identifying the appropriate sampling locations and in collecting the samples.

(A) *Monitoring period and frequency.* You must collect samples at the times specified for you by the State or EPA. Your schedule must follow both the timing of monitoring specified in Table 1, List 1, and, if applicable, List 2, or List 3, and the frequency of monitoring in Table 2 of this section.

(B) *Location.* You must collect samples at the locations specified for you by the State or EPA.

(C) *Sample kits.* You must store and maintain the sample collection kits sent to you by the UCMR Sampling Coordinator in accordance with the kit's instructions. The sample kit will include all necessary containers, packing materials and cold packs, instructions for collecting the sample and sample treatment (such as dechlorination or preservation), report forms for each sample, contact name and telephone number for the laboratory, and a prepaid return shipping docket and return address label. If any of the materials listed in the kit's instructions are not included in the kit or arrive damaged, you must notify the UCMR Sampling

Coordinator who sent you the sample collection kits.

(D) *Sampling instructions.* You must comply with the instructions sent to you by the State or EPA concerning the use of containers, collection (how to fill the sample bottle), dechlorination and/or preservation, and sealing and preparation of sample and shipping containers for shipment. You must not composite (that is, combine, mix, or blend) the samples. You also must collect, preserve, and test each sample separately. You must also comply with the instructions sent to you by the UCMR Sampling Coordinator concerning the handling of sample containers for specific contaminants.

(E) *Sampling deviations.* If you do not collect a sample according to the instructions provided to you for a listed contaminant, you must report the deviation within 7 days of the scheduled monitoring on the sample reporting form, as specified in §141.35(d)(2). You must resample following instructions that you will be sent from the UCMR Sampling Coordinator or State. A copy of the form must be sent to the laboratory with the recollected samples, and to the UCMR Sampling Coordinator.

(F) *Duplicate samples.* EPA will select a subset of systems in the State Monitoring Plan that must collect duplicate samples for quality control. If your system is selected, you will receive two sample kits for an individual sampling location that you must use. You must use the same sampling protocols for both sets of samples, following the instructions in the duplicate sample kit.

(G) *Sampling forms.* You must completely fill out each of the sampling forms and bottles sent to you by the UCMR Sampling Coordinator, including data elements listed in §141.35(e) for each sample, as specified in §141.35(d)(2). You must sign and date the sampling forms.

(H) *Sample collection and shipping.* You must collect the samples early enough in the day to allow adequate time to send the samples for overnight delivery to the laboratory. You should not collect samples on Friday, Saturday, or Sunday because sampling on these days may not allow samples to be shipped and received at the laboratory at the required temperature unless you have made special arrangements with EPA for the laboratory to receive the samples. Once you have collected the samples and completely filled in the sampling forms, you must send the samples and the sampling forms to the laboratory designated on the air bill.

(5) *Quality control requirements.* If your system serves more than 10,000 people, you must ensure that the quality control requirements listed below are met during your sampling procedures and by the laboratory conducting your analyses. You must also ensure that all method quality control procedures and all UCMR quality control procedures are followed.

(i) *Sample collection/preservation.* You must follow the sample collection and preservation requirements for the specified method for each of the contaminants in Table 1, in paragraph (a)(3) of this section. These requirements specify sample containers, collection, dechlorination, preservation, storage, sample holding time, and extract storage and/or holding time that you must assure that the laboratory follow.

(ii) *Laboratory approval for Lists 1, List 2 and List 3.* To be approved to conduct UCMR testing, the laboratory must be certified under §141.28 for one or more compliance analyses; demonstrate for each analytical method it plans to use for UCMR testing that it can meet the Initial Demonstration of Capability (IDC) requirements detailed in the analytical methods specified in column 3 of Table 1, in paragraph (a)(3) of this section; and successfully participate in the UCMR Proficiency Testing (PT) Program administered by EPA for each analytical method it plans to use for UCMR testing. UCMR laboratory approval decisions will be granted on an individual method basis for the methods listed in column 3 of Table 1 in paragraph (a)(3) of this section for List 1, List 2, and List 3 contaminants. Laboratory approval is contingent upon the capability of the laboratory to post monitoring data to the EPA electronic data reporting system. To participate in the UCMR Laboratory Approval Program, the laboratory must complete and submit the necessary registration forms by August 1, 2012. Correspondence must be addressed to: UCMR Laboratory Approval Coordinator, USEPA, Technical Support Center, 26 West Martin Luther King Drive, (MS 140), Cincinnati, OH 45268; or emailed to EPA at: *UCMR* I *Sampling* I *Coordinator@epa.gov.*

(iii) *Minimum Reporting Level.* The MRL is an estimate of the quantitation limit. Assuming good instrumentation and experienced analysts, an MRL is achievable, with 95% confidence, by 75% of laboratories nationwide.

(A) Validation of laboratory performance. Your laboratory must be capable of quantifying each contaminant listed in Table 1, at or below the MRL specified in column 4 of Table 1, in paragraph (a)(3) of this section. You must ensure that the laboratory completes and has on file and available for your inspection, records of two distinct procedures. First, your laboratory must have conducted an IDC involving replicate analyses at or below the MRL as described in this paragraph. Second, for each day that UCMR analyses are conducted by your laboratory, a validation of its ability to quantify each contaminant, at or below the MRL specified in column 4 of Table 1, in paragraph (a)(3) of this section, following the procedure listed in paragraph (a)(5)(iii)(B) of this section, must be performed. The procedure for initial validation of laboratory performance at or below the MRL is as follows:

(*1*) All laboratories performing analysis under UCMR must demonstrate that they are capable of meeting data quality objectives at or below the MRL listed in Table 1, column 4, in paragraph (a)(3) of this section.

(*2*) The MRL, or any concentration below the MRL, at which performance is being evaluated, must be contained within the range of calibration. The calibration curve regression model and the range of calibration levels that are used in these performance validation steps must be used in all routine sample analyses used to comply with this regulation. Only straight line or quadratic regression models are allowed. The use of either weighted or unweighted models is permitted. The use of cubic regression models is not permitted.

(*3*) Replicate analyses of at least seven (7) fortified samples in reagent water must be performed at or below the MRL for each analyte, and must be processed through the entire method procedure (*i.e.*, including extraction, where applicable, and with all preservatives).

(*4*) A prediction interval of results (PIR), which is based on the estimated arithmetic mean of analytical results and the estimated sample standard deviation of measurement results, must be determined by Equation 1:

$$\text{Equation 1} \qquad \mathrm{PIR} = \mathrm{Mean} \pm s \times t_{(df,\ 1-\alpha/2)} \times \sqrt{1+\frac{1}{n}}$$

Where:

t is the Student's t value with df degrees of freedom and confidence level (1–a),

s is the sample standard deviation of n replicate samples fortified at the MRL,

n is the number of replicates.

(*5*) The values needed to calculate the PIR using Equation 1 are: Number of replicates (n); Student's t value with a two-sided 99% confidence level for n number of replicates; the average (mean) of at least seven replicates; and the sample standard deviation. Factor 1 is referred to as the Half Range PIR (HR_{PIR}).

$$HR_{PIR} = s \times t_{(df,\ 1-\alpha/2)} \times \sqrt{1+\frac{1}{n}}$$

For a certain number of replicates and for a certain confidence level in Student's t, this factor

$$C = t_{(df,\ 1-\alpha/2)} \times \sqrt{1+\frac{1}{n}}$$

is constant, and can be tabulated according to replicate number and confidence level for the Student's t. Table 3 in this paragraph lists the constant factor (*C*) for replicate sample numbers 7 through 10 with a confidence level of 99% for Student's *t*.

(*6*) The HRPIR is calculated by Equation 2:

$$\text{Equation 2} \qquad HR_{PIR} = s \times C$$

(*7*) The PIR is calculated by Equation 3:

$$\text{Equation 3} \qquad PIR = \text{Mean} \pm HR_{PIR}$$

TABLE 3—THE CONSTANT FACTOR (C) TO BE MULTIPLIED BY THE STANDARD DEVIATION TO DETERMINE THE HALF RANGE INTERVAL OF THE PIR (STUDENT'S t 99% CONFIDENCE LEVEL)[A]

Replicates	Degrees of freedom	Constant factor (C) to be multiplied by the standard deviation
7	6	3.963
8	7	3.711
9	8	3.536
10	9	3.409

[a] The critical *t*-value for a two-sided 99% confidence interval is equivalent to the critical *t*-value for a one-sided 99.5% confidence interval, due to the symmetry of the *t*-distribution. PIR = Prediction Interval of Results.

(*8*) The lower and upper result limits of the PIR must be converted to percent recovery of the concentration being tested. To pass criteria at a certain level, the PIR lower recovery limits cannot be lower than the lower recovery limits of the QC interval (50%), and the PIR upper recovery limits cannot be greater than the upper recovery limits of the QC interval (150%). When either of the PIR recovery limits falls outside of either bound of the QC interval of recovery (higher than 150% or less than 50%), laboratory performance is not validated at the concentration evaluated. If the PIR limits are contained within both bounds of the QC interval, laboratory performance is validated for that analyte.

(B) Quality control requirements for validation of laboratory performance at or below the MRL.

(*1*) You must ensure that the calibration curve regression model and that the range of calibration levels that are used in these performance validation steps are used in future routine sample analysis. Only straight line or quadratic regression models are allowed. The use of either weighted or unweighted models is permitted. The use of cubic regression models is not permitted.

(*2*) You must ensure, once your laboratory has performed an IDC as specified in each analytical method (demonstrating that DQOs are met at or below an MRL), that a daily performance check is performed for each analyte and method. A single laboratory blank, fortified at or below the MRL for each analyte, must be processed through the entire method procedure. The measured concentration for each analyte must be converted to a percent recovery, and if the recovery is within 50%–150% (inclusive), the daily performance of the laboratory has been validated. The results for any analyte for which 50%–150% recovery cannot be demonstrated during the daily check are not valid. Laboratories may elect to re-run the daily performance check sample if the performance for any analyte or analytes cannot be validated. If performance is validated for these analytes, the laboratory performance is considered validated. Alternatively, the laboratory may re-calibrate and repeat the performance validation process for all analytes.

(iv) *Laboratory fortified sample matrix and laboratory fortified sample matrix duplicate.* You must ensure that your laboratory prepares and analyzes the Laboratory Fortified Sample Matrix (LFSM) sample for accuracy and Laboratory Fortified Sample Matrix Duplicate (LFSMD) samples for precision to determine method accuracy and precision for all contaminants in Table 1, in paragraph (a)(3) of this section. LFSM/LFSMD samples must be prepared using a sample collected and analyzed in accordance with UCMR requirements and analyzed at a frequency of 5% (or 1 LFSM/LFSMD set per every 20 samples) or with each sample batch, whichever is more frequent. In addition, the LFSM/LFSMD fortification concentrations must be alternated between a low-level fortification and mid-level fortification approximately 50% of the time. (For example: A set of 40 samples will require preparation and analysis of 2 LFSM/LFSMD paired samples. The first LFSM/LFSMD paired sample set must be fortified at either the low-level or mid-level, and the second LFSM/LFSMD paired sample set must be fortified with the other standard, either the low-level or mid-level, whichever was not used for the initial LFSM/LFSMD paired sample set.) The low-level LFSM/LFSMD fortification concentration must be within ±50% of the MRL for each contaminant (e.g., for an MRL of 1 μg/L the acceptable fortification levels must be between 0.5 μg/L and 1.5 μg/L). The mid-level LFSM/LFSMD fortification concentration must be within ±20% of the mid-level calibration standard for each contaminant, and is to represent, where possible and where the laboratory has data from previously analyzed samples, an approximate average concentration observed in previous analyses of that analyte. There are no UCMR contaminant recovery acceptance criteria specified for LFSM/LFSMD analyses. All LFSM/LFSMD data are to be reported.

(v) *Method defined quality control.* You must ensure that your laboratory performs Laboratory Fortified Blanks and Laboratory Performance Checks, as appropriate to the method's requirements, for those methods listed in Table 1, column 3, in paragraph (a)(3) of this section. Each method specifies acceptance criteria for these QC checks.

(vi) *Reporting.* You must require your laboratory to submit these data electronically to the State and EPA using EPA's electronic data reporting system, accessible at (*http://water.epa.gov/lawsregs/rulesregs/sdwa/ucmr/ucmr3/reporting.cfm*), within 120 days from the sample collection date. You then have 60 days from when the laboratory posts the data to review, approve and submit the data to the State and EPA, via EPA's electronic data reporting system. If you do not electronically approve and submit the laboratory data to EPA within 60 days of the laboratory posting data to EPA's electronic reporting system, the data will be considered approved and available for State and EPA review.

(6) *Violation of this rule*—(i) *Monitoring violations.* Any failure to monitor in accordance with §141.40(a)(3)–(5) is a monitoring violation.

(ii) *Reporting violations.* Any failure to report in accordance with §141.35 is a reporting violation.

(b) *Petitions and waivers by States*—(1) *Governors' petition for additional contaminants.* The Safe Drinking Water Act allows Governors of seven (7) or more States to petition the EPA Administrator to add one or more contaminants to the UCMR Contaminant List in paragraph (a)(3) of this section. The petition must clearly identify the reason(s) for adding the contaminant(s) to the monitoring list, including the potential risk to public health, particularly any information that might be available regarding disproportional risks to the health and safety of children, the expected occurrence documented by any available data, any analytical methods known or proposed to be used to test for the contaminant(s), and any other information that could assist the Administrator in determining which contaminants present the greatest public health concern and should, therefore, be included on the UCMR Contaminant List in paragraph (a)(3) of this section.

(2) *State-wide waivers.* A State can waive monitoring requirements only with EPA approval and under very limited conditions. Conditions and procedures for obtaining a waiver are as follows:

(i) *Application.* A State may apply to EPA for a State-wide waiver from the unregulated contaminant monitoring requirements for PWSs serving more than 10,000 people. To apply for such a waiver, the State must submit an application to EPA that includes the following information: The list of contaminants on the UCMR Contaminant List for which a waiver is requested, along with documentation for each contaminant in the request demonstrating that the contaminants or their parent compounds do not occur naturally in the State, and certifying that during the past 15 years they have not been used, applied, stored, disposed of, released, or detected in the source waters or distribution systems in the State.

(ii) *Approval.* EPA will review State applications and notify the State whether it accepts or rejects the request. The State must receive written approval from EPA before issuing a State-widewaiver.

(c) *Incorporation by reference.* These standards are incorporated by reference into this section with the approval of the Director of the Federal Register under 5 U.S.C. 552(a) and 1 CFR part 51. All approved material is available for inspection either electronically at *www.regulations.gov*, in hard copy at the Water Docket, EPA/DC, and from the sources below. The Public Reading Room (EPA West, Room 3334, 1301 Constitution Ave. NW., Washington, DC) is open from 8:30 a.m. to 4:30 p.m., Monday through Friday, excluding legal holidays. The telephone number for this Public Reading Room is (202) 566–1744, and the telephone number for the Water Docket is (202) 566–2426. The material is also available for inspection at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call (202) 741–6030 or go to *http://www.archives.gov/federal* I *register/code* I *0f* I *federal* I *regulations/ibr* I *locations.html.*

(1) The following methods from the U.S. Environmental Protection Agency, Water Docket, EPA/DC, EPA West, Room 3334, 1301 Constitution Ave. NW., Washington, DC 20004.

(i) EPA Method 200.8 ''Determination of Trace Elements in Waters and Wastes by Inductively Coupled Plasma—Mass Spectrometry,'' Revision 5.4, 1994, available at *https://www.NEMI.gov.*

(ii) EPA Method 218.7 ''Determination of Hexavalent Chromium in Drinking Water by Ion Chromatography with Post-Column Derivatization and UV-Visible Spectroscopic Detection,'' Version 1.0, November 2011, EPA 815–R–11–005, available at *http://water.epa.gov/scitech/drinkingwater/labcert/analyticalmethods* I *ogwdw.cfm.*

(iii) EPA Method 300.1 ''Determination of Inorganic Anions in Drinking Water by Ion Chromatography,'' Revision 1.0, 1997, available at *http://water.epa.gov/scitech/drinkingwater/labcert/analyticalmethods* I *ogwdw.cfm.*

(iv) EPA Method 522 ''Determination of 1,4-Dioxane in Drinking Water by Solid Phase Extraction (SPE) and Gas Chromatography/Mass Spectrometry (GC/MS) with Selected Ion Monitoring (SIM),'' Version 1.0, September 2008, EPA/600/R–08/101, available at *http://www.epa.gov/nerlcwww/ordmeth.htm.*

(v) EPA Method 524.3 ''Measurement of Purgeable Organic Compounds in Water by Capillary Column Gas Chromatography/Mass Spectrometry,'' Version 1.0, June 2009, EPA 815–B–09–009, available at *http://water.epa.gov/scitech/drinkingwater/labcert/analyticalmethods* I *ogwdw.cfm.*

(vi) EPA Method 537 ''Determination of Selected Perfluorinated Alkyl Acids in Drinking Water by Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS),'' Version 1.1, September 2009, EPA/600/R–08/092, available at *http://www.epa.gov/nerlcwww/ordmeth.htm.*

(vii) EPA Method 539 ''Determination of Hormones in Drinking Water by Solid Phase Extraction (SPE) and Liquid Chromatography Electrospray Ionization Tandem Mass Spectrometry (LC–ESI–MS/MS),'' Version 1.0, November 2010, EPA 815–B–10–001, available at *http://water.epa.gov/scitech/drinkingwater/labcert/analyticalmethods* I *ogwdw.cfm.*

(2) The following methods from ''ASTM International,'' 100 Barr Harbor Drive, West Conshohocken, PA 19428.

(i) ASTM D5673–10 ''Standard Test Method for Elements in Water by Inductively Coupled Plasma-Mass Spectrometry,'' approved August 1, 2010. Available for purchase at *http://www.astm.org/Standards/D5673.htm.*

(ii) ASTM D6581–08 ''Standard Test Methods for Bromate, Bromide, Chlorate, and Chlorite in Drinking Water by Suppressed Ion Chromatography,'' approved August 15, 2008. Available for purchase at *http://www.astm.org/Standards/D6581.htm.*

(3) The following methods from "Standard Methods for the Examination of Water & Wastewater," 21st edition (2005), American Public Health Association, 800 I Street NW., Washington, DC 20001–3710.

(i) SM 3125 "Metals by Inductively Coupled Plasma/Mass Spectrometry."

(ii) SM 4110D "Determination of Anions by Ion Chromatography, Part D, Ion Chromatography Determination of Oxyhalides and Bromide."

[72 FR 393, Jan. 4, 2007; 72 FR 3916, Jan. 26, 2007, as amended at 77 FR 26098, May 2, 2012]

§141.41 Special monitoring for sodium.

(a) Suppliers of water for community public water systems shall collect and analyze one sample per plant at the entry point of the distribution system for the determination of sodium concentration levels; samples must be collected and analyzed annually for systems utilizing surface water sources in whole or in part, and at least every three years for systems utilizing solely ground water sources. The minimum number of samples required to be taken by the system shall be based on the number of treatment plants used by the system, except that multiple wells drawing raw water from a single aquifer may, with the State approval, be considered one treatment plant for determining the minimum number of samples. The supplier of water may be required by the State to collect and analyze water samples for sodium more frequently in locations where the sodium content is variable.

(b) The supplier of water shall report to EPA and/or the State the results of the analyses for sodium within the first 10 days of the month following the month in which the sample results were received or within the first 10 days following the end of the required monitoring period as stipulated by the State, whichever of these is first. If more than annual sampling is required the supplier shall report the average sodium concentration within 10 days of the month following the month in which the analytical results of the last sample used for the annual average was received. The supplier of water shall not be required to report the results to EPA where the State has adopted this regulation and results are reported to the State. The supplier shall report the results to EPA where the State has not adopted this regulation.

(c) The supplier of water shall notify appropriate local and State public health officials of the sodium levels by written notice by direct mail within three months. A copy of each notice required to be provided by this paragraph shall be sent to EPA and/or the State within 10 days of its issuance. The supplier of water is not required to notify appropriate local and State public health officials of the sodium levels where the State provides such notices in lieu of the supplier.

(d) Analyses for sodium shall be conducted as directed in §141.23(k)(1).

[45 FR 57345, Aug. 27, 1980, as amended at 59 FR 62470, Dec. 5, 1994]

§141.42 Special monitoring for corrosivity characteristics.

(a)–(c) [Reserved]

(d) Community water supply systems shall identify whether the following construction materials are present in their distribution system and report to the State:

Lead from piping, solder, caulking, interior lining of distribution mains, alloys and home plumbing.
Copper from piping and alloys, service lines, and home plumbing.
Galvanized piping, service lines, and home plumbing.
Ferrous piping materials such as cast iron and steel.
Asbestos cement pipe.

In addition, States may require identification and reporting of other materials of construction present in distribution systems that may contribute contaminants to the drinking water, such as:

Vinyl lined asbestos cement pipe.
Coal tar lined pipes and tanks.

[45 FR 57346, Aug. 27, 1980; 47 FR 10999, Mar. 12, 1982, as amended at 59 FR 62470, Dec. 5, 1994]

§141.43 Prohibition on use of lead pipes, solder, and flux.

(a) *In general*—(1) *Prohibition*. Any pipe, solder, or flux, which is used after June 19, 1986, in the installation or repair of—

(i) Any public water system, or

(ii) Any plumbing in a residential or nonresidential facility providing water for human consumption which is connected to a public water system shall be lead free as defined by paragraph (d) of this section. This paragraph (a)(1) shall not apply to leaded joints necessary for the repair of cast iron pipes.

(2) [Reserved]

(b) *State enforcement*—(1) *Enforcement of prohibition.* The requirements of paragraph (a)(1) of this section shall be enforced in all States effective June 19, 1988. States shall enforce such requirements through State or local plumbing codes, or such other means of enforcement as the State may determine to be appropriate.

(2) [Reserved]

(c) *Penalties.* If the Administrator determines that a State is not enforcing the requirements of paragraph (a) of this section, as required pursuant to paragraph (b) of this section, the Administrator may withhold up to 5 percent of Federal funds available to that State for State program grants under section 1443(a) of the Act.

(d) *Definition of lead free.* For purposes of this section, the term lead free:

(1) When used with respect to solders and flux refers to solders and flux containing not more than 0.2 percent lead;

(2) When used with respect to pipes and pipe fittings refers to pipes and pipe fittings containing not more than 8.0 percent lead; and

(3) When used with respect to plumbing fittings and fixtures intended by the manufacturer to dispense water for human ingestion refers to fittings and fixtures that are in compliance with standards established in accordance with 42 U.S.C. 300g–6(e).

[52 FR 20674, June 2, 1987, as amended at 65 FR 2003, Jan. 12, 2000]

Subpart F—Maximum Contaminant Level Goals and Maximum Residual Disinfectant Level Goals

§141.50 Maximum contaminant level goals for organic contaminants.

(a) MCLGs are zero for the following contaminants:

(1) Benzene
(2) Vinyl chloride
(3) Carbon tetrachloride
(4) 1,2-dichloroethane
(5) Trichloroethylene
(6) Acrylamide
(7) Alachlor
(8) Chlordane
(9) Dibromochloropropane
(10) 1,2-Dichloropropane
(11) Epichlorohydrin
(12) Ethylene dibromide
(13) Heptachlor
(14) Heptachlor epoxide
(15) Pentachlorophenol
(16) Polychlorinated biphenyls (PCBs)
(17) Tetrachloroethylene
(18) Toxaphene
(19) Benzo[a]pyrene
(20) Dichloromethane (methylene chloride)
(21) Di(2-ethylhexyl)phthalate
(22) Hexachlorobenzene
(23) 2,3,7,8-TCDD(Dioxin)

(b) MCLGs for the following contaminants are as indicated:

Contaminant	MCLG in mg/l
(1) 1,1-Dichloroethylene	0.007
(2) 1,1,1-Trichloroethane	0.20
(3) para-Dichlorobenzene	0.075
(4) Aldicarb	0.001
(5) Aldicarb sulfoxide	0.001
(6) Aldicarb sulfone	0.001
(7) Atrazine	0.003
(8) Carbofuran	0.04
(9) o-Dichlorobenzene	0.6
(10) cis-1,2-Dichloroethylene	0.07
(11) trans-1,2-Dichloroethylene	0.1
(12) 2,4-D	0.07
(13) Ethylbenzene	0.7
(14) Lindane	0.0002
(15) Methoxychlor	0.04
(16) Monochlorobenzene	0.1
(17) Styrene	0.1
(18) Toluene	1
(19) 2,4,5-TP	0.05
(20) Xylenes (total)	10
(21) Dalapon	0.2
(22) Di(2-ethylhexyl)adipate	.4
(23) Dinoseb	.007
(24) Diquat	.02
(25) Endothall	.1
(26) Endrin	.002
(27) Glyphosate	.7
(28) Hexachlorocyclopentadiene	.05
(29) Oxamyl (Vydate)	.2
(30) Picloram	.5
(31) Simazine	.004
(32) 1,2,4-Trichlorobenzene	.07
(33) 1,1,2-Trichloroethane	.003

[50 FR 46901, Nov. 13, 1985, as amended at 52 FR 20674, June 2, 1987; 52 FR 25716, July 8, 1987; 56 FR 3592, Jan. 30, 1991; 56 FR 30280, July 1, 1991; 57 FR 31846, July 17, 1992]

§141.51 Maximum contaminant level goals for inorganic contaminants.

(a) [Reserved]

(b) MCLGs for the following contaminants are as indicated:

Contaminant	MCLG (mg/l)
Antimony	0.006
Arsenic	zero [1]
Asbestos	7 Million fibers/liter (longer than 10 μm).
Barium	2
Beryllium	.004
Cadmium	0.005
Chromium	0.1
Copper	1.3
Cyanide (as free Cyanide)	.2
Fluoride	4.0
Lead	zero
Mercury	0.002
Nitrate	10 (as Nitrogen).
Nitrite	1 (as Nitrogen).
Total Nitrate+Nitrite	10 (as Nitrogen).
Selenium	0.05
Thallium	.0005

[1] This value for arsenic is effective January 23, 2006. Until then, there is no MCLG.

[50 FR 47155, Nov. 14, 1985, as amended at 52 FR 20674, June 2, 1987; 56 FR 3593, Jan. 30, 1991; 56 FR 26548, June 7, 1991; 56 FR 30280, July 1, 1991; 57 FR 31846, July 17, 1992; 60 FR 33932, June 29, 1995; 66 FR 7063, Jan. 22, 2001]

§141.52 Maximum contaminant level goals for microbiological contaminants.

(a) MCLGs for the following contaminants are as indicated:

Contaminant	MCLG
(1) *Giardia lamblia*	zero
(2) Viruses	zero
(3) *Legionella*	zero
(4) Total coliforms (including fecal) coliforms and *Escherichia coli*.	zero
(5) *Cryptosporidium*	zero
(6) *Escherichia coli (E. coli)*	zero

(b) The MCLG identified in paragraph (a)(4) of this section is applicable until March 31, 2016. The MCLG identified in paragraph (a)(6) of this section is applicable beginning April 1, 2016.

[78 FR 10347, Feb. 13, 2013]

§141.53 Maximum contaminant level goals for disinfection byproducts.

MCLGs for the following disinfection byproducts are as indicated:

Disinfection byproduct	MCLG (mg/L)
Bromodichloromethane	zero
Bromoform	zero
Bromate	zero
Chlorite	0.8
Chloroform	0.07
Dibromochloromethane	0.06
Dichloroacetic acid	zero
Monochloroacetic acid	0.07
Trichloroacetic acid	0.02

[63 FR 69465, Dec. 16, 1998, as amended at 65 FR 34405, May 30, 2000; 71 FR 478, Jan. 4, 2006]

§141.54 Maximum residual disinfectant level goals for disinfectants.

MRDLGs for disinfectants are as follows:

Disinfectant residual	MRDLG(mg/L)
Chlorine	4 (as Cl_2).
Chloramines	4 (as Cl_2).
Chlorine dioxide	0.8 (as ClO_2)

[63 FR 69465, Dec. 16, 1998]

§141.55 Maximum contaminant level goals for radionuclides.

MCLGs for radionuclides are as indicated in the following table:

Contaminant	MCLG
1. Combined radium-226 and radium-228	Zero.
2. Gross alpha particle activity (excluding radon and uranium).	Zero.
3. Beta particle and photon radioactivity	Zero.
4. Uranium	Zero.

[65 FR 76748, Dec. 7, 2000]

Subpart G—National Primary Drinking Water Regulations: Maximum Contaminant Levels and Maximum Residual Disinfectant Levels

§141.60 Effective dates.

(a) The effective dates for §141.61 are as follows:

(1) The effective date for paragraphs (a)(1) through (a)(8) of §141.61 is January 9, 1989.

(2) The effective date for paragraphs (a)(9) through (a)(18) and (c)(1) through (c)(18) of §141.61 is July 30, 1992.

(3) The effective date for paragraphs (a)(19) through (a)(21), (c)(19) through (c)(25), and (c)(27) through (c)(33) of §141.61 is January 17, 1994. The effective date of §141.61(c)(26) is August 17, 1992.

(b) The effective dates for §141.62 are as follows:

(1) The effective date of paragraph (b)(1) of §141.62 is October 2, 1987.

(2) The effective date for paragraphs (b)(2) and (b)(4) through (b)(10) of §141.62 is July 30, 1992.

(3) The effective date for paragraphs (b)(11) through (b)(15) of §141.62 is January 17, 1994.

(4) The effective date for §141.62(b)(16) is January 23, 2006.

[56 FR 3593, Jan. 30, 1991, as amended at 57 FR 31846, July 17, 1992; 59 FR 34324, July 1, 1994; 66 FR 7063, Jan. 22, 2001]

§141.61 Maximum contaminant levels for organic contaminants.

(a) The following maximum contaminant levels for organic contaminants apply to community and non-transient, non-community water systems.

CAS No.	Contaminant	MCL (mg/l)
(1) 75–01–4	Vinyl chloride	0.002
(2) 71–43–2	Benzene	0.005
(3) 56–23–5	Carbon tetrachloride	0.005
(4) 107–06–2	1,2-Dichloroethane	0.005
(5) 79–01–6	Trichloroethylene	0.005
(6) 106–46–7	para-Dichlorobenzene	0.075
(7) 75–35–4	1,1-Dichloroethylene	0.007
(8) 71–55–6	1,1,1-Trichloroethane	0.2
(9) 156–59–2	cis-1,2-Dichloroethylene	0.07
(10) 78–87–5	1,2-Dichloropropane	0.005
(11) 100–41–4	Ethylbenzene	0.7
(12) 108–90–7	Monochlorobenzene	0.1
(13) 95–50–1	o-Dichlorobenzene	0.6
(14) 100–42–5	Styrene	0.1
(15) 127–18–4	Tetrachloroethylene	0.005
(16) 108–88–3	Toluene	1
(17) 156–60–5	trans-1,2-Dichloroethylene	0.1
(18) 1330–20–7	Xylenes (total)	10
(19) 75–09–2	Dichloromethane	0.005
(20) 120–82–1	1,2,4-Trichloro-benzene	.07
(21) 79–00–5	1,1,2-Trichloro-ethane	.005

(b) The Administrator, pursuant to section 1412 of the Act, hereby identifies as indicated in the Table below granular activated carbon (GAC), packed tower aeration (PTA), or oxidation (OX) as the best technology treatment technique, or other means available for achieving compliance with the maximum contaminant level for organic contaminants identified in paragraphs (a) and (c) of this section:

BAT FOR ORGANIC CONTAMINANTS LISTED IN §141.61 (a) AND (c)

CAS No.	Contaminant	GAC	PTA	OX
15972–60–8	Alachlor	X		
116–06–3	Aldicarb	X		
1646–88–4	Aldicarb sulfone	X		
1646–87–3	Aldicarb sulfoxide	X		
1912–24–9	Atrazine	X		
71–43–2	Benzene	X	X	
50–32–8	Benzo[a]pyrene	X		
1563–66–2	Carbofuran	X		
56–23–5	Carbon tetrachloride	X	X	
57–74–9	Chlordane	X		
75–99–0	Dalapon	X		
94–75–7	2,4-D	X		
103–23–1	Di (2-ethylhexyl)adipate	X	X	
117–81–7	Di (2-ethylhexyl)phthalate	X		
96–12–8	Dibromochloropropane (DBCP)	X	X	
95–50–1	o-Dichlorobenzene	X	X	
106–46–7	para-Dichlorobenzene	X	X	
107–06–2	1,2-Dichloroethane	X	X	
75–35–4	1,1-Dichloroethylene	X	X	
156–59–2	cis-1,2-Dichloroethylene	X	X	
156–60–5	trans-1,2-Dichloroethylene	X	X	

BAT FOR ORGANIC CONTAMINANTS LISTED IN §141.61 (a) AND (c)—Continued

CAS No.	Contaminant	GAC	PTA	OX
75–09–2	Dichloromethane		X	
78–87–5	1,2-Dichloropropane	X	X	
88–85–7	Dinoseb	X		
85–00–7	Diquat	X		
145–73–3	Endothall	X		
72–20–8	Endrin	X		
100–41–4	Ethylbenzene	X	X	
106–93–4	Ethylene Dibromide (EDB)	X	X	
1071–83–6	Gylphosate			X
76–44–8	Heptachlor	X		
1024–57–3	Heptachlor epoxide	X		
118–74–1	Hexachlorobenzene	X		
77–47–3	Hexachlorocyclopentadiene	X	X	
58–89–9	Lindane	X		
72–43–5	Methoxychlor	X		
108–90–7	Monochlorobenzene	X	X	
23135–22–0	Oxamyl (Vydate)	X		
87–86–5	Pentachlorophenol	X		
1918–02–1	Picloram	X		
1336–36–3	Polychlorinated biphenyls (PCB)	X		
122–34–9	Simazine	X		
100–42–5	Styrene	X	X	
1746–01–6	2,3,7,8-TCDD (Dioxin)	X		
127–18–4	Tetrachloroethylene	X	X	
108–88–3	Toluene	X	X	
8001–35–2	Toxaphene	X		
93–72–1	2,4,5-TP (Silvex)	X		
120–82–1	1,2,4-Trichlorobenzene	X	X	
71–55–6	1,1,1-Trichloroethane	X	X	
79–00–5	1,1,2-Trichloroethane	X	X	
79–01–6	Trichloroethylene	X	X	
75–01–4	Vinyl chloride		X	
1330–20–7	Xylene	X	X	

(c) The following maximum contaminant levels for synthetic organic contaminants apply to community water systems and non-transient, non-community water systems:

CAS No.	Contaminant	MCL (mg/l)
(1) 15972–60–8	Alachlor	0.002
(2) 116–06–3	Aldicarb	0.003
(3) 1646–87–3	Aldicarb sulfoxide	0.004
(4) 1646–87–4	Aldicarb sulfone	0.002
(5) 1912–24–9	Atrazine	0.003
(6) 1563–66–2	Carbofuran	0.04
(7) 57–74–9	Chlordane	0.002
(8) 96–12–8	Dibromochloropropane	0.0002
(9) 94–75–7	2,4-D	0.07
(10) 106–93–4	Ethylene dibromide	0.00005
(11) 76–44–8	Heptachlor	0.0004
(12) 1024–57–3	Heptachlor epoxide	0.0002
(13) 58–89–9	Lindane	0.0002
(14) 72–43–5	Methoxychlor	0.04
(15) 1336–36–3	Polychlorinated biphenyls	0.0005
(16) 87–86–5	Pentachlorophenol	0.001
(17) 8001–35–2	Toxaphene	0.003
(18) 93–72–1	2,4,5-TP	0.05
(19) 50–32–8	Benzo[a]pyrene	0.0002
(20) 75–99–0	Dalapon	0.2
(21) 103–23–1	Di(2-ethylhexyl) adipate	0.4
(22) 117–81–7	Di(2-ethylhexyl) phthalate	0.006
(23) 88–85–7	Dinoseb	0.007
(24) 85–00–7	Diquat	0.02
(25) 145–73–3	Endothall	0.1
(26) 72–20–8	Endrin	0.002
(27) 1071–53–6	Glyphosate	0.7
(28) 118–74–1	Hexacholorbenzene	0.001
(29) 77–47–4	Hexachlorocyclopentadiene	0.05

CAS No.	Contaminant	MCL (mg/l)
(30) 23135–22–0	Oxamyl (Vydate)	0.2
(31) 1918–02–1	Picloram	0.5
(32) 122–34–9	Simazine	0.004
(33) 1746–01–6	2,3,7,8-TCDD(Dioxin)	3×10^{-8}

[56 FR 3593, Jan. 30, 1991, as amended at 56 FR 30280, July 1, 1991; 57 FR 31846, July 17, 1992; 59 FR 34324, July 1, 1994]

§141.62 Maximum contaminant levels for inorganic contaminants.

(a) [Reserved]

(b) The maximum contaminant levels for inorganic contaminants specified in paragraphs (b) (2)–(6), (b)(10), and (b) (11)–(16) of this section apply to community water systems and non-transient, non-community water systems. The maximum contaminant level specified in paragraph (b)(1) of this section only applies to community water systems. The maximum contaminant levels specified in (b)(7), (b)(8), and (b)(9) of this section apply to community water systems; non-transient, non-community water systems; and transient non-community water systems.

Contaminant	MCL (mg/l)
(1) Fluoride	4.0
(2) Asbestos	7 Million Fibers/liter (longer than 10 μm).
(3) Barium	2
(4) Cadmium	0.005
(5) Chromium	0.1
(6) Mercury	0.002
(7) Nitrate	10 (as Nitrogen)
(8) Nitrite	1 (as Nitrogen)
(9) Total Nitrate and Nitrite	10 (as Nitrogen)
(10) Selenium	0.05
(11) Antimony	0.006
(12) Beryllium	0.004
(13) Cyanide (as free Cyanide).	0.2
(14) [Reserved].	
(15) Thallium	0.002
(16) Arsenic	0.010

(c) The Administrator, pursuant to section 1412 of the Act, hereby identifies the following as the best technology, treatment technique, or other means available for achieving compliance with the maximum contaminant levels for inorganic contaminants identified in paragraph (b) of this section, except fluoride:

BAT FOR INORGANIC COMPOUNDS LISTED IN SECTION 141.62(b)

Chemical Name	BAT(s)
Antimony	2,7
Arsenic[4]	1, 2, 5, 6, 7, 9, 12[5]
Asbestos	2,3,8
Barium	5,6,7,9
Beryllium	1,2,5,6,7
Cadmium	2,5,6,7
Chromium	2,5,6[2],7
Cyanide	5,7,13
Mercury	2[1],4,6[1],7[1]
Nickel	5,6,7
Nitrate	5,7,9
Nitrite	5,7
Selenium	1,2[3],6,7,9
Thallium	1,5

[1] BAT only if influent Hg concentrations ≤10μg/1.
[2] BAT for Chromium III only.
[3] BAT for Selenium IV only.
[4] BATs for Arsenic V. Pre-oxidation may be required to convert Arsenic III to Arsenic V.
[5] To obtain high removals, iron to arsenic ratio must be at least 20:1.

Key to BATS in Table

1 = Activated Alumina
2 = Coagulation/Filtration (not BAT for systems <500 service connections)
3 = Direct and Diatomite Filtration
4 = Granular Activated Carbon
5 = Ion Exchange
6 = Lime Softening (not BAT for systems <500 service connections)
7 = Reverse Osmosis
8 = Corrosion Control
9 = Electrodialysis
10 = Chlorine
11 = Ultraviolet
12 = Oxidation/Filtration
13 = Alkaline Chlorination (pH ≥8.5)

(d) The Administrator, pursuant to section 1412 of the Act, hereby identifies in the following table the affordable technology, treatment technique, or other means available to systems serving 10,000 persons or fewer for achieving compliance with the maximum contaminant level for arsenic:

Small System Compliance Technologies (SSCTs)[1] for Arsenic[2]

Small system compliance technology	Affordable for listed small system categories[3]
Activated Alumina (centralized).	All size categories.
Activated Alumina (Point-of-Use)[4].	All size categories.
Coagulation/Filtration[5]	501–3,300, 3,301–10,000.
Coagulation-assisted Microfiltration.	501–3,300, 3,301–10,000.
Electrodialysis reversal[6]	501–3,300, 3,301–10,000.
Enhanced coagulation/filtration.	All size categories
Enhanced lime softening (pH>10.5).	All size categories.
Ion Exchange	All size categories.
Lime Softening[5]	501–3,300, 3,301–10,000.
Oxidation/Filtration[7]	All size categories.
Reverse Osmosis (centralized)[6].	501–3,300, 3,301–10,000.
Reverse Osmosis (Point-of-Use)[4].	All size categories.

[1] Section 1412(b)(4)(E)(ii) of SDWA specifies that SSCTs must be affordable and technically feasible for small systems.

[2] SSCTs for Arsenic V. Pre-oxidation may be required to convert Arsenic III to Arsenic V.

[3] The Act (ibid.) specifies three categories of small systems: (i) those serving 25 or more, but fewer than 501, (ii) those serving more than 500, but fewer than 3,301, and (iii) those serving more than 3,300, but fewer than 10,001.

[4] When POU or POE devices are used for compliance, programs to ensure proper long-term operation, maintenance, and monitoring must be provided by the water system to ensure adequate performance.

[5] Unlikely to be installed solely for arsenic removal. May require pH adjustment to optimal range if high removals are needed.

[6] Technologies reject a large volume of water—may not be appropriate for areas where water quantity may be an issue.

[7] To obtain high removals, iron to arsenic ratio must be at least 20:1.

[56 FR 3594, Jan. 30, 1991, as amended at 56 FR 30280, July 1, 1991; 57 FR 31847, July 17, 1992; 59 FR 34325, July 1, 1994; 60 FR 33932, June 29, 1995; 66 FR 7063, Jan. 22, 2001; 68 FR 14506, Mar. 25, 2003; 69 FR 38855, June 29, 2004]

§141.63 Maximum contaminant levels (MCLs) for microbiological contaminants.

(a) Until March 31, 2016, the total coliform MCL is based on the presence or absence of total coliforms in a sample, rather than coliform density.

(1) For a system that collects at least 40 samples per month, if no more than 5.0 percent of the samples collected during a month are total coliform-positive, the system is in compliance with the MCL for total coliforms.

(2) For a system that collects fewer than 40 samples per month, if no more than one sample collected during a month is total coliform-positive, the system is in compliance with the MCL for total coliforms.

(b) Until March 31, 2016, any fecal coliform-positive repeat sample or *E. coli*-positive repeat sample, or any total coliform-positive repeat sample following a fecal coliform-positiveor *E. coli*-positive routine sample, constitutes a violation of the MCL for total coliforms. For purposes of the public notification requirements in subpart Q of this part, this is a violation that may pose an acute risk to health.

(c) Beginning April 1, 2016, a system is in compliance with the MCL for *E. coli* for samples taken under the provisions of subpart Y of this part unless any of the conditions identified in paragraphs (c)(1) through (c)(4) of this section occur. For purposes of the public notification requirements in subpart Q of this part, violation of the MCL may pose an acute risk to health.

(1) The system has an *E. coli*-positive repeat sample following a total coliform-positiveroutine sample.

(2) The system has a total coliform-positive repeat sample following an *E. coli*-positiveroutine sample.

(3) The system fails to take all required repeat samples following an *E. coli*-positiveroutine sample.

(4) The system fails to test for *E. coli* when any repeat sample tests positive for total coliform.

(d) Until March 31, 2016, a public water system must determine compliance with the MCL for total coliforms in paragraphs (a) and (b) of this section for each month in which it is required to monitor for total coliforms. Beginning April 1, 2016, a public water system must determine compliance with the MCL for *E. coli* in paragraph (c) of this section for each month in which it is required to monitor for total coliforms.

(e) The Administrator, pursuant to section 1412 of the Act, hereby identifies the following as the best technology, treatment techniques, or other means available for achieving compliance with the maximum contaminant level for total coliforms in paragraphs (a) and (b) of this section and for achieving compliance with the maximum contaminant level for *E. coli* in paragraph (c) of this section:

(1) Protection of wells from fecal contamination by appropriate placement and construction;

(2) Maintenance of a disinfectant residual throughout the distribution system;

(3) Proper maintenance of the distribution system including appropriate pipe replacement and repair procedures, main flushing programs, proper operation and maintenance of storage tanks and reservoirs, cross connection control, and continual maintenance of positive water pressure in all parts of the distribution system;

(4) Filtration and/or disinfection of surface water, as described in subparts H, P, T, and W of this part, or disinfection of ground water, as described in subpart S of this part, using strong oxidants such as chlorine, chlorine dioxide, or ozone; and

(5) For systems using ground water, compliance with the requirements of an EPA-approved State Wellhead Protection Program developed and implemented under section 1428 of the SDWA.

(f) The Administrator, pursuant to section 1412 of the Act, hereby identifies the technology, treatment techniques, or other means available identified in paragraph (e) of this section as affordable technology, treatment techniques, or other means available to systems serving 10,000 or fewer people for achieving compliance with the maximum contaminant level for total coliforms in paragraphs (a) and (b) of this section and for achieving compliance with the maximum contaminant level for *E. coli* in paragraph (c) of this section.

[78 FR 10347, Feb. 13, 2013]

§141.64 Maximum contaminant levels for disinfection byproducts.

(a) *Bromate and chlorite.* The maximum contaminant levels (MCLs) for bromate and chlorite are as follows:

Disinfection byproduct	MCL (mg/L)
Bromate	0.010
Chlorite	1.0

(1) *Compliance dates for CWSs and NTNCWSs.* Subpart H systems serving 10,000 or more persons must comply with this paragraph (a) beginning January 1, 2002. Subpart H systems serving fewer than 10,000 persons and systems using only ground water not under the direct influence of surface water must comply with this paragraph (a) beginning January 1, 2004.

(2) The Administrator, pursuant to section 1412 of the Act, hereby identifies the following as the best technology, treatment techniques, or other means available for achieving compliance with the maximum contaminant levels for bromate and chlorite identified in this paragraph (a):

Disinfection byproduct	Best available technology
Bromate	Control of ozone treatment process to reduce production of bromate
Chlorite	Control of treatment processes to reduce disinfectant demand and control of disinfection treatment processes to reduce disinfectant levels

(b) TTHM and HAA5. (1) Subpart L—RAA compliance. (i) Compliance dates. Subpart H systems serving 10,000 or more persons must comply with this paragraph (b)(1) beginning January 1, 2002. Subpart H systems serving fewer than 10,000 persons and systems using only ground water not under the direct influence of surface water must comply with this paragraph (b)(1) beginning January 1, 2004. All systems must comply with these MCLs until the date specified for subpart V compliance in §141.620(c).

Disinfection byproduct	MCL (mg/L)
Total trihalomethanes (TTHM)	0.080
Haloacetic acids (five) (HAA5)	0.060

(ii) The Administrator, pursuant to section 1412 of the Act, hereby identifies the following as the best technology, treatment techniques, or other means available for achieving compliance with the maximum contaminant levels for TTHM and HAA5 identified in this paragraph (b)(1):

Disinfection byproduct	Best available technology
Total trihalomethanes (TTHM) and Haloacetic acids (five) (HAA5).	Enhanced coagulation or enhanced softening or GAC10, with chlorine as the primary and residual disinfectant

(2) Subpart V—LRAA compliance. (i) Compliance dates. The subpart V MCLs for TTHM and HAA5 must be complied

with as a locational running annual average at each monitoring location beginning the date specified for subpart V compliance in §141.620(c).

Disinfection byproduct	MCL (mg/L)
Total trihalomethanes (TTHM)	0.080
Haloacetic acids (five) (HAA5)	0.060

(ii) The Administrator, pursuant to section 1412 of the Act, hereby identifies the following as the best technology, treatment techniques, or other means available for achieving compliance with the maximum contaminant levels for TTHM and HAA5 identified in this paragraph (b)(2) for all systems that disinfect their source water:

Disinfection byproduct	Best available technology
Total trihalomethanes (TTHM) and Haloacetic acids (five) (HAA5).	Enhanced coagulation or enhanced softening, plus GAC10; or nanofiltration with a molecular weight cutoff $\leq$1000 Daltons; or GAC20

(iii) The Administrator, pursuant to section 1412 of the Act, hereby identifies the following as the best technology, treatment techniques, or other means available for achieving compliance with the maximum contaminant levels for TTHM and HAA5 identified in this paragraph (b)(2) for consecutive systems and applies only to the disinfected water that consecutive systems buy or otherwise receive:

Disinfection byproduct	Best available technology
Total trihalomethanes (TTHM) and Haloacetic acids (five) (HAA5).	Systems serving $\geq$10,000: Improved distribution system and storage tank management to reduce residence time, plus the use of chloramines for disinfectant residual maintenance Systems serving <10,000: Improved distribution system and storage tank management to reduce residence time

[71 FR 478, Jan. 4, 2006]

§141.65 Maximum residual disinfectant levels.

(a) Maximum residual disinfectant levels (MRDLs) are as follows:

Disinfectant residual	MRDL (mg/L)
Chlorine	4.0 (as Cl_2).
Chloramines	4.0 (as Cl_2).
Chlorine dioxide	0.8 (as ClO_2).

(b) *Compliance dates*—(1) *CWSs and NTNCWSs.* Subpart H systems serving 10,000 or more persons must comply with this section beginning January 1, 2002. Subpart H systems serving fewer than 10,000 persons and systems using only ground water not under the direct influence of surface water must comply with this subpart beginning January 1, 2004.

(2) Transient NCWSs. Subpart H systems serving 10,000 or more persons and using chlorine dioxide as a disinfectant or oxidant must comply with the chlorine dioxide MRDL beginning January 1, 2002. Subpart H systems serving fewer than 10,000 persons and using chlorine dioxide as a disinfectant or oxidant and systems using only ground water not under the direct influence of surface water and using chlorine dioxide as a disinfectant or oxidant must comply with the chlorine dioxide MRDL beginning January 1, 2004.

(c) The Administrator, pursuant to Section 1412 of the Act, hereby identifies the following as the best technology, treatment techniques, or other means available for achieving compliance with the maximum residual disinfectant levels identified in paragraph (a) of this section: control of treatment processes to reduce disinfectant demand and control of disinfection treatment processes to reduce disinfectant levels.

[63 FR 69465, Dec. 16, 1998, as amended at 66 FR 3776, Jan. 16, 2001]

§141.66 Maximum contaminant levels for radionuclides.

(a) [Reserved]

(b) *MCL for combined radium-226 and -228.* The maximum contaminant level for combined radium-226 and radium-228 is 5 pCi/L. The combined radium-226 and radium-228 value is determined by the addition of the results of the analysis for radium-226 and the analysis for radium-228.

(c) *MCL for gross alpha particle activity (excluding radon and uranium).* The maximum contaminant level for gross alpha particle activity (including radium-226 but excluding radon and uranium) is 15 pCi/L.

(d) *MCL for beta particle and photon radioactivity.* (1) The average annual concentration of beta particle and photon radioactivity from man-made radionuclides in drinking water must not produce an annual dose equivalent to the total body or any internal organ greater than 4 millirem/year (mrem/year).

(2) Except for the radionuclides listed in table A, the concentration of man-made radionuclides causing 4 mrem total body or organ dose equivalents must be calculated on the basis of 2 liter per day drinking water intake using the 168 hour data list in ''Maximum Permissible Body Burdens and Maximum Permissible Concentrations of Radionuclides in Air and in Water for Occupational Exposure,'' NBS (National Bureau of Standards) Handbook 69 as amended August 1963, U.S. Department of Commerce. This incorporation by reference was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. Copies of this document are available from the National Technical Information Service, NTIS ADA 280 282, U.S. Department of Commerce, 5285 Port Royal Road, Springfield, Virginia 22161. The toll-free number is 800–553–6847. Copies may be inspected at EPA's Drinking Water Docket, 401 M Street, SW., Washington, DC 20460; or at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202–741–6030, or go to: *http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html.* If two or more radionuclides are present, the sum of their annual dose equivalent to the total body or to any organ shall not exceed 4 mrem/year.

TABLE A—AVERAGE ANNUAL CONCENTRATIONS ASSUMED TO PRODUCE: A TOTAL BODY OR ORGAN DOSE OF 4 MREM/YR

1. Radionuclide	Critical organ	pCi per liter
2. Tritium	Total body	20,000
3. Strontium-90	Bone Marrow	8

(e) *MCL for uranium.* The maximum contaminant level for uranium is 30 μg/L.

(f) *Compliance dates.* (1) Compliance dates for combined radium-226 and -228, gross alpha particle activity, gross beta particle and photon radioactivity, and uranium: Community water systems must comply with the MCLs listed in paragraphs (b), (c), (d), and (e) of this section beginning December 8, 2003 and compliance shall be determined in accordance with the requirements of §§141.25 and 141.26. Compliance with reporting requirements for the radionuclides under appendix A to subpart O and appendices A and B to subpart Q is required on December 8, 2003.

(2) [Reserved]

(g) *Best available technologies (BATs) for radionuclides.* The Administrator, pursuant to section 1412 of the Act, hereby identifies as indicated in the following table the best technology available for achieving compliance with the maximum contaminant levels for combined radium-226 and -228, uranium, gross alpha particle activity, and beta particle and photon radioactivity.

TABLE B—BAT FOR COMBINED RADIUM-226 AND RADIUM-228, URANIUM, GROSS ALPHA PARTICLE ACTIVITY, AND BETA PARTICLE AND PHOTON RADIOACTIVITY

Contaminant	BAT
1. Combined radium-226 and radium-228	Ion exchange, reverse osmosis, lime softening.
2. Uranium	Ion exchange, reverse osmosis, lime softening, coagulation/filtration.
3. Gross alpha particle activity (excluding Radon and Uranium)	Reverse osmosis.
4. Beta particle and photon radioactivity	Ion exchange, reverse osmosis.

(h) *Small systems compliance technologies list for radionuclides.*

TABLE C—LIST OF SMALL SYSTEMS COMPLIANCE TECHNOLOGIES FOR RADIONUCLIDES AND LIMITATIONS TO USE

Unit technologies	Limitations (see footnotes)	Operator skill level required [1]	Raw water quality range and considerations. [1]
1. Ion exchange (IE)	([a])	Intermediate	All ground waters.

TABLE C—LIST OF SMALL SYSTEMS COMPLIANCE TECHNOLOGIES FOR RADIONUCLIDES AND LIMITATIONS TO USE—Continued

Unit technologies	Limitations (see footnotes)	Operator skill level required [1]	Raw water quality range and considerations. [1]
2. Point of use (POU [2]) IE	(b)	Basic	All ground waters.
3. Reverse osmosis (RO)	(c)	Advanced	Surface waters usually require pre-filtration.
4. POU [2] RO	(b)	Basic	Surface waters usually require pre-filtration.
5. Lime softening	(d)	Advanced	All waters.
6. Green sand filtration	(e)	Basic.	
7. Co-precipitation with Barium sulfate	(f)	Intermediate to Advanced	Ground waters with suitable water quality.
8. Electrodialysis/electrodialysis reversal.		Basic to Intermediate	All ground waters.
9. Pre-formed hydrous Manganese oxide filtration.	(g)	Intermediate	All ground waters.
10. Activated alumina	(a), (h)	Advanced	All ground waters; competing anion concentrations may affect regeneration frequency.
11. Enhanced coagulation/filtration	(i)	Advanced	Can treat a wide range of water qualities.

[1] National Research Council (NRC). Safe Water from Every Tap: Improving Water Service to Small Communities. National Academy Press. Washington, D.C. 1997.

[2] A POU, or "point-of-use" technology is a treatment device installed at a single tap used for the purpose of reducing contaminants in drinking water at that one tap. POU devices are typically installed at the kitchen tap. See the April 21, 2000 NODA for more details.

Limitations Footnotes: Technologies for Radionuclides:

[a] The regeneration solution contains high concentrations of the contaminant ions. Disposal options should be carefully considered before choosing this technology.

[b] When POU devices are used for compliance, programs for long-term operation, maintenance, and monitoring must be provided by water utility to ensure proper performance.

[c] Reject water disposal options should be carefully considered before choosing this technology. See other RO limitations described in the SWTR Compliance Technologies Table.

[d] The combination of variable source water quality and the complexity of the water chemistry involved may make this technology too complex for small surface water systems.

[e] Removal efficiencies can vary depending on water quality.

[f] This technology may be very limited in application to small systems. Since the process requires static mixing, detention basins, and filtration, it is most applicable to systems with sufficiently high sulfate levels that already have a suitable filtration treatment train in place.

[g] This technology is most applicable to small systems that already have filtration in place.

[h] Handling of chemicals required during regeneration and pH adjustment may be too difficult for small systems without an adequately trained operator.

[i] Assumes modification to a coagulation/filtration process already in place.

TABLE D—COMPLIANCE TECHNOLOGIES BY SYSTEM SIZE CATEGORY FOR RADIONUCLIDE NPDWR'S

Contaminant	Compliance technologies [1] for system size categories (population served)		3,300–10,000
	25–500	501–3,300	
1. Combined radium-226 and radium-228	1, 2, 3, 4, 5, 6, 7, 8, 9	1, 2, 3, 4, 5, 6, 7, 8, 9	1, 2, 3, 4, 5, 6, 7. 8, 9.
2. Gross alpha particle activity	3, 4	3, 4	3, 4.
3. Beta particle activity and photon activity	1, 2, 3, 4	1, 2, 3, 4	1, 2, 3, 4.
4. Uranium	1, 2, 4, 10, 11	1, 2, 3, 4, 5, 10, 11	1, 2, 3, 4, 5, 10, 11.

NOTE: [1] Numbers correspond to those technologies found listed in the table C of 141.66(h).

[65 FR 76748, Dec. 7, 2000]

Subpart H—Filtration and Disinfection

SOURCE: 54 FR 27527, June 29, 1989, unless otherwise noted.

§141.70 General requirements.

(a) The requirements of this subpart H constitute national primary drinking water regulations. These regulations establish criteria under which filtration is required as a treatment technique for public water systems supplied by a surface water source and public water systems supplied by a ground water source under the direct influence of surface water. In addition, these regulations establish treatment technique requirements in lieu of maximum contaminant levels for the following contaminants: *Giardia lamblia,* viruses, heterotrophic plate count bacteria, *Legionella,* and turbidity. Each public water system with a surface water source or a ground water source under the direct influence of surface water must provide treatment of that source water that complies with these treatment technique requirements. The treatment technique requirements consist of installing and properly operating water treatment processes which reliably achieve:

(1) At least 99.9 percent (3-log) removal and/or inactivation of *Giardia lamblia* cysts between a point where the raw water is not subject to recontamination by surface water runoff and a point downstream before or at the first customer; and

(2) At least 99.99 percent (4-log) removal and/or inactivation of viruses between a point where the raw water is not subject to recontamination by surface water runoff and a point downstream before or at the first customer.

(b) A public water system using a surface water source or a ground water source under the direct influence of surface water is considered to be in compliance with the requirements of paragraph (a) of this section if:

(1) It meets the requirements for avoiding filtration in §141.71 and the disinfection requirements in §141.72(a); or

(2) It meets the filtration requirements in §141.73 and the disinfection requirements in §141.72(b).

(c) Each public water system using a surface water source or a ground water source under the direct influence of surface water must be operated by qualified personnel who meet the requirements specified by the State.

(d) *Additional requirements for systems serving at least 10,000 people.* In addition to complying with requirements in this subpart, systems serving at least 10,000 people must also comply with the requirements in subpart P of this part.

(e) *Additional requirements for systems serving fewer than 10,000 people.* In addition to complying with requirements in this subpart, systems serving fewer than 10,000 people must also comply with the requirements in subpart T of this part.

[54 FR 27527, June 29, 1989, as amended at 63 FR 69516, Dec. 16, 1998; 67 FR 1836, Jan. 14, 2002]

§141.71 Criteria for avoiding filtration.

A public water system that uses a surface water source must meet all of the conditions of paragraphs (a) and (b) of this section, and is subject to paragraph (c) of this section, beginning December 30, 1991, unless the State has determined, in writing pursuant to §1412(b)(7)(C)(iii), that filtration is required. A public water system that uses a ground water source under the direct influence of surface water must meet all of the conditions of paragraphs (a) and (b) of this section and is subject to paragraph (c) of this section, beginning 18 months after the State determines that it is under the direct influence of surface water, or December 30, 1991, whichever is later, unless the State has determined, in writing pursuant to §1412(b)(7)(C)(iii), that filtration is required. If the State determines in writing pursuant to §1412(b)(7)(C)(iii) before December 30, 1991, that filtration is required, the system must have installed filtration and meet the criteria for filtered systems specified in §§141.72(b) and 141.73 by June 29, 1993. Within 18 months of the failure of a system using surface water or a ground water source under the direct influence of surface water to meet any one of the requirements of paragraphs (a) and (b) of this section or after June 29, 1993, whichever is later, the system must have installed filtration and meet the criteria for filtered systems specified in §§141.72(b) and 141.73.

(a) *Source water quality conditions.* (1) The fecal coliform concentration must be equal to or less than 20/100 ml, or the total coliform concentration must be equal to or less than 100/100 ml (measured as specified in §141.74 (a) (1) and (2) and (b)(1)), in representative samples of the source water immediately prior to the first or only point of disinfectant application in at least 90 percent of the measurements made for the 6 previous months that the system served water to the public on an ongoing basis. If a system measures both fecal and total coliforms, the fecal coliform criterion, but not the total coliform criterion, in this paragraph must be met.

(2) The turbidity level cannot exceed 5 NTU (measured as specified in §141.74 (a)(1) and (b)(2)) in representative samples of the source water immediately prior to the first or only point of disinfectant application unless: (i) the State determines that any such event was caused by circumstances that were unusual and unpredictable; and (ii) as a result of any such event, there have not been more than two events in the past 12 months the system served water to the public, or more than five events in the past 120 months the system served water to the public, in which the turbidity level exceeded 5 NTU. An ''event'' is a series of consecutive days during which at least one turbidity measurement each day exceeds 5 NTU.

(b) *Site-specific conditions.* (1)(i) The public water system must meet the requirements of §141.72(a)(1) at least 11 of the 12 previous months that the system served water to the public, on an ongoing basis, unless the system fails to meet the requirements during 2 of the 12 previous months that the system served water to the public, and the State determines that at least one of these failures was caused by circumstances that were unusual and unpredictable.

(ii) The public water system must meet the requirements of §141.72(a)(2) at all times the system serves water to the public.

(iii) The public water system must meet the requirements of §141.72(a)(3) at all times the system serves water to the public unless the State determines that any such failure was caused by circumstances that were unusual and unpredictable.

(iv) The public water system must meet the requirements of §141.72(a)(4) on an ongoing basis unless the State determines that failure to meet these requirements was not caused by a deficiency in treatment of the source water.

(2) The public water system must maintain a watershed control program which minimizes the potential for contamination by *Giardia lamblia* cysts and viruses in the source water. The State must determine whether the watershed control program is adequate to meet this goal. The adequacy of a program to limit potential contamination by *Giardia lamblia* cysts and viruses must be based on: the comprehensiveness of the watershed review; the effectiveness of the system's program to monitor and control detrimental activities occurring in the watershed; and the extent to which the water system has maximized land ownership and/or controlled land use within the watershed. At a minimum, the watershed control program must:

(i) Characterize the watershed hydrology and land ownership;

(ii) Identify watershed characteristics and activities which may have an adverse effect on source water quality; and

(iii) Monitor the occurrence of activities which may have an adverse effect on source water quality.

The public water system must demonstrate through ownership and/or written agreements with landowners within the watershed that it can control all human activities which may have an adverse impact on the microbiological quality of the source water. The public water system must submit an annual report to the State that identifies any special concerns about the watershed and how they are being handled; describes activities in the watershed that affect water quality; and projects what adverse activities are expected to occur in the future and describes how the public water system expects to address them. For systems using a ground water source under the direct influence of surface water, an approved wellhead protection program developed under section 1428 of the Safe Drinking Water Act may be used, if the State deems it appropriate, to meet these requirements.

(3) The public water system must be subject to an annual on-siteinspection to assess the watershed control program and disinfection treatment process. Either the State or a party approved by the State must conduct the on-siteinspection. The inspection must be conducted by competent individuals such as sanitary and civil engineers, sanitarians, or technicians who have

experience and knowledge about the operation and maintenance of a public water system, and who have a sound understanding of public health principles and waterborne diseases. A report of the on-site inspection summarizing all findings must be prepared every year. The on-site inspection must indicate to the State's satisfaction that the watershed control program and disinfection treatment process are adequately designed and maintained. The on-site inspection must include:

(i) A review of the effectiveness of the watershed control program;

(ii) A review of the physical condition of the source intake and how well it is protected;

(iii) A review of the system's equipment maintenance program to ensure there is low probability for failure of the disinfection process;

(iv) An inspection of the disinfection equipment for physical deterioration;

(v) A review of operating procedures;

(vi) A review of data records to ensure that all required tests are being conducted and recorded and disinfection is effectively practiced; and

(vii) Identification of any improvements which are needed in the equipment, system maintenance and operation, or data collection.

(4) The public water system must not have been identified as a source of a waterborne disease outbreak, or if it has been so identified, the system must have been modified sufficiently to prevent another such occurrence, as determined by the State.

(5) The public water system must comply with the maximum contaminant level (MCL) for total coliforms in §141.63(a) and (b) and the MCL for *E. coli* in §141.63(c) at least 11 months of the 12 previous months that the system served water to the public, on an ongoing basis, unless the State determines that failure to meet this requirement was not caused by a deficiency in treatment of the source water.

(6) The public water system must comply with the requirements for trihalomethanes in §§141.12 and 141.30 until December 31, 2001. After December 31, 2001, the system must comply with the requirements for total trihalomethanes, haloacetic acids (five), bromate, chlorite, chlorine, chloramines, and chlorine dioxide in subpart L of this part.

(c) *Treatment technique violations.* (1) A system that (i) fails to meet any one of the criteria in paragraphs (a) and (b) of this section and/or which the State has determined that filtration is required, in writing pursuant to §1412(b)(7)(C)(iii), and (ii) fails to install filtration by the date specified in the introductory paragraph of this section is in violation of a treatment technique requirement.

(2) A system that has not installed filtration is in violation of a treatment technique requirement if:

(i) The turbidity level (measured as specified in §141.74(a)(1) and (b)(2)) in a representative sample of the source water immediately prior to the first or only point of disinfection application exceeds 5 NTU; or

(ii) The system is identified as a source of a waterborne disease outbreak.

[54 FR 27527, June 29, 1989, as amended at 63 FR 69516, Dec. 16, 1998; 66 FR 3776, Jan. 16, 2001; 69 FR 38855, June 29, 2004; 78 FR 10347, Feb. 13, 2013]

§141.72 Disinfection.

A public water system that uses a surface water source and does not provide filtration treatment must provide the disinfection treatment specified in paragraph (a) of this section beginning December 30, 1991, unless the State determines that filtration is required in writing pursuant to §1412 (b)(7)(C)(iii). A public water system that uses a ground water source under the direct influence of surface water and does not provide filtration treatment must provide disinfection treatment specified in paragraph (a) of this section beginning December 30, 1991, or 18 months after the State determines that the ground water source is under the influence of surface water, whichever is later, unless the State has determined that filtration is required in writing pursuant to §1412(b)(7)(C)(iii). If the State has determined that filtration is required, the system must comply with any interim disinfection requirements the State deems necessary before filtration is installed. A system that uses a surface water source that provides filtration treatment must provide the disinfection treatment specified in paragraph (b) of this section beginning June 29, 1993, or beginning when filtration is installed, whichever is later. A system that uses a ground water source under the direct influence of surface water and provides filtration treatment must provide disinfection treatment as specified in paragraph (b) of this section by June 29, 1993, or beginning when filtration is installed, whichever is later. Failure to meet any requirement of this section after the applicable date specified in this introductory paragraph is a treatment technique violation.

(a) *Disinfection requirements for public water systems that do not provide filtration*. Each public water system that does not provide filtration treatment must provide disinfection treatment as follows:

(1) The disinfection treatment must be sufficient to ensure at least 99.9 percent (3-log) inactivation of *Giardia lamblia* cysts and 99.99 percent (4-log) inactivation of viruses, every day the system serves water to the public, except any one day each month. Each day a system serves water to the public, the public water system must calculate the CT value(s) from the system's treatment parameters, using the procedure specified in §141.74(b)(3), and determine whether this value(s) is sufficient to achieve the specified inactivation rates for *Giardia lamblia* cysts and viruses. If a system uses a disinfectant other than chlorine, the system may demonstrate to the State, through the use of a State-approvedprotocol for onsite disinfection challenge studies or other information satisfactory to the State, that $CT_{99.9}$ values other than those specified in tables 2.1 and 3.1 in §141.74(b)(3) or other operational parameters are adequate to demonstrate that the system is achieving minimum inactivation rates required by paragraph (a)(1) of this section.

(2) The disinfection system must have either (i) redundant components, including an auxiliary power supply with automatic start-up and alarm to ensure that disinfectant application is maintained continuously while water is being delivered to the distribution system, or (ii) automatic shut-offof delivery of water to the distribution system whenever there is less than 0.2 mg/l of residual disinfectant concentration in the water. If the State determines that automatic shut-off would cause unreasonable risk to health or interfere with fire protection, the system must comply with paragraph (a)(2)(i) of this section.

(3) The residual disinfectant concentration in the water entering the distribution system, measured as specified in §141.74 (a)(2) and (b)(5), cannot be less than 0.2 mg/l for more than 4 hours.

(4)(i) The residual disinfectant concentration in the distribution system, measured as total chlorine, combined chlorine, or chlorine dioxide, as specified in §141.74 (a)(2) and (b)(6), cannot be undetectable in more than 5 percent of the samples each month, for any two consecutive months that the system serves water to the public. Water in the distribution system with a heterotrophic bacteria concentration less than or equal to 500/ml, measured as heterotrophic plate count (HPC) as specified in §141.74(a)(1), is deemed to have a detectable disinfectant residual for purposes of determining compliance with this requirement. Thus, the value ''V'' in the following formula cannot exceed 5 percent in one month, for any two consecutive months.

$$V = \frac{c+d+e}{a+b} \times 100$$

where:

a=number of instances where the residual disinfectant concentration is measured;

b=number of instances where the residual disinfectant concentration is not measured but heterotrophic bacteria plate count (HPC) is measured;

c=number of instances where the residual disinfectant concentration is measured but not detected and no HPC is measured;

d=number of instances where the residual disinfectant concentration is measured but not detected and where the HPC is >500/ml; and

e=number of instances where the residual disinfectant concentration is not measured and HPC is >500/ml.

(ii) If the State determines, based on site-specific considerations, that a system has no means for having a sample transported and analyzed for HPC by a certified laboratory under the requisite time and temperature conditions specified by §141.74(a)(1) and that the system is providing adequate disinfection in the distribution system, the requirements of paragraph (a)(4)(i) of this section do not apply to that system.

(b) *Disinfection requirements for public water systems which provide filtration.* Each public water system that provides filtration treatment must provide disinfection treatment as follows.

(1) The disinfection treatment must be sufficient to ensure that the total treatment processes of that system achieve at least 99.9 percent (3-log) inactivation and/or removal of *Giardia lamblia* cysts and at least 99.99 percent (4-log) inactivation and/or removal of viruses, as determined by the State.

(2) The residual disinfectant concentration in the water entering the distribution system, measured as specified in §141.74 (a)(2) and (c)(2), cannot be less than 0.2 mg/l for more than 4 hours.

(3)(i) The residual disinfectant concentration in the distribution system, measured as total chlorine, combined chlorine, or chlorine dioxide, as specified in §141.74 (a)(2) and (c)(3), cannot be undetectable in more than 5 percent of the samples each month, for any two consecutive months that the system serves water to the public. Water in the distribution system with a heterotrophic bacteria concentration less than or equal to 500/ml, measured as heterotrophic plate count (HPC) as specified in §141.74(a)(1), is deemed to have a detectable disinfectant residual for purposes of determining compliance with this requirement. Thus, the value ''V'' in the following formula cannot exceed 5 percent in one month, for any two consecutive months.

$$V = \frac{c + d + e}{a + b} \times 100$$

where:

a=number of instances where the residual disinfectant concentration is measured;

b=number of instances where the residual disinfectant concentration is not measured but heterotrophic bacteria plate count (HPC) is measured;

c=number of instances where the residual disinfectant concentration is measured but not detected and no HPC is measured;

d=number of instances where no residual disinfectant concentration is detected and where the HPC is >500/ml; and

e=number of instances where the residual disinfectant concentration is not measured and HPC is >500/ml.

(ii) If the State determines, based on site-specific considerations, that a system has no means for having a sample transported and analyzed for HPC by a certified laboratory under the requisite time and temperature conditions specified in §141.74(a)(1) and that the system is providing adequate disinfection in the distribution system, the requirements of paragraph (b)(3)(i) of this section do not apply.

[54 FR 27527, June 29, 1989, as amended at 69 FR 38855, June 29, 2004]

§141.73 Filtration.

A public water system that uses a surface water source or a ground water source under the direct influence of surface water, and does not meet all of the criteria in §141.71 (a) and (b) for avoiding filtration, must provide treatment consisting of both disinfection, as specified in §141.72(b), and filtration treatment which complies with the requirements of paragraph (a), (b), (c), (d), or (e) of this section by June 29, 1993, or within 18 months of the failure to meet any one of the criteria for avoiding filtration in §141.71 (a) and (b), whichever is later. Failure to meet any requirement of this section after the date specified in this introductory paragraph is a treatment technique violation.

(a) *Conventional filtration treatment or direct filtration.* (1) For systems using conventional filtration or direct filtration, the turbidity level of representative samples of a system's filtered water must be less than or equal to 0.5 NTU in at least 95 percent of the measurements taken each month, measured as specified in §141.74 (a)(1) and (c)(1), except that if the State determines that the system is capable of achieving at least 99.9 percent removal and/or inactivation of *Giardia lamblia* cysts at some turbidity level higher than 0.5

NTU in at least 95 percent of the measurements taken each month, the State may substitute this higher turbidity limit for that system. However, in no case may the State approve a turbidity limit that allows more than 1 NTU in more than 5 percent of the samples taken each month, measured as specified in §141.74 (a)(1) and (c)(1).

(2) The turbidity level of representative samples of a system's filtered water must at no time exceed 5 NTU, measured as specified in §141.74 (a)(1) and (c)(1).

(3) Beginning January 1, 2002, systems serving at least 10,000 people must meet the turbidity requirements in §141.173(a).

(4) Beginning January 1, 2005, systems serving fewer than 10,000 people must meet the turbidity requirements in §§141.550 through 141.553.

(b) *Slow sand filtration.* (1) For systems using slow sand filtration, the turbidity level of representative samples of a system's filtered water must be less than or equal to 1 NTU in at least 95 percent of the measurements taken each month, measured as specified in §141.74 (a)(1) and (c)(1), except that if the State determines there is no significant interference with disinfection at a higher turbidity level, the State may substitute this higher turbidity limit for that system.

(2) The turbidity level of representative samples of a system's filtered water must at no time exceed 5 NTU, measured as specified in §141.74 (a)(1) and (c)(1).

(c) *Diatomaceous earth filtration.* (1) For systems using diatomaceous earth filtration, the turbidity level of representative samples of a system's filtered water must be less than or equal to 1 NTU in at least 95 percent of the measurements taken each month, measured as specified in §141.74 (a)(1) and (c)(1).

(2) The turbidity level of representative samples of a system's filtered water must at no time exceed 5 NTU, measured as specified in §141.74 (a)(1) and (c)(1).

(d) *Other filtration technologies.* A public water system may use a filtration technology not listed in paragraphs (a) through (c) of this section if it demonstrates to the State, using pilot plant studies or other means, that the alternative filtration technology, in combination with disinfection treatment that meets the requirements of §141.72(b), consistently achieves 99.9 percent removal and/or inactivation of *Giardia lamblia* cysts and 99.99 percent removal and/or inactivation of viruses. For a system that makes this demonstration, the requirements of paragraph (b) of this section apply. Beginning January 1, 2002, systems serving at least 10,000 people must meet the requirements for other filtration technologies in §141.173(b). Beginning January 14, 2005, systems serving fewer than 10,000 people must meet the requirements for other filtration technologies in §141.550 through 141.553.

[54 FR 27527, June 29, 1989, as amended at 63 FR 69516, Dec. 16, 1998; 66 FR 3776, Jan. 16, 2001; 67 FR 1836, Jan. 14, 2002; 69 FR 38855, June 29, 2004]

§141.74 Analytical and monitoring requirements.

(a) *Analytical requirements.* Only the analytical method(s) specified in this paragraph, or otherwise approved by EPA, may be used to demonstrate compliance with §§141.71, 141.72 and 141.73. Measurements for pH, turbidity, temperature and residual disinfectant concentrations must be conducted by a person approved by the State. Measurement for total coliforms, fecal coliforms and HPC must be conducted by a laboratory certified by the State or EPA to do such analysis. Until laboratory certification criteria are developed for the analysis of fecal coliforms and HPC, any laboratory certified for total coliforms analysis by the State or EPA is deemed certified for fecal coliforms and HPC analysis. The following procedures shall be conducted in accordance with the publications listed in the following section. This incorporation by reference was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. Copies of the methods published in *Standard Methods for the Examination of Water and Wastewater* may be obtained from the American Public Health Association et al., 1015 Fifteenth Street, NW., Washington, DC 20005; copies of the Minimal Medium ONPG-MUG Method as set forth in the article "National Field Evaluation of a Defined Substrate Method for the Simultaneous Enumeration of Total Coliforms and *Esherichia coli* from Drinking Water: Comparison with the Standard Multiple Tube Fermentation Method" (Edberg et al.), Applied and Environmental Microbiology, Volume 54, pp. 1595–1601, June 1988 (as amended under Erratum, Applied and Environmental Microbiology, Volume 54, p. 3197, December, 1988), may be obtained from the American Water Works Association Research Foundation, 6666 West Quincy Avenue, Denver, Colorado, 80235; and copies of the Indigo Method as set forth in the article "Determination of Ozone in Water by the Indigo Method" (Bader and Hoigne), may be obtained from Ozone Science & Engineering, Pergamon Press Ltd., Fairview Park, Elmsford, New York 10523. Copies may be inspected at the U.S. Environmental Protection Agency, Room EB15, 401 M St., SW., Washington, DC 20460 or at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202–741–6030, or go to: *http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html.*

(1) Public water systems must conduct analysis of pH and temperature in accordance with one of the methods listed at §141.23(k)(1). Public water systems must conduct analysis of total coliforms, fecal coliforms, heterotrophic bacteria, and turbidity in accordance with one of the following analytical methods or one of the alternative methods listed in appendix A to subpart C of this part and by using analytical test procedures contained in *Technical Notes on Drinking Water Methods,* EPA–600/R–94–173, October 1994. This document is available from the National Service Center for Environmental Publications (NSCEP), P.O. Box 42419, Cincinnati, OH 45242–0419 or *http://www.epa.gov/nscep/.*

Organism	Methodology	Citation[1]
Total Coliform[2]	Total Coliform Fermentation Technique[3 4 5].	9221 A, B, C
	Total Coliform Membrane Filter Technique[6].	9222 A, B, C
	ONPG-MUG Test[7]	9223
Fecal Coliforms[2]	Fecal Coliform Procedure[8].	9221 E
	Fecal Coliform Filter Procedure.	9222 D
Heterotrophic bacteria[2].	Pour Plate Method	9215 B
	SimPlate[11].	
Turbidity[13]	Nephelometric Method.	2130 B
	Nephelometric Method.	180.1[9]
	Great Lakes Instruments.	Method 2[10]
	Hach FilterTrak	10133[12]

The procedures shall be done in accordance with the documents listed below. The incorporation by reference of the following documents listed in footnotes 1, 6, 7 and 9–12 was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. Copies of the documents may be obtained from the sources listed below. Information regarding obtaining these documents can be obtained from the Safe Drinking Water Hotline at 800–426–4791. Documents may be inspected at EPA's Drinking Water Docket, 1301 Constitution Avenue, NW., EPA West, Room B102, Washington DC 20460 (Telephone: 202–566–2426); or at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202–741–6030, or go to: *http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html.*

[1] Except where noted, all methods refer to *Standard Methods for the Examination of Water and Wastewater*, 18th edition (1992), 19th edition (1995), or 20th edition (1998), American Public Health Association, 1015 Fifteenth Street, NW., Washington, DC 20005. The cited methods published in any of these three editions may be used. In addition, the following online versions may also be used: 2130 B–01, 9215 B–00, 9221 A, B, C, E–99, 9222 A, B, C, D–97, and 9223 B–97. Standard Methods Online are available at *http://www.standardmethods.org.* The year in which each method was approved by the Standard Methods Committee is designated by the last two digits in the method number. The methods listed are the only Online versions that may be used.

[2] The time from sample collection to initiation of analysis may not exceed 8 hours. Systems must hold samples below 10 deg. C during transit.

[3] Lactose broth, as commercially available, may be used in lieu of lauryl tryptose broth, if the system conducts at least 25 parallel tests between this medium and lauryl tryptose broth using the water normally tested, and this comparison demonstrates that the false-positive rate and false-negative rate for total coliform, using lactose broth, is less than 10 percent.

[4] Media should cover inverted tubes at least one-half to two-thirds after the sample is added.

[5] No requirement exists to run the completed phase on 10 percent of all total coliform-positive confirmed tubes.

[6] MI agar also may be used. Preparation and use of MI agar is set forth in the article, "New medium for the simultaneous detection of total coliform and *Escherichia coli* in water" by Brenner, K.P., et. al., 1993, Appl. Environ. Microbiol. 59:3534–3544. Also available from the Office of Water Resource Center (RC–4100T), 1200 Pennsylvania Avenue, NW., Washington DC 20460, EPA/600/J–99/225. Verification of colonies is not required.

[7] The ONPG-MUG Test is also known as the Autoanalysis Colilert System.

[8] A–1 broth may be held up to 7 days in a tightly closed screw cap tube at 4 °C.

[9] "Methods for the Determination of Inorganic Substances in Environmental Samples", EPA/600/R–93/100, August 1993. Available at NTIS, PB94–121811.

[10] GLI Method 2, "Turbidity," November 2, 1992, Great Lakes Instruments, Inc., 8855 North 55th Street, Milwaukee, WI 53223.

[11] A description of the SimPlate method, "IDEXX SimPlate TM HPC Test Method for Heterotrophs in Water," November 2000, can be obtained from IDEXX Laboratories, Inc., 1 IDEXX Drive, Westbrook, ME 04092, telephone (800) 321–0207.

(2) Public water systems must measure residual disinfectant concentrations with one of the analytical methods in the following table or one of the alternative methods listed in appendix A to subpart C of this part. If approved by the State, residual disinfectant concentrations for free chlorine and combined chlorine also may be measured by using DPD colorimetric test kits. In addition States may approve the use of the ITS free chlorine test strip for the determination of free chlorine. Use of the test strips is described in Method D99–003, ''Free Chlorine Species ($HOCl^-$ and OCl^-) by Test Strip,'' Revision 3.0, November 21, 2003, available from Industrial Test Systems, Inc., 1875 Langston St., Rock Hill, SC 29730. Free and total chlorine residuals may be measured continuously by adapting a specified chlorine residual method for use with a continuous monitoring instrument provided the chemistry, accuracy, and precision remain the same. Instruments used for continuous monitoring must be calibrated with a grab sample measurement at least every five days, or with a protocol approved by the State.

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[12] A description of the Hach FilterTrak Method 10133, "Determination of Turbidity by Laser Nephelometry," January 2000, Revision 2.0, can be obtained from; Hach Co., P.O. Box 389, Loveland, CO 80539–0389, telephone: 800–227–4224.

[13] Styrene divinyl benzene beads (e.g., AMCO-AEPA–1 or equivalent) and stabilized formazin (e.g., Hach StablCal™ or equivalent) are acceptable substitutes for formazin.

Residual	Methodology	SM[1]	SM Online[2]	Other
Free Chlorine	Amperometric Titration	4500–Cl D	4500–Cl D–00	D1253–03[3]
	DPD Ferrous Titrimetric	4500–Cl F	4500–Cl F–00.	
	DPD Colorimetric	4500–Cl G	4500–Cl G–00.	
	Syringaldazine (FACTS)	4500–Cl H	4500–Cl H–00.	
Total Chlorine	Amperometric Titration	4500–Cl D	4500–Cl D–00	D1253–03[3]
	Amperometric Titration (low level measurement)	4500–Cl E	4500–Cl E–00.	
	DPD Ferrous Titrimetric	4500–Cl F	4500–Cl F–00.	
	DPD Colorimetric	4500–Cl G	4500–Cl G–00.	
	Iodometric Electrode	4500–Cl I	4500–Cl I–00.	
Chlorine Dioxide	Amperometric Titration	4500–ClO_2 C	4500–ClO_2 C–00.	
	DPD Method	4500–ClO_2 D.		
	Amperometric Titration	4500–ClO_2 E	4500–ClO_2 E–00.	
	Spectrophotometric			327.0, Revision 1.1[4]
Ozone	Indigo Method	4500–O_3 B	4500–O_3 B–97.	

[1] All the listed methods are contained in the 18th, 19th, and 20th editions of *Standard Methods for the Examination of Water and Wastewater*, 1992, 1995, and 1998; the cited methods published in any of these three editions may be used.

[2] Standard Methods Online are available at *http://www.standardmethods.org*. The year in which each method was approved by the Standard Methods Committee is designated by the last two digits in the method number. The methods listed are the only Online versions that may be used.

[3] *Annual Book of ASTM Standards*, Vol. 11.01, 2004 ; ASTM International; any year containing the cited version of the method may be used. Copies of this method may be obtained from ASTM International, 100 Barr Harbor Drive, P.O. Box C700 West Conshohocken, PA 19428–2959.

[4] EPA Method 327.0, Revision 1.1, ''Determination of Chlorine Dioxide and Chlorite Ion in Drinking Water Using Lissamine Green B and Horseradish Peroxidase with Detection by Visible Spectrophotometry,'' USEPA, May 2005, EPA 815–R–05–008. Available online at *http://www.epa.gov/safewater/methods/sourcalt.html*.

(b) *Monitoring requirements for systems that do not provide filtration.* A public water system that uses a surface water source and does not provide filtration treatment must begin monitoring, as specified in this paragraph (b), beginning December 31, 1990, unless the State has determined that filtration is required in writing pursuant to §1412(b)(7)(C)(iii), in which case the State may specify alternative monitoring requirements, as appropriate, until filtration is in place. A public water system that uses a ground water source under the direct influence of surface water and does not provide filtration treatment must begin monitoring as specified in this paragraph (b) beginning December 31, 1990, or 6 months after the State determines that the ground water source is under the direct influence of surface water, whichever is later, unless the State has determined that filtration is required in writing pursuant to §1412(b)(7)(C)(iii), in which case the State may specify alternative monitoring requirements, as appropriate, until filtration is in place.

(1) Fecal coliform or total coliform density measurements as required by §141.71(a)(1) must be performed on representative source water samples immediately prior to the first or only point of disinfectant application. The system must sample for fecal or total coliforms at the following minimum frequency each week the system serves water to the public:

System size (persons served)	Samples/ week[1]
≤500	1
501 to 3,300	2
3,301 to 10,000	3
10,001 to 25,000	4
>25,000	5

[1] Must be taken on separate days.

Also, one fecal or total coliform density measurement must be made every day the system serves water to the public and the turbidity of the source water exceeds 1 NTU (these samples count towards the weekly coliform sampling requirement) unless the State determines that the system, for logistical reasons outside the system's control, cannot have the sample analyzed within 30 hours of collection.

(2) Turbidity measurements as required by §141.71(a)(2) must be performed on representative grab samples of source water immediately prior to the first or only point of disinfectant application every four hours (or more frequently) that the system serves water to the public. A public water system may substitute continuous turbidity monitoring for grab sample monitoring if it validates the continuous measurement for accuracy on a regular basis using a protocol approved by the State.

(3) The total inactivation ratio for each day that the system is in operation must be determined based on the $CT_{99.9}$ values in tables 1.1–1.6, 2.1, and 3.1 of this section, as appropriate. The parameters necessary to determine the total inactivation ratio must be monitored as follows:

(i) The temperature of the disinfected water must be measured at least once per day at each residual disinfectant concentration sampling point.

(ii) If the system uses chlorine, the pH of the disinfected water must be measured at least once per day at each chlorine residual disinfectant concentration sampling point.

(iii) The disinfectant contact time(s) (''T'') must be determined for each day during peak hourly flow.

(iv) The residual disinfectant concentration(s) (''C'') of the water before or at the first customer must be measured each day during peak hourly flow.

(v) If a system uses a disinfectant other than chlorine, the system may demonstrate to the State, through the use of a State-approvedprotocol for on-site disinfection challenge studies or other information satisfactory to the State, that $CT_{99.9}$ values other than those specified in tables 2.1 and 3.1 in this section other operational parameters are adequate to demonstrate that the system is achieving the minimum inactivation rates required by §141.72(a)(1).

TABLE 1.1—CT VALUES ($CT_{99.9}$) FOR 99.9 PERCENT INACTIVATION OF GIARDIA LAMBLIA CYSTS BY FREE CHLORINE AT 0.5 °C OR LOWER[1]

Residual (mg/l)	pH						
	≤6.0	6.5	7.0	7.5	8.0	8.5	≤9.0
≤0.4 ...	137	163	195	237	277	329	390
0.6	141	168	200	239	286	342	407
0.8	145	172	205	246	295	354	422
1.0	148	176	210	253	304	365	437
1.2	152	180	215	259	313	376	451
1.4	155	184	221	266	321	387	464
1.6	157	189	226	273	329	397	477
1.8	162	193	231	279	338	407	489
2.0	165	197	236	286	346	417	500
2.2	169	201	242	297	353	426	511
2.4	172	205	247	298	361	435	522
2.6	175	209	252	304	368	444	533
2.8	178	213	257	310	375	452	543
3.0	181	217	261	316	382	460	552

[1] These CT values achieve greater than a 99.99 percent inactivation of viruses. CT values between the indicated pH values may be determined by linear interpolation. CT values between the indicated temperatures of different tables may be determined by linear interpolation. If no interpolation is used, use the $CT_{99.9}$ value at the lower temperature and at the higher pH.

TABLE 1.2—CT VALUES ($CT_{99.9}$) FOR 99.9 PERCENT INACTIVATION OF GIARDIA LAMBLIA CYSTS BY FREE CHLORINE AT 5.0 °C[1]

Free residual (mg/l)	pH						
	≤6.0	6.5	7.0	7.5	8.0	8.5	≤9.0
≤0.4 ...	97	117	139	166	198	236	279
0.6 ..	100	120	143	171	204	244	291
0.8 ..	103	122	146	175	210	252	301
1.0 ..	105	125	149	179	216	260	312
1.2 ..	107	127	152	183	221	267	320
1.4 ..	109	130	155	187	227	274	329
1.6 ..	111	132	158	192	232	281	337
1.8 ..	114	135	162	196	238	287	345
2.0 ..	116	138	165	200	243	294	353
2.2 ..	118	140	169	204	248	300	361
2.4 ..	120	143	172	209	253	306	368
2.6 ..	122	146	175	213	258	312	375
2.8 ..	124	148	178	217	263	318	382
3.0 ..	126	151	182	221	268	324	389

[1] These CT values achieve greater than a 99.99 percent inactivation of viruses. CT values between the indicated pH values may be determined by linear interpolation. CT values between the indicated temperatures of different tables may be determined by linear interpolation. If no interpolation is used, use the $CT_{99.9}$ value at the lower temperature, and at the higher pH.

TABLE 1.3—CT VALUES ($CT_{99.9}$) FOR 99.9 PERCENT INACTIVATION OF GIARDIA LAMBLIA CYSTS BY FREE CHLORINE AT 10.0 °C[1]

Free residual (mg/l)	pH						
	≤6.0	6.5	7.0	7.5	8.0	8.5	≤9.0
≤0.4 ...	73	88	104	125	149	177	209
0.6 ..	75	90	107	128	153	183	218
0.8 ..	78	92	110	131	158	189	226
1.0 ..	79	94	112	134	162	195	234
1.2 ..	80	95	114	137	166	200	240
1.4 ..	82	98	116	140	170	206	247
1.6 ..	83	99	119	144	174	211	253
1.8 ..	86	101	122	147	179	215	259
2.0 ..	87	104	124	150	182	221	265
2.2 ..	89	105	127	153	186	225	271
2.4 ..	90	107	129	157	190	230	276
2.6 ..	92	110	131	160	194	234	281
2.8 ..	93	111	134	163	197	239	287
3.0 ..	95	113	137	166	201	243	292

[1] These CT values achieve greater than a 99.99 percent inactivation of viruses. CT values between the indicated pH values may be determined by linear interpolation. CT values between the indicated temperatures of different tables may be determined by linear interpolation. If no interpolation is used, use the $CT_{99.9}$ value at the lower temperature, and at the higher pH.

TABLE 1.4—CT VALUES ($CT_{99.9}$) FOR 99.9 PERCENT INACTIVATION OF GIARDIA LAMBLIA CYSTS BY FREE CHLORINE AT 15.0 °C[1]

Free residual (mg/l)	pH						
	≤6.0	6.5	7.0	7.5	8.0	8.5	≤9.0
≤0.4 ...	49	59	70	83	99	118	140
0.6 ..	50	60	72	86	102	122	146
0.8 ..	52	61	73	88	105	126	151
1.0 ..	53	63	75	90	108	130	156
1.2 ..	54	64	76	92	111	134	160
1.4 ..	55	65	78	94	114	137	165
1.6 ..	56	66	79	96	116	141	169
1.8 ..	57	68	81	98	119	144	173
2.0 ..	58	69	83	100	122	147	177
2.2 ..	59	70	85	102	124	150	181
2.4 ..	60	72	86	105	127	153	184
2.6 ..	61	73	88	107	129	156	188
2.8 ..	62	74	89	109	132	159	191
3.0 ..	63	76	91	111	134	162	195

[1] These CT values achieve greater than a 99.99 percent inactivation of viruses. CT values between the indicated pH values may be determined by linear interpolation. CT values between the indicated temperatures of different tables may be determined by linear interpolation. If no interpolation is used, use the $CT_{99.9}$ value at the lower temperature, and at the higher pH.

TABLE 1.5—CT VALUES ($CT_{99.9}$) FOR 99.9 PERCENT INACTIVATION OF GIARDIA LAMBLIA CYSTS BY FREE CHLORINE AT 20 °C[1]

Free residual (mg/l)	pH						
	≤6.0	6.5	7.0	7.5	8.0	8.5	≤9.0
≤0.4 ...	36	44	52	62	74	89	105
0.6	38	45	54	64	77	92	109
0.8	39	46	55	66	79	95	113
1.0	39	47	56	67	81	98	117
1.2	40	48	57	69	83	100	120
1.4	41	49	58	70	85	103	123
1.6	42	50	59	72	87	105	126

TABLE 1.5—CT VALUES ($CT_{99.9}$) FOR 99.9 PERCENT INACTIVATION OF GIARDIA LAMBLIA CYSTS BY FREE CHLORINE AT 20 °C[1]—Continued

Free residual (mg/l)	pH						
	≤6.0	6.5	7.0	7.5	8.0	8.5	≤9.0
1.8	43	51	61	74	89	108	129
2.0	44	52	62	75	91	110	132
2.2	44	53	63	77	93	113	135
2.4	45	54	65	78	95	115	138
2.6	46	55	66	80	97	117	141
2.8	47	56	67	81	99	119	143
3.0	47	57	68	83	101	122	146

[1] These CT values achieve greater than a 99.99 percent inactivation of viruses. CT values between the indicated pH values may be determined by linear interpolation. CT values between the indicated temperatures of different tables may be determined by linear interpolation. If no interpolation is used, use the $CT_{99.9}$ value at the lower temperature, and at the higher pH.

TABLE 1.6—CT VALUES ($CT_{99.9}$) FOR 99.9 PERCENT INACTIVATION OF GIARDIA LAMBLIA CYSTS BY FREE CHLORINE AT 25 °C[1] AND HIGHER

Free residual (mg/l)	pH						
	≤6.0	6.5	7.0	7.5	8.0	8.5	≤9.0
≤0.4 ...	24	29	35	42	50	59	70
0.6	25	30	36	43	51	61	73
0.8	26	31	37	44	53	63	75
1.0	26	31	37	45	54	65	78
1.2	27	32	38	46	55	67	80
1.4	27	33	39	47	57	69	82
1.6	28	33	40	48	58	70	84
1.8	29	34	41	49	60	72	86
2.0	29	35	41	50	61	74	88
2.2	30	35	42	51	62	75	90
2.4	30	36	43	52	63	77	92
2.6	31	37	44	53	65	78	94
2.8	31	37	45	54	66	80	96
3.0	32	38	46	55	67	81	97

[1] These CT values achieve greater than a 99.99 percent inactivation of viruses. CT values between the indicated pH values may be determined by linear interpolation. CT values between the indicated temperatures of different tables may be determined by linear interpolation. If no interpolation is used, use the $CT_{99.9}$ value at the lower temperature, and at the higher pH.

TABLE 2.1—CT VALUES ($CT_{99.9}$) FOR 99.9 PERCENT INACTIVATION OF GIARDIA LAMBLIA CYSTS BY CHLORINE DIOXIDE AND OZONE[1]

	Temperature					
	<1 °C	5 °C	10 °C	15 °C	20 °C	≥25 °C
Chlorine dioxide	63	26	23	19	15	11
Ozone	2.9	1.9	1.4	0.95	0.72	0.48

[1] These CT values achieve greater than 99.99 percent inactivation of viruses. CT values between the indicated temperatures may be determined by linear interpolation. If no interpolation is used, use the $CT_{99.9}$ value at the lower temperature for determining $CT_{99.9}$ values between indicated temperatures.

TABLE 3.1—CT VALUES ($CT_{99.9}$) FOR 99.9 PERCENT INACTIVATION OF GIARDIA LAMBLIA CYSTS BY CHLORAMINES[1]

Temperature					
<1 °C	5 °C	10 °C	15 °C	20 °C	25 °C
3,800	2,200	1,850	1,500	1,100	750

[1] These values are for pH values of 6 to 9. These CT values may be assumed to achieve greater than 99.99 percent inactivation of viruses only if chlorine is added and mixed in the water prior to the addition of ammonia. If this condition is not met, the system must demonstrate, based on on-site studies or other information, as approved by the State, that the system is achieving at least 99.99 percent inactivation of viruses. CT values between the indicated temperatures may be determined by linear interpolation. If no interpolation is used, use the $CT_{99.9}$ value at the lower temperature for determining $CT_{99.9}$ values between indicated temperatures.

(4) The total inactivation ratio must be calculated as follows:

(i) If the system uses only one point of disinfectant application, the system may determine the total inactivation ratio based on either of the following two methods:

(A) One inactivation ratio ($CTcalc/CT_{99.9}$) is determined before or at the first customer during peak hourly flow and if the $CTcalc/CT_{99.9} \geq 1.0$, the 99.9 percent *Giardia lamblia* inactivation requirement has been achieved; or

(B) Successive $CTcalc/CT_{99.9}$ values, representing sequential inactivation ratios, are determined between the point of disinfectant application and a point before or at the first customer during peak hourly flow. Under this alternative, the following method must be used to calculate the total inactivation ratio:

$$\text{(1)} \quad \text{Determine } \frac{\text{CTcalc}}{\text{CT}_{99.9}} \text{ for each sequence.}$$

$$\text{(2)} \quad \text{Add the } \frac{\text{CTcalc}}{\text{CT}_{99.9}} \text{ values together} \left(\sum \frac{(\text{CTcalc})}{\text{CT}_{99.9}} \right)$$

$$\text{(3)} \quad \text{If } \sum \left(\frac{\text{CTcalc}}{\text{CT}_{99.9}} \right) \geq 1.0, \text{ the 99.9 percent } \textit{Giardia}$$

lamblia inactivation requirement has been achieved.

(ii) If the system uses more than one point of disinfectant application before or at the first customer, the system must determine the CT value of each disinfection sequence immediately prior to the next point of disinfectant application during peak hourly flow. The CTcalc/$\text{CT}_{99.9}$ value of each sequence and

$$\sum \frac{\text{CTcalc}}{\text{CT}_{99.9}}$$

must be calculated using the method in paragraph (b)(4)(i)(B) of this section to determine if the system is in compliance with §141.72(a).

(iii) Although not required, the total percent inactivation for a system with one or more points of residual disinfectant concentration monitoring may be calculated by solving the following equation:

$$\text{Percent inactivation} = 100 - \frac{100}{10^{z}}$$

$$\text{where } z = 3 \times \sum \left(\frac{\text{CTcalc}}{\text{CT}_{99.9}} \right)$$

(5) The residual disinfectant concentration of the water entering the distribution system must be monitored continuously, and the lowest value must be recorded each day, except that if there is a failure in the continuous monitoring equipment, grab sampling every 4 hours may be conducted in lieu of continuous monitoring, but for no more than 5 working days following the failure of the equipment, and systems serving 3,300 or fewer persons may take grab samples in lieu of providing continuous monitoring on an ongoing basis at the frequencies prescribed below:

System size by population	Samples/ day[1]
<500	1
501 to 1,000	2
1,001 to 2,500	3
2,501 to 3,300	4

[1] The day's samples cannot be taken at the same time. The sampling intervals are subject to State review and approval.

If at any time the residual disinfectant concentration falls below 0.2 mg/l in a system using grab sampling in lieu of continuous monitoring, the system must take a grab sample every 4 hours until the residual concentration is equal to or greater than 0.2 mg/l.

(6)(i) Until March 31, 2016, the residual disinfectant concentration must be measured at least at the same points in the distribution system and at the same time as total coliforms are sampled, as specified in §141.21. Beginning April 1, 2016, the residual disinfectant concentration must be measured at least at the same points in the distribution system and at the same time as total coliforms are sampled, as specified in §§141.854 through 141.858. The State may allow a public water system which uses both a surface water source or a ground water source under direct influence of surface water, and a ground water source, to take disinfectant residual samples at points other than the total coliform sampling points if the State determines that such points are more representative of treated (disinfected) water quality within the distribution system. Heterotrophic bacteria, measured as heterotrophic plate count (HPC) as specified in paragraph (a)(1) of this section, may be measured in lieu of residual disinfectant concentration.

(ii) If the State determines, based on site-specific considerations, that a system has no means for having a sample transported and analyzed for HPC by a certified laboratory under the requisite time and temperature conditions specified by paragraph (a)(1) of this section and that the system is providing adequate disinfection in the distribution system, the requirements of paragraph (b)(6)(i) of this section do not apply to that system.

(c) *Monitoring requirements for systems using filtration treatment.* A public water system that uses a surface water source or a ground water source under the influence of surface water and provides filtration treatment must monitor in accordance with this paragraph (c) beginning June 29, 1993, or when filtration is installed, whichever is later.

(1) Turbidity measurements as required by §141.73 must be performed on representative samples of the system's filtered water every four hours (or more frequently) that the system serves water to the public. A public water system may substitute continuous turbidity monitoring for grab sample monitoring if it validates the continuous measurement for accuracy on a regular basis using a protocol approved by the State. For any systems using slow sand filtration or filtration treatment other than conventional treatment, direct filtration, or diatomaceous earth filtration, the State may reduce the sampling frequency to once per day if it determines that less frequent monitoring is sufficient to indicate effective filtration performance. For systems serving 500 or fewer persons, the State may reduce the turbidity sampling frequency to once per day, regardless of the type of filtration treatment used, if the State determines that less frequent monitoring is sufficient to indicate effective filtration performance.

(2) The residual disinfectant concentration of the water entering the distribution system must be monitored continuously, and the lowest value must be recorded each day, except that if there is a failure in the continuous monitoring equipment, grab sampling every 4 hours may be conducted in lieu of continuous monitoring, but for no more than 5 working days following the failure of the equipment, and systems serving 3,300 or fewer persons may take grab samples in lieu of providing continuous monitoring on an ongoing basis at the frequencies each day prescribed below:

System size by population	Samples/ day[1]
±500	1
501 to 1,000	2
1,001 to 2,500	3
2,501 to 3,300	4

[1] The day's samples cannot be taken at the same time. The sampling intervals are subject to State review and approval.

If at any time the residual disinfectant concentration falls below 0.2 mg/l in a system using grab sampling in lieu of continuous monitoring, the system must take a grab sample every 4 hours until the residual disinfectant concentration is equal to or greater than 0.2 mg/l.

(3)(i) Until March 31, 2016, the residual disinfectant concentration must be measured at least at the same points in the distribution system and at the same time as total coliforms are sampled, as specified in §141.21. Beginning April 1, 2016, the residual disinfectant concentration must be measured at least at the same points in the distribution system and at the same time as total coliforms are sampled, as specified in §§141.854 through 141.858. The State may allow a public water system which uses both a surface water source or a ground water source under direct influence of surface water, and a ground water source, to take disinfectant residual samples at points other than the total coliform sampling points if the State determines that such points are more representative of treated (disinfected) water quality within the distribution system. Heterotrophic bacteria, measured as heterotrophic plate count (HPC) as specified in paragraph (a)(1) of this section, may be measured in lieu of residual disinfectant concentration.

(ii) If the State determines, based on site-specific considerations, that a system has no means for having a sample transported and analyzed for HPC by a certified laboratory under the requisite time and temperature conditions specified by paragraph (a)(1) of this section and that the system is providing adequate disinfection in the distribution system, the requirements of paragraph (c)(3)(i) of this section do not apply to that system.

[54 FR 27527, June 29, 1989, as amended at 59 FR 62470, Dec. 5, 1994; 60 FR 34086, June 29, 1995; 64 FR 67465, Dec. 1, 1999; 67 FR 65252, Oct. 23, 2002; 67 FR 65901, Oct. 29, 2002; 69 FR 38856, June 29, 2004; 72 FR 11247, Mar. 12, 2007; 74 FR 30958, June 29, 2009; 78 FR 10347, Feb. 13, 2013]

§141.75 Reporting and recordkeeping requirements.

(a) A public water system that uses a surface water source and does not provide filtration treatment must report monthly to the State the information specified in this paragraph (a) beginning December 31, 1990, unless the State has determined that filtration is required in writing pursuant to section 1412(b)(7)(C)(iii), in which case the State may specify alternative reporting requirements, as appropriate, until filtration is in place. A public water system that uses a ground water source under the direct influence of surface water and does not provide filtration treatment must report monthly to the State the information specified in this paragraph (a) beginning December 31, 1990, or 6 months after the State determines that the ground water source is under the direct influence of surface water, whichever is later, unless the State has determined that filtration is required in writing pursuant to §1412(b)(7)(C)(iii), in which case the State may specify alternative reporting requirements, as appropriate, until filtration is in place.

(1) Source water quality information must be reported to the State within 10 days after the end of each month the system serves water to the public. Information that must be reported includes:

(i) The cumulative number of months for which results are reported.

(ii) The number of fecal and/or total coliform samples, whichever are analyzed during the month (if a system monitors for both, only fecal coliforms must be reported), the dates of sample collection, and the dates when the turbidity level exceeded 1 NTU.

(iii) The number of samples during the month that had equal to or less than 20/100 ml fecal coliforms and/or equal to or less than 100/100 ml total coliforms, whichever are analyzed.

(iv) The cumulative number of fecal or total coliform samples, whichever are analyzed, during the previous six months the system served water to the public.

(v) The cumulative number of samples that had equal to or less than 20/100 ml fecal coliforms or equal to or less than 100/100 ml total coliforms, whichever are analyzed, during the previous six months the system served water to the public.

(vi) The percentage of samples that had equal to or less than 20/100 ml fecal coliforms or equal to or less than 100/100 ml total coliforms, whichever are analyzed, during the previous six months the system served water to the public.

(vii) The maximum turbidity level measured during the month, the date(s) of occurrence for any measurement(s) which exceeded 5 NTU, and the date(s) the occurrence(s) was reported to the State.

(viii) For the first 12 months of recordkeeping, the dates and cumulative number of events during which the turbidity exceeded 5 NTU, and after one year of recordkeeping for turbidity measurements, the dates and cumulative number of events during which the turbidity exceeded 5 NTU in the previous 12 months the system served water to the public.

(ix) For the first 120 months of recordkeeping, the dates and cumulative number of events during which the turbidity exceeded 5 NTU, and after 10 years of recordkeeping for turbidity measurements, the dates and cumulative number of events during which the turbidity exceeded 5 NTU in the previous 120 months the system served water to the public.

(2) Disinfection information specified in §141.74(b) must be reported to the State within 10 days after the end of each month the system serves water to the public. Information that must be reported includes:

(i) For each day, the lowest measurement of residual disinfectant concentration in mg/l in water entering the distribution system.

(ii) The date and duration of each period when the residual disinfectant concentration in water entering the distribution system fell below 0.2 mg/l and when the State was notified of the occurrence.

(iii) The daily residual disinfectant concentration(s) (in mg/l) and disinfectant contact time(s) (in minutes) used for calculating the CT value(s).

(iv) If chlorine is used, the daily measurement(s) of pH of disinfected water following each point of chlorine disinfection.

(v) The daily measurement(s) of water temperature in °C following each point of disinfection.

(vi) The daily CTcalc and CTcalc/$CT_{99.9}$ values for each disinfectant measurement or sequence and the sum of all CTcalc/$CT_{99.9}$ values ((CTcalc/$CT_{99.9}$)) before or at the first customer.

(vii) The daily determination of whether disinfection achieves adequate *Giardia* cyst and virus inactivation, *i.e.*, whether (CTcalc/$CT_{99.9}$) is at least 1.0 or, where disinfectants other than chlorine are used, other indicator conditions that the State determines are appropriate, are met.

(viii) The following information on the samples taken in the distribution system in conjunction with total coliform monitoring pursuant to §141.72:

(A) Number of instances where the residual disinfectant concentration is measured;

(B) Number of instances where the residual disinfectant concentration is not measured but heterotrophic bacteria plate count (HPC) is measured;

(C) Number of instances where the residual disinfectant concentration is measured but not detected and no HPC is measured;

(D) Number of instances where the residual disinfectant concentration is detected and where HPC is >500/ml;

(E) Number of instances where the residual disinfectant concentration is not measured and HPC is >500/ml;

(F) For the current and previous month the system served water to the public, the value of ''V'' in the following formula:

$$V = \frac{c+d+e}{a+b} \times 100$$

where:

a=the value in paragraph (a)(2)(viii)(A) of this section,
b=the value in paragraph (a)(2)(viii)(B) of this section,
c=the value in paragraph (a)(2)(viii)(C) of this section,
d=the value in paragraph (a)(2)(viii)(D) of this section, and
e=the value in paragraph (a)(2)(viii)(E) of this section.

(G) If the State determines, based on site-specific considerations, that a system has no means for having a sample transported and analyzed for HPC by a certified laboratory under the requisite time and temperature conditions specified by §141.74(a)(1) and that the system is providing adequate disinfection in the distribution system, the requirements of paragraph (a)(2)(viii) (A)–(F) of this section do not apply to that system.

(ix) A system need not report the data listed in paragraphs (a)(2) (i), and (iii)–(vi) of this section if all data listed in paragraphs (a)(2) (i)–(viii) of this section remain on file at the system, and the State determines that:

(A) The system has submitted to the State all the information required by paragraphs (a)(2) (i)–(viii) of this section for at least 12 months; and

(B) The State has determined that the system is not required to provide filtration treatment.

(3) No later than ten days after the end of each Federal fiscal year (September 30), each system must provide to the State a report which summarizes its compliance with all watershed control program requirements specified in §141.71(b)(2).

(4) No later than ten days after the end of each Federal fiscal year (September 30), each system must provide to the State a report on the on-site inspection conducted during that year pursuant to §141.71(b)(3), unless the on-site inspection was conducted by the State. If the inspection was conducted by the State, the State must provide a copy of its report to the public water system.

(5)(i) Each system, upon discovering that a waterborne disease outbreak potentially attributable to that water system has occurred, must report that occurrence to the State as soon as possible, but no later than by the end of the next business day.

(ii) If at any time the turbidity exceeds 5 NTU, the system must consult with the primacy agency as soon as practical, but no later than 24 hours after the exceedance is known, in accordance with the public notification requirements under §141.203(b)(3).

(iii) If at any time the residual falls below 0.2 mg/l in the water entering the distribution system, the system must notify the State as soon as possible, but no later than by the end of the next business day. The system also must notify the State by the end of the next business day whether or not the residual was restored to at least 0.2 mg/l within 4 hours.

(b) A public water system that uses a surface water source or a ground water source under the direct influence of surface water and provides filtration treatment must report monthly to the State the information specified in this paragraph (b) beginning June 29, 1993, or when filtration is installed, whichever is later.

(1) Turbidity measurements as required by §141.74(c)(1) must be reported within 10 days after the end of each month the system serves water to the public. Information that must be reported includes:

(i) The total number of filtered water turbidity measurements taken during the month.

(ii) The number and percentage of filtered water turbidity measurements taken during the month which are less than or equal to the turbidity limits specified in §141.73 for the filtration technology being used.

(iii) The date and value of any turbidity measurements taken during the month which exceed 5 NTU.

(2) Disinfection information specified in §141.74(c) must be reported to the State within 10 days after the end of each month the system serves water to the public. Information that must be reported includes:

(i) For each day, the lowest measurement of residual disinfectant concentration in mg/l in water entering the distribution system.

(ii) The date and duration of each period when the residual disinfectant concentration in water entering the distribution system fell below 0.2 mg/l and when the State was notified of the occurrence.

(iii) The following information on the samples taken in the distribution system in conjunction with total coliform monitoring pursuant to §141.72:

(A) Number of instances where the residual disinfectant concentration is measured;

(B) Number of instances where the residual disinfectant concentration is not measured but heterotrophic bacteria plate count (HPC) is measured;

(C) Number of instances where the residual disinfectant concentration is measured but not detected and no HPC is measured;

(D) Number of instances where no residual disinfectant concentration is detected and where HPC is >500/ml;

(E) Number of instances where the residual disinfectant concentration is not measured and HPC is >500/ml;

(F) For the current and previous month the system serves water to the public, the value of ''V'' in the following formula:

$$V = \frac{c + d + e}{a + b} \times 100$$

where:

a=the value in paragraph (b)(2)(iii)(A) of this section,
b=the value in paragraph (b)(2)(iii)(B) of this section,
c=the value in paragraph (b)(2)(iii)(C) of this section,
d=the value in paragraph (b)(2)(iii)(D) of this section, and
e=the value in paragraph (b)(2)(iii)(E) of this section.

(G) If the State determines, based on site-specific considerations, that a system has no means for having a sample transported and analyzed for HPC by a certified laboratory within the requisite time and temperature conditions specified by §141.74(a)(1) and that the system is providing adequate disinfection in the distribution system, the requirements of paragraph (b)(2)(iii) (A)–(F) of this section do not apply.

(iv) A system need not report the data listed in paragraph (b)(2)(i) of this section if all data listed in paragraphs (b)(2) (i)–(iii) of this section remain on file at the system and the State determines that the system has submitted all the information required by paragraphs (b)(2) (i)–(iii) of this section for at least 12 months.

(3)(i) Each system, upon discovering that a waterborne disease outbreak potentially attributable to that water system has occurred, must report that occurrence to the State as soon as possible, but no later than by the end of the next business day.

(ii) If at any time the turbidity exceeds 5 NTU, the system must consult with the primacy agency as soon as practical, but no later than 24 hours after the exceedance is known, in accordance with the public notification requirements under §141.203(b)(3).

(iii) If at any time the residual falls below 0.2 mg/l in the water entering the distribution system, the system must notify the State as soon as possible, but no later than by the end of the next business day. The system also must notify the State by the end of the next business day whether or not the residual was restored to at least 0.2 mg/l within 4 hours.

[54 FR 27527, June 29, 1989, as amended at 65 FR 26022, May 4, 2000; 69 FR 38856, June 29, 2004]

§141.76 Recycle provisions.

(a) *Applicability.* All subpart H systems that employ conventional filtration or direct filtration treatment and that recycle spent filter backwash water, thickener supernatant, or liquids from dewatering processes must meet the requirements in paragraphs (b) through (d) of this section.

(b) *Reporting.* A system must notify the State in writing by Decemeber 8, 2003, if the system recycles spent filter backwash water, thickener supernatant, or liquids from dewatering processes. This notification must include, at a minimum, the information specified in paragraphs (b)(1) and (2) of this section.

(1) A plant schematic showing the origin of all flows which are recycled (including, but not limited to, spent filter backwash water, thickener supernatant, and liquids from dewatering processes), the hydraulic conveyance used to transport them, and the location where they are re-introduced back into the treatment plant.

(2) Typical recycle flow in gallons per minute (gpm), the highest observed plant flow experienced in the previous year (gpm), design flow for the treatment plant (gpm), and State-approved operating capacity for the plant where the State has made such determinations.

(c) *Treatment technique requirement.* Any system that recycles spent filter backwash water, thickener supernatant, or liquids from dewatering processes must return these flows through the processes of a system's existing conventional or direct filtration system as defined in §141.2 or at an alternate location approved by the State by June 8, 2004. If capital improvements are required to modify the recycle location to meet this requirement, all capital improvements must be completed no later than June 8, 2006.

(d) *Recordkeeping.* The system must collect and retain on file recycle flow information specified in paragraphs (d)(1) through (6) of this section for review and evaluation by the State beginning June 8, 2004.

(1) Copy of the recycle notification and information submitted to the State under paragraph (b) of this section.

(2) List of all recycle flows and the frequency with which they are returned.

(3) Average and maximum backwash flow rate through the filters and the average and maximum duration of the filter backwash process in minutes.

(4) Typical filter run length and a written summary of how filter run length is determined.

(5) The type of treatment provided for the recycle flow.

(6) Data on the physical dimensions of the equalization and/or treatment units, typical and maximum hydraulic loading rates, type of treatment chemicals used and average dose and frequency of use, and frequency at which solids are removed, if applicable.

[66 FR 31103, June 8, 2001]

Subpart I—Control of Lead and Copper

SOURCE: 56 FR 26548, June 7, 1991, unless otherwise noted.

§141.80 General requirements.

(a) *Applicability and effective dates.* (1) The requirements of this subpart I constitute the national primary drinking water regulations for lead and copper. Unless otherwise indicated, each of the provisions of this subpart applies to community water systems and non-transient, non-community water systems (hereinafter referred to as "water systems" or "systems").

(2) [Reserved]

(b) *Scope.* These regulations establish a treatment technique that includes requirements for corrosion control treatment, source water treatment, lead service line replacement, and public education. These requirements are triggered, in some cases, by lead and copper action levels measured in samples collected at consumers' taps.

(c) *Lead and copper action levels.* (1) The lead action level is exceeded if the concentration of lead in more than 10 percent of tap water samples collected during any monitoring period conducted in accordance with §141.86 is greater than 0.015 mg/L (*i.e.*, if the "90th percentile" lead level is greater than 0.015 mg/L).

(2) The copper action level is exceeded if the concentration of copper in more than 10 percent of tap water samples collected during any monitoring period conducted in accordance with §141.86 is greater than 1.3 mg/L (*i.e.*, if the "90th percentile" copper level is greater than 1.3 mg/L).

(3) The 90th percentile lead and copper levels shall be computed as follows:

(i) The results of all lead or copper samples taken during a monitoring period shall be placed in ascending order from the sample with the lowest concentration to the sample with the highest concentration. Each sampling result shall be assigned a number, ascending by single integers beginning with the number 1 for the sample with the lowest contaminant level. The number assigned to the sample with the highest contaminant level shall be equal to the total number of samples taken.

(ii) The number of samples taken during the monitoring period shall be multiplied by 0.9.

(iii) The contaminant concentration in the numbered sample yielded by the calculation in paragraph (c)(3)(ii) is the 90th percentile contaminant level.

(iv) For water systems serving fewer than 100 people that collect 5 samples per monitoring period, the 90th percentile is computed by taking the average of the highest and second highest concentrations.

(v) For a public water system that has been allowed by the State to collect fewer than five samples in accordance with §141.86(c), the sample result with the highest concentration is considered the 90th percentile value.

(d) *Corrosion control treatment requirements.* (1) All water systems shall install and operate optimal corrosion control treatment as defined in §141.2.

(2) Any water system that complies with the applicable corrosion control treatment requirements specified by the State under §§141.81 and 141.82 shall be deemed in compliance with the treatment requirement contained in paragraph (d)(1) of this section.

(e) *Source water treatment requirements.* Any system exceeding the lead or copper action level shall implement all applicable source water treatment requirements specified by the State under §141.83.

(f) *Lead service line replacement requirements.* Any system exceeding the lead action level after implementation of applicable corrosion control and source water treatment requirements shall complete the lead service line replacement requirements contained in §141.84.

(g) *Public education requirements.* Pursuant to §141.85, all water systems must provide a consumer notice of lead tap water monitoring results to persons served at the sites (taps) that are tested. Any system exceeding the lead action level shall implement the public education requirements.

(h) *Monitoring and analytical requirements.* Tap water monitoring for lead and copper, monitoring for water quality parameters, source water monitoring for lead and copper, and analyses of the monitoring results under this subpart shall be completed in compliance with §§141.86, 141.87, 141.88, and 141.89.

(i) *Reporting requirements.* Systems shall report to the State any information required by the treatment provisions of this subpart and §141.90.

(j) *Recordkeeping requirements.* Systems shall maintain records in accordance with §141.91.

(k) *Violation of national primary drinking water regulations.* Failure to comply with the applicable requirements of §§141.80–141.91, including requirements established by the State pursuant to these provisions, shall constitute a violation of the national primary drinking water regulations for lead and/or copper.

[56 FR 26548, June 7, 1991; 57 FR 28788, June 29, 1992, as amended at 72 FR 57814, Oct. 10, 2007]

§141.81 Applicability of corrosion control treatment steps to small, medium-size and large water systems.

(a) Systems shall complete the applicable corrosion control treatment requirements described in §141.82 by the deadlines established in this section.

(1) A large system (serving >50,000 persons) shall complete the corrosion control treatment steps specified in paragraph (d) of this section, unless it is deemed to have optimized corrosion control under paragraph (b)(2) or (b)(3) of this section.

(2) A small system (serving ≤3300 persons) and a medium-size system (serving >3,300 and ≤50,000 persons) shall complete the corrosion control treatment steps specified in paragraph (e) of this section, unless it is deemed to have optimized corrosion control under paragraph (b)(1), (b)(2), or (b)(3) of this section.

(b) A system is deemed to have optimized corrosion control and is not required to complete the applicable corrosion control treatment steps identified in this section if the system satisfies one of the criteria specified in paragraphs (b)(1) through (b)(3) of this section. Any such system deemed to have optimized corrosion control under this paragraph, and which has treatment in place, shall continue to operate and maintain optimal corrosion control treatment and meet any requirements that the State determines appropriate to ensure optimal corrosion control treatment is maintained.

(1) A small or medium-size water system is deemed to have optimized corrosion control if the system meets the lead and copper action levels during each of two consecutive six-month monitoring periods conducted in accordance with §141.86.

(2) Any water system may be deemed by the State to have optimized corrosion control treatment if the system demonstrates to the satisfaction of the State that it has conducted activities equivalent to the corrosion control steps applicable to such system under this section. If the State makes this determination, it shall provide the system with written notice explaining the basis for its decision and shall specify the water quality control parameters representing optimal corrosion control in accordance with §141.82(f). Water systems deemed to have optimized corrosion control under this paragraph shall operate in compliance with the State-designated optimal water quality control parameters in accordance with §141.82(g) and continue to conduct lead and copper tap and water quality parameter sampling in accordance with §141.86(d)(3) and §141.87(d), respectively. A system shall provide the State with the following information in order to support a determination under this paragraph:

(i) The results of all test samples collected for each of the water quality parameters in §141.82(c)(3).

(ii) A report explaining the test methods used by the water system to evaluate the corrosion control treatments listed in §141.82(c)(1), the results of all tests conducted, and the basis for the system's selection of optimal corrosion control treatment;

(iii) A report explaining how corrosion control has been installed and how it is being maintained to insure minimal lead and copper concentrations at consumers' taps; and

(iv) The results of tap water samples collected in accordance with §141.86 at least once every six months for one year after corrosion control has been installed.

(3) Any water system is deemed to have optimized corrosion control if it submits results of tap water monitoring conducted in accordance with §141.86 and source water monitoring conducted in accordance with §141.88 that demonstrates for two consecutive 6-month monitoring periods that the difference between the 90th percentile tap water lead level computed under §141.80(c)(3), and the highest source water lead concentration is less than the Practical Quantitation Level for lead specified in §141.89(a)(1)(ii).

(i) Those systems whose highest source water lead level is below the Method Detection Limit may also be deemed to have optimized corrosion control under this paragraph if the 90th percentile tap water lead level is less than or equal to the Practical Quantitation Level for lead for two consecutive 6-month monitoring periods.

(ii) Any water system deemed to have optimized corrosion control in accordance with this paragraph shall continue monitoring for lead and copper at the tap no less frequently than once every three calendar years using the reduced number of sites specified in §141.86(c) and collecting the samples at times and locations specified in §141.86(d)(4)(iv). Any such system that has not conducted a round of monitoring pursuant to §141.86(d) since September 30, 1997, shall complete a round of monitoring pursuant to this paragraph no later than September 30, 2000.

(iii) Any water system deemed to have optimized corrosion control pursuant to this paragraph shall notify the State in writing pursuant to §141.90(a)(3) of any upcoming long-term change in treatment or addition of a new source as described in that section. The State must review and approve the addition of a new source or long-term change in water treatment before it is implemented by the water system. The State may require any such system to conduct additional monitoring or to take other action the State deems appropriate to ensure that such systems maintain minimal levels of corrosion in the distribution system.

(iv) As of July 12, 2001, a system is not deemed to have optimized corrosion control under this paragraph, and shall implement corrosion control treatment pursuant to paragraph (b)(3)(v) of this section unless it meets the copper action level.

(v) Any system triggered into corrosion control because it is no longer deemed to have optimized corrosion control under this paragraph shall implement corrosion control treatment in accordance with the deadlines in paragraph (e) of this section. Any such large system shall adhere to the schedule specified in that paragraph for medium-size systems, with the time periods for completing each step being triggered by the date the system is no longer deemed to have optimized corrosion control under this paragraph.

(c) Any small or medium-size water system that is required to complete the corrosion control steps due to its exceedance of the lead or copper action level may cease completing the treatment steps whenever the system meets both action levels during each of two consecutive monitoring periods conducted pursuant to §141.86 and submits the results to the State. If any such water system thereafter exceeds the lead or copper action level during any monitoring period, the system (or the State, as the case may be) shall recommence completion of the applicable treatment steps, beginning with the first treatment step which was not previously completed in its entirety. The State may require a system to repeat treatment steps previously completed by the system where the State determines that this is necessary to implement properly the treatment requirements of this section. The State shall notify the system in writing of such a determination and explain the basis for its decision. The requirement for any small- or medium-size system to implement corrosion control treatment steps in accordance with paragraph (e) of this section (including systems deemed to have optimized corrosion control under paragraph (b)(1) of this section) is triggered whenever any small- or medium-size system exceeds the lead or copper action level.

(d) *Treatment steps and deadlines for large systems.* Except as provided in paragraph (b) (2) and (3) of this section, large systems shall complete the following corrosion control treatment steps (described in the referenced portions of §§141.82, 141.86, and 141.87) by the indicated dates.

(1) *Step 1:* The system shall conduct initial monitoring (§141.86(d)(1) and §141.87(b)) during two consecutive six-month monitoring periods by January 1, 1993.

(2) *Step 2:* The system shall complete corrosion control studies (§141.82(c)) by July 1, 1994.

(3) *Step 3:* The State shall designate optimal corrosion control treatment (§141.82(d)) by January 1, 1995.

(4) *Step 4:* The system shall install optimal corrosion control treatment (§141.82(e)) by January 1, 1997.

(5) *Step 5:* The system shall complete follow-up sampling (§141.86(d)(2) and §141.87(c)) by January 1, 1998.

(6) *Step 6:* The State shall review installation of treatment and designate optimal water quality control parameters (§141.82(f)) by July 1, 1998.

(7) *Step 7:* The system shall operate in compliance with the State-specified optimal water quality control parameters (§141.82(g)) and continue to conduct tap sampling (§141.86(d)(3) and §141.87(d)).

(e) *Treatment Steps and deadlines for small and medium-size systems.* Except as provided in paragraph (b) of this section, small and medium-size systems shall complete the following corrosion control treatment steps (described in the referenced portions of §§141.82, 141.86 and 141.87) by the indicated time periods.

(1) *Step 1:* The system shall conduct initial tap sampling (§141.86(d)(1) and §141.87(b)) until the system either exceeds the lead or copper action level or becomes eligible for reduced monitoring under §141.86(d)(4). A system exceeding the lead or copper action level shall recommend optimal corrosion control treatment (§141.82(a)) within six months after the end of the monitoring period during which it exceeds one of the action levels.

(2) *Step 2:* Within 12 months after the end of the monitoring period during which a system exceeds the lead or copper action level, the State may require the system to perform corrosion control studies (§141.82(b)). If the State does not require the system to perform such studies, the State shall specify optimal corrosion control treatment (§141.82(d)) within the following timeframes:

(i) For medium-size systems, within 18 months after the end of the monitoring period during which such system exceeds the lead or copper action level.

(ii) For small systems, within 24 months after the end of the monitoring period during which such system exceeds the lead or copper action level.

(3) *Step 3:* If the State requires a system to perform corrosion control studies under step 2, the system shall complete the studies (§141.82(c)) within 18 months after the State requires that such studies be conducted.

(4) *Step 4:* If the system has performed corrosion control studies under step 2, the State shall designate optimal corrosion control treatment (§141.82(d)) within 6 months after completion of step 3.

(5) *Step 5:* The system shall install optimal corrosion control treatment (§141.82(e)) within 24 months after the State designates such treatment.

(6) *Step 6:* The system shall complete follow-up sampling (§141.86(d)(2) and §141.87(c)) within 36 months after the State designates optimal corrosion control treatment.

(7) *Step 7:* The State shall review the system's installation of treatment and designate optimal water quality control parameters (§141.82(f)) within 6 months after completion of step 6.

(8) *Step 8:* The system shall operate in compliance with the State-designated optimal water quality control parameters (§141.82(g)) and continue to conduct tap sampling (§141.86(d)(3) and §141.87(d)).

[56 FR 26548, June 7, 1991, as amended at 59 FR 33862, June 30, 1994; 65 FR 2004, Jan. 12, 2000; 72 FR 57814, Oct. 10, 2007]

§141.82 Description of corrosion control treatment requirements.

Each system shall complete the corrosion control treatment requirements described below which are applicable to such system under §141.81.

(a) *System recommendation regarding corrosion control treatment.* Based upon the results of lead and copper tap monitoring and water quality parameter monitoring, small and medium-size water systems exceeding the lead or copper action level shall recommend installation of one or more of the corrosion control treatments listed in paragraph (c)(1) of this section which the system believes constitutes optimal corrosion control for that system. The State may require the system to conduct additional water quality parameter monitoring in accordance with §141.87(b) to assist the State in reviewing the system's recommendation.

(b) *State decision to require studies of corrosion control treatment (applicable to small and medium-size systems).* The State may require any small or medium-size system that exceeds the lead or copper action level to perform corrosion control studies under paragraph (c) of this section to identify optimal corrosion control treatment for the system.

(c) *Performance of corrosion control studies.* (1) Any public water system performing corrosion control studies shall evaluate the effectiveness of each of the following treatments, and, if appropriate, combinations of the following treatments to identify the optimal corrosion control treatment for that system:

(i) Alkalinity and pH adjustment;

(ii) Calcium hardness adjustment; and

(iii) The addition of a phosphate or silicate based corrosion inhibitor at a concentration sufficient to maintain an effective residual concentration in all test tap samples.

(2) The water system shall evaluate each of the corrosion control treatments using either pipe rig/loop tests, metal coupon tests, partial-system tests, or analyses based on documented analogous treatments with other systems of similar size, water chemistry and distribution system configuration.

(3) The water system shall measure the following water quality parameters in any tests conducted under this paragraph before and after evaluating the corrosion control treatments listed above:

(i) Lead;

(ii) Copper;

(iii) pH;

(iv) Alkalinity;

(v) Calcium;

(vi) Conductivity;

(vii) Orthophosphate (when an inhibitor containing a phosphate compound is used);

(viii) Silicate (when an inhibitor containing a silicate compound is used);

(ix) Water temperature.

(4) The water system shall identify all chemical or physical constraints that limit or prohibit the use of a particular corrosion control treatment and document such constraints with at least one of the following:

(i) Data and documentation showing that a particular corrosion control treatment has adversely affected other water treatment processes when used by another water system with comparable water quality characteristics; and/or

(ii) Data and documentation demonstrating that the water system has previously attempted to evaluate a particular corrosion control treatment and has found that the treatment is ineffective or adversely affects other water quality treatment processes.

(5) The water system shall evaluate the effect of the chemicals used for corrosion control treatment on other water quality treatment processes.

(6) On the basis of an analysis of the data generated during each evaluation, the water system shall recommend to the State in writing the treatment option that the corrosion control studies indicate constitutes optimal corrosion control treatment for that system. The water system shall provide a rationale for its recommendation along with all supporting documentation specified in paragraphs (c) (1) through (5) of this section.

(d) *State designation of optimal corrosion control treatment.* (1) Based upon consideration of available information including, where applicable, studies performed under paragraph (c) of this section and a system's recommended treatment alternative, the State shall either approve the corrosion control treatment option recommended by the system, or designate alternative corrosion control treatment(s) from among those listed in paragraph (c)(1) of this section. When designating optimal treatment the State shall consider the effects that additional corrosion control treatment will have on water quality parameters and on other water quality treatment processes.

(2) The State shall notify the system of its decision on optimal corrosion control treatment in writing and explain the basis for this determination. If the State requests additional information to aid its review, the water system shall provide the information.

(e) *Installation of optimal corrosion control.* Each system shall properly install and operate throughout its distribution system the optimal corrosion control treatment designated by the State under paragraph (d) of this section.

(f) *State review of treatment and specification of optimal water quality control parameters.* The State shall evaluate the results of all lead and copper tap samples and water quality parameter samples submitted by the water system and determine whether the system has properly installed and operated the optimal corrosion control treatment designated by the State in paragraph (d) of this section. Upon reviewing the results of tap water and water quality parameter monitoring by the system, both before and after the system installs optimal corrosion control treatment, the State shall designate:

(1) A minimum value or a range of values for pH measured at each entry point to the distribution system;

(2) A minimum pH value, measured in all tap samples. Such value shall be equal to or greater than 7.0, unless the State determines that meeting a pH level of 7.0 is not technologically feasible or is not necessary for the system to optimize corrosion control;

(3) If a corrosion inhibitor is used, a minimum concentration or a range of concentrations for the inhibitor, measured at each entry point to the distribution system and in all tap samples, that the State determines is necessary to form a passivating film on the interior walls of the pipes of the distribution system;

(4) If alkalinity is adjusted as part of optimal corrosion control treatment, a minimum concentration or a range of concentrations for alkalinity, measured at each entry point to the distribution system and in all tap samples;

(5) If calcium carbonate stabilization is used as part of corrosion control, a minimum concentration or a range of concentrations for calcium, measured in all tap samples.

The values for the applicable water quality control parameters listed above shall be those that the State determines to reflect optimal corrosion control treatment for the system. The State may designate values for additional water quality control parameters determined by the State to reflect optimal corrosion control for the system. The State shall notify the system in writing of these determinations and explain the basis for its decisions.

(g) *Continued operation and monitoring.* All systems optimizing corrosion control shall continue to operate and maintain optimal corrosion control treatment, including maintaining water quality parameters at or above minimum values or within ranges designated by the State under paragraph (f) of this section, in accordance with this paragraph for all samples collected under §141.87(d) through (f). Compliance with the requirements of this paragraph shall be determined every six months, as specified under §141.87(d). A water system is out of compliance with the requirements of this paragraph for a six-month period if it has excursions for any State-specified parameter on more than nine days during the period. An excursion occurs whenever the daily value for one or more of the water quality parameters measured at a sampling location is below the minimum value or outside the range designated by the State. Daily values are calculated as follows. States have discretion to delete results of obvious sampling errors from this calculation.

(1) On days when more than one measurement for the water quality parameter is collected at the sampling location, the daily value shall be the average of all results collected during the day regardless of whether they are collected through continuous monitoring, grab sampling, or a combination of both. If EPA has approved an alternative formula under §142.16 of this chapter in the State's application for a

program revision submitted pursuant to §142.12 of this chapter, the State's formula shall be used to aggregate multiple measurements taken at a sampling point for the water quality parameter in lieu of the formula in this paragraph.

(2) On days when only one measurement for the water quality parameter is collected at the sampling location, the daily value shall be the result of that measurement.

(3) On days when no measurement is collected for the water quality parameter at the sampling location, the daily value shall be the daily value calculated on the most recent day on which the water quality parameter was measured at the sample site.

(h) *Modification of State treatment decisions*. Upon its own initiative or in response to a request by a water system or other interested party, a State may modify its determination of the optimal corrosion control treatment under paragraph (d) of this section or optimal water quality control parameters under paragraph (f) of this section. A request for modification by a system or other interested party shall be in writing, explain why the modification is appropriate, and provide supporting documentation. The State may modify its determination where it concludes that such change is necessary to ensure that the system continues to optimize corrosion control treatment. A revised determination shall be made in writing, set forth the new treatment requirements, explain the basis for the State's decision, and provide an implementation schedule for completing the treatment modifications.

(i) *Treatment decisions by EPA in lieu of the State*. Pursuant to the procedures in §142.19, the EPA Regional Administrator may review treatment determinations made by a State under paragraphs (d), (f), or (h) of this section and issue federal treatment determinations consistent with the requirements of those paragraphs where the Regional Administrator finds that:

(1) A State has failed to issue a treatment determination by the applicable deadlines contained in §141.81,

(2) A State has abused its discretion in a substantial number of cases or in cases affecting a substantial population, or

(3) The technical aspects of a State's determination would be indefensible in an expected Federal enforcement action taken against a system.

[56 FR 26548, June 7, 1991, as amended at 65 FR 2004, Jan. 12, 2000]

§141.83 Source water treatment requirements.

Systems shall complete the applicable source water monitoring and treatment requirements (described in the referenced portions of paragraph (b) of this section, and in §§141.86, and 141.88) by the following deadlines.

(a) *Deadlines for completing source water treatment steps*—(1) *Step 1:* A system exceeding the lead or copper action level shall complete lead and copper source water monitoring (§141.88(b)) and make a treatment recommendation to the State (§141.83(b)(1)) no later than 180 days after the end of the monitoring period during which the lead or copper action level was exceeded.

(2) *Step 2:* The State shall make a determination regarding source water treatment (§141.83(b)(2)) within 6 months after submission of monitoring results under step 1.

(3) *Step 3:* If the State requires installation of source water treatment, the system shall install the treatment (§141.83(b)(3)) within 24 months after completion of step 2.

(4) *Step 4:* The system shall complete follow-up tap water monitoring (§141.86(d)(2) and source water monitoring (§141.88(c)) within 36 months after completion of step 2.

(5) *Step 5:* The State shall review the system's installation and operation of source water treatment and specify maximum permissible source water levels (§141.83(b)(4)) within 6 months after completion of step 4.

(6) *Step 6:* The system shall operate in compliance with the State-specified maximum permissible lead and copper source water levels (§141.83(b)(4)) and continue source water monitoring (§141.88(d)).

(b) *Description of source water treatment requirements*—(1) *System treatment recommendation*. Any system which exceeds the lead or copper action level shall recommend in writing to the State the installation and operation of one of the source water treatments listed in paragraph (b)(2) of this section. A system may recommend that no treatment be installed based upon a demonstration that source water treatment is not necessary to minimize lead and copper levels at users' taps.

(2) *State determination regarding source water treatment.* The State shall complete an evaluation of the results of all source water samples submitted by the water system to determine whether source water treatment is necessary to minimize lead or copper levels in water delivered to users' taps. If the State determines that treatment is needed, the State shall either require installation and operation of the source water treatment recommended by the system (if any) or require the installation and operation of another source water treatment from among the following: Ion exchange, reverse osmosis, lime softening or coagulation/filtration. If the State requests additional information to aid in its review, the water system shall provide the information by the date specified by the State in its request. The State shall notify the system in writing of its determination and set forth the basis for its decision.

(3) *Installation of source water treatment.* Each system shall properly install and operate the source water treatment designated by the State under paragraph (b)(2) of this section.

(4) *State review of source water treatment and specification of maximum permissible source water levels.* The State shall review the source water samples taken by the water system both before and after the system installs source water treatment, and determine whether the system has properly installed and operated the source water treatment designated by the State. Based upon its review, the State shall designate the maximum permissible lead and copper concentrations for finished water entering the distribution system. Such levels shall reflect the contaminant removal capability of the treatment properly operated and maintained. The State shall notify the system in writing and explain the basis for its decision.

(5) *Continued operation and maintenance.* Each water system shall maintain lead and copper levels below the maximum permissible concentrations designated by the State at each sampling point monitored in accordance with §141.88. The system is out of compliance with this paragraph if the level of lead or copper at any sampling point is greater than the maximum permissible concentration designated by the State.

(6) *Modification of State treatment decisions.* Upon its own initiative or in response to a request by a water system or other interested party, a State may modify its determination of the source water treatment under paragraph (b)(2) of this section, or maximum permissible lead and copper concentrations for finished water entering the distribution system under paragraph (b)(4) of this section. A request for modification by a system or other interested party shall be in writing, explain why the modification is appropriate, and provide supporting documentation. The State may modify its determination where it concludes that such change is necessary to ensure that the system continues to minimize lead and copper concentrations in source water. A revised determination shall be made in writing, set forth the new treatment requirements, explain the basis for the State's decision, and provide an implementation schedule for completing the treatment modifications.

(7) *Treatment decisions by EPA in lieu of the State.* Pursuant to the procedures in §142.19, the EPA Regional Administrator may review treatment determinations made by a State under paragraphs (b) (2), (4), or (6) of this section and issue Federal treatment determinations consistent with the requirements of those paragraphs where the Administrator finds that:

(i) A State has failed to issue a treatment determination by the applicable deadlines contained in §141.83(a),

(ii) A state has abused its discretion in a substantial number of cases or in cases affecting a substantial population, or

(iii) The technical aspects of a State's determination would be indefensible in an expected Federal enforcement action taken against a system.

[56 FR 26548, June 7, 1991, as amended at 72 FR 57815, Oct. 10, 2007]

§141.84 Lead service line replacement requirements.

(a) Systems that fail to meet the lead action level in tap samples taken pursuant to §141.86(d)(2), after installing corrosion control and/or source water treatment (whichever sampling occurs later), shall replace lead service lines in accordance with the requirements of this section. If a system is in violation of §141.81 or §141.83 for failure to install source water or corrosion control treatment, the State may require the system to commence lead service line replacement under this section after the date by which the system was required to conduct monitoring under §141.86(d)(2) has passed.

(b)(1) A water system shall replace annually at least 7 percent of the initial number of lead service lines in its distribution system. The initial number of lead service lines is the number of lead lines in place at the time the replacement program begins. The system shall identify the initial number of lead service lines in its distribution system, including an identification of the portion(s) owned by the system, based on a materials evaluation, including the evaluation required under §141.86(a) and relevant legal authorities (e.g., contracts, local ordinances) regarding the portion owned by the system. The first year of lead service line replacement shall begin on the first day following the end of the monitoring period in which the action level was exceeded under paragraph (a) of this section. If monitoring is required annually or less frequently, the end of the monitoring period is September 30 of the calendar year in which the sampling occurs. If the State has established an alternate monitoring period, then the end of the monitoring period will be the last day of that period.

(2) Any water system resuming a lead service line replacement program after the cessation of its lead service line replacement program as allowed by paragraph (f) of this section shall update its inventory of lead service lines to include those sites that were previously determined not to require replacement through the sampling provision under paragraph (c) of this section. The system will then divide the updated number of remaining lead service lines by the number of remaining years in the program to determine the number of lines that must be replaced per year (7 percent lead service line replacement is based on a 15-year replacement program, so, for example, systems resuming lead service line replacement after previously conducting two years of replacement would divide the updated inventory by 13). For those systems that have completed a 15-year lead service line replacement program, the State will determine a schedule for replacing or retesting lines that were previously tested out under the replacement program when the system re-exceeds the action level.

(c) A system is not required to replace an individual lead service line if the lead concentration in all service line samples from that line, taken pursuant to §141.86(b)(3), is less than or equal to 0.015 mg/L.

(d) A water system shall replace that portion of the lead service line that it owns. In cases where the system does not own the entire lead service line, the system shall notify the owner of the line, or the owner's authorized agent, that the system will replace the portion of the service line that it owns and shall offer to replace the owner's portion of the line. A system is not required to bear the cost of replacing the privately-ownedportion of the line, nor is it required to replace the privately-owned portion where the owner chooses not to pay the cost of replacing the privately-owned portion of the line, or where replacing the privately-owned portion would be precluded by State, local or common law. A water system that does not replace the entire length of the service line also shall complete the following tasks.

(1) At least 45 days prior to commencing with the partial replacement of a lead service line, the water system shall provide notice to the resident(s) of all buildings served by the line explaining that they may experience a temporary increase of lead levels in

their drinking water, along with guidance on measures consumers can take to minimize their exposure to lead. The State may allow the water system to provide notice under the previous sentence less than 45 days prior to commencing partial lead service line replacement where such replacement is in conjunction with emergency repairs. In addition, the water system shall inform the resident(s) served by the line that the system will, at the system's expense, collect a sample from each partially-replaced lead service line that is representative of the water in the service line for analysis of lead content, as prescribed under §141.86(b)(3), within 72 hours after the completion of the partial replacement of the service line. The system shall collect the sample and report the results of the analysis to the owner and the resident(s) served by the line within three business days of receiving the results. Mailed notices post-marked within three business days of receiving the results shall be considered ''on time.''

(2) The water system shall provide the information required by paragraph (d)(1) of this section to the residents of individual dwellings by mail or by other methods approved by the State. In instances where multi-family dwellings are served by the line, the water system shall have the option to post the information at a conspicuous location.

(e) The State shall require a system to replace lead service lines on a shorter schedule than that required by this section, taking into account the number of lead service lines in the system, where such a shorter replacement schedule is feasible. The State shall make this determination in writing and notify the system of its finding within 6 months after the system is triggered into lead service line replacement based on monitoring referenced in paragraph (a) of this section.

(f) Any system may cease replacing lead service lines whenever first draw samples collected pursuant to §141.86(b)(2) meet the lead action level during each of two consecutive monitoring periods and the system submits the results to the State. If first draw tap samples collected in any such system thereafter exceeds the lead action level, the system shall recommence replacing lead service lines pursuant to paragraph (b)(2) of this section.

(g) To demonstrate compliance with paragraphs (a) through (d) of this section, a system shall report to the State the information specified in §141.90(e).

[56 FR 26548, June 7, 1991; 57 FR 28788, June 29, 1992, as amended at 65 FR 2005, Jan. 12, 2000; 72 FR 57815, Oct. 10, 2007]

§141.85 Public education and supplemental monitoring requirements.

All water systems must deliver a consumer notice of lead tap water monitoring results to persons served by the water system at sites that are tested, as specified in paragraph (d) of this section. A water system that exceeds the lead action level based on tap water samples collected in accordance with §141.86 shall deliver the public education materials contained in paragraph (a) of this section in accordance with the requirements in paragraph (b) of this section. Water systems that exceed the lead action level must sample the tap water of any customer who requests it in accordance with paragraph (c) of this section.

(a) *Content of written public education materials*—(1) *Community water systems and non-transient non-community water systems.* Water systems must include the following elements in printed materials (e.g., brochures and pamphlets) in the same order as listed below. In addition, language in paragraphs (a)(1)(i) through (ii) and (a)(1)(vi) of this section must be included in the materials, exactly as written, except for the text in brackets in these paragraphs for which the water system must include system-specific information. Any additional information presented by a water system must be consistent with the information below and be in plain language that can be understood by the general public. Water systems must submit all written public education materials to the State prior to delivery. The State may require the system to obtain approval of the content of written public materials prior to delivery.

(i) IMPORTANT INFORMATION ABOUT LEAD IN YOUR DRINKING WATER. [INSERT NAME OF WATER

SYSTEM] found elevated levels of lead in drinking water in some homes/buildings. Lead can cause serious health problems, especially for pregnant women and young children. Please read this information closely to see what you can do to reduce lead in your drinking water.

(ii) *Health effects of lead.* Lead can cause serious health problems if too much enters your body from drinking water or other sources. It can cause damage to the brain and kidneys, and can interfere with the production of red blood cells that carry oxygen to all parts of your body. The greatest risk of lead exposure is to infants, young children, and pregnant women. Scientists have linked the effects of lead on the brain with lowered IQ in children. Adults with kidney problems and high blood pressure can be affected by low levels of lead more than healthy adults. Lead is stored in the bones, and it can be released later in life. During pregnancy, the child receives lead from the mother's bones, which may affect brain development.

(iii) *Sources of lead.* (A) Explain what lead is.

(B) Explain possible sources of lead in drinking water and how lead enters drinking water. Include information on home/building plumbing materials and service lines that may contain lead.

(C) Discuss other important sources of lead exposure in addition to drinking water (e.g., paint).

(iv) Discuss the steps the consumer can take to reduce their exposure to lead in drinking water.

(A) Encourage running the water to flush out the lead.

(B) Explain concerns with using hot water from the tap and specifically caution against the use of hot water for preparing baby formula.

(C) Explain that boiling water does not reduce lead levels.

(D) Discuss other options consumers can take to reduce exposure to lead in drinking water, such as alternative sources or treatment of water.

(E) Suggest that parents have their child's blood tested for lead.

(v) Explain why there are elevated levels of lead in the system's drinking water (if known) and what the water system is doing to reduce the lead levels in homes/buildings in this area.

(vi) For more information, call us at [INSERT YOUR NUMBER] [(IF APPLICABLE), or visit our Web site at [INSERT YOUR WEB SITE HERE]]. For more information on reducing lead exposure around your home/building and the health effects of lead, visit EPA's Web site at *http://www.epa.gov/lead* or contact your health care provider.

(2) *Community water systems.* In addition to including the elements specified in paragraph (a)(1) of this section, community water systems must:

(i) Tell consumers how to get their water tested.

(ii) Discuss lead in plumbing components and the difference between low lead and lead free.

(b) *Delivery of public education materials.* (1) For public water systems serving a large proportion of non-English speaking consumers, as determined by the State, the public education materials must contain information in the appropriate language(s) regarding the importance of the notice or contain a telephone number or address where persons served may contact the water system to obtain a translated copy of the public education materials or to request assistance in the appropriate language.

(2) A community water system that exceeds the lead action level on the basis of tap water samples collected in accordance with §141.86, and that is not already conducting public education tasks under this section, must conduct the public education tasks under this section within 60 days after the end of the monitoring period in which the exceedance occurred:

(i) Deliver printed materials meeting the content requirements of paragraph (a) of this section to all bill paying customers.

(ii)(A) Contact customers who are most at risk by delivering education materials that meet the content requirements of paragraph (a) of this section to local public health agencies even if they are not located within the water system's service area, along with an informational notice that encourages distribution to all the organization's potentially affected customers or community water system's users.

The water system must contact the local public health agencies directly by phone or in person. The local public health agencies may provide a specific list of additional community based organizations serving target populations, which may include organizations outside the service area of the water system. If such lists are provided, systems must deliver education materials that meet the content requirements of paragraph (a) of this section to all organizations on the provided lists.

(B) Contact customers who are most at risk by delivering materials that meet the content requirements of paragraph (a) of this section to the following organizations listed in 1 through 6 that are located within the water system's service area, along with an informational notice that encourages distribution to all the organization's potentially affected customers or community water system's users:

(*1*) Public and private schools or school boards.

(*2*) Women, Infants and Children (WIC) and Head Start programs.

(*3*) Public and private hospitals and medical clinics.

(*4*) Pediatricians.

(*5*) Family planning clinics.

(*6*) Local welfare agencies.

(C) Make a good faith effort to locate the following organizations within the service area and deliver materials that meet the content requirements of paragraph (a) of this section to them, along with an informational notice that encourages distribution to all potentially affected customers or users. The good faith effort to contact at-risk customers may include requesting a specific contact list of these organizations from the local public health agencies, even if the agencies are not located within the water system's service area:

(*1*) Licensed childcare centers

(*2*) Public and private preschools.

(*3*) Obstetricians-Gynecologists and Midwives.

(iii) No less often than quarterly, provide information on or in each water bill as long as the system exceeds the action level for lead. The message on the water bill must include the following statement exactly as written except for the text in brackets for which the water system must include system-specific information: [INSERT NAME OF WATER SYSTEM] found high levels of lead in drinking water in some homes. Lead can cause serious health problems. For more information please call [INSERT NAME OF WATER SYSTEM] [or visit (INSERT YOUR WEB SITE HERE)]. The message or delivery mechanism can be modified in consultation with the State; specifically, the State may allow a separate mailing of public education materials to customers if the water system cannot place the information on water bills.

(iv) Post material meeting the content requirements of paragraph (a) of this section on the water system's Web site if the system serves a population greater than 100,000.

(v) Submit a press release to newspaper, television and radio stations.

(vi) In addition to paragraphs (b)(2)(i) through (v) of this section, systems must implement at least three activities from one or more categories listed below. The educational content and selection of these activities must be determined in consultation with the State.

(A) Public Service Announcements.

(B) Paid advertisements.

(C) Public Area Information Displays.

(D) E-mailsto customers.

(E) Public Meetings.

(F) Household Deliveries.

(G) Targeted Individual Customer Contact.

(H) Direct material distribution to all multi-family homes and institutions.

(I) Other methods approved by the State.

(vii) For systems that are required to conduct monitoring annually or less frequently, the end of the monitoring period is September 30 of the calendar year in which the sampling occurs, or, if the State has established an alternate monitoring period, the last day of that period.

(3) As long as a community water system exceeds the action level, it must repeat the activities pursuant to paragraph (b)(2) of this section as described in paragraphs (b)(3)(i) through (iv) of this section.

(i) A community water system shall repeat the tasks contained in paragraphs (b)(2)(i), (ii) and (vi) of this section every 12 months.

(ii) A community water system shall repeat tasks contained in paragraph (b)(2)(iii) of this section with each billing cycle.

(iii) A community water system serving a population greater than 100,000 shall post and retain material on a publicly accessible Web site pursuant to paragraph (b)(2)(iv) of this section.

(iv) The community water system shall repeat the task in paragraph (b)(2)(v) of this section twice every 12 months on a schedule agreed upon with the State. The State can allow activities in paragraph (b)(2) of this section to extend beyond the 60-day requirement if needed for implementation purposes on a case-by-casebasis; however, this extension must be approved in writing by the State in advance of the 60-daydeadline.

(4) Within 60 days after the end of the monitoring period in which the exceedance occurred (unless it already is repeating public education tasks pursuant to paragraph (b)(5) of this section), a non-transient non-community water system shall deliver the public education materials specified by paragraph (a) of this section as follows:

(i) Post informational posters on lead in drinking water in a public place or common area in each of the buildings served by the system; and

(ii) Distribute informational pamphlets and/or brochures on lead in drinking water to each person served by the non-transient non-community water system. The State may allow the system to utilize electronic transmission in lieu of or combined with printed materials as long as it achieves at least the same coverage.

(iii) For systems that are required to conduct monitoring annually or less frequently, the end of the monitoring period is September 30 of the calendar year in which the sampling occurs, or, if the State has established an alternate monitoring period, the last day of that period.

(5) A non-transient non-community water system shall repeat the tasks contained in paragraph (b)(4) of this section at least once during each calendar year in which the system exceeds the lead action level. The State can allow activities in (b)(4) of this section to extend beyond the 60-day requirement if needed for implementation purposes on a case-by-casebasis; however, this extension must be approved in writing by the State in advance of the 60-daydeadline.

(6) A water system may discontinue delivery of public education materials if the system has met the lead action level during the most recent six-month monitoring period conducted pursuant to §141.86. Such a system shall recommence public education in accordance with this section if it subsequently exceeds the lead action level during any monitoring period.

(7) A community water system may apply to the State, in writing (unless the State has waived the requirement for prior State approval), to use only the text specified in paragraph (a)(1) of this section in lieu of the text in paragraphs (a)(1) and (a)(2) of this section and to perform the tasks listed in paragraphs (b)(4) and (b)(5) of this section in lieu of the tasks in paragraphs (b)(2) and (b)(3) of this section if:

(i) The system is a facility, such as a prison or a hospital, where the population served is not capable of or is prevented from making improvements to plumbing or installing point of use treatment devices; and

(ii) The system provides water as part of the cost of services provided and does not separately charge for water consumption.

(8) A community water system serving 3,300 or fewer people may limit certain aspects of their public education programs as follows:

(i) With respect to the requirements of paragraph (b)(2)(vi) of this section, a system serving 3,300 or fewer must implement at least one of the activities listed in that paragraph.

(ii) With respect to the requirements of paragraph (b)(2)(ii) of this section, a system serving 3,300 or fewer people may limit the distribution of the public education materials required under that paragraph to facilities and organizations served by the system that are most likely to be visited regularly by pregnant women and children.

(iii) With respect to the requirements of paragraph (b)(2)(v) of this section, the State may waive this requirement for systems serving 3,300 or fewer persons as long as system distributes notices to every household served by the system.

(c) *Supplemental monitoring and notification of results.* A water system that fails to meet the lead action level on the basis of tap samples collected in accordance with §141.86 shall offer to sample the tap water of any customer who requests it. The system is not required to pay for collecting or analyzing the sample, nor is the system required to collect and analyze the sample itself.

(d) *Notification of results*—(1) *Reporting requirement.* All water systems must provide a notice of the individual tap results from lead tap water monitoring carried out under the requirements of §141.86 to the persons served by the water system at the specific sampling site from which the sample was taken (e.g., the occupants of the residence where the tap was tested).

(2) *Timing of notification.* A water system must provide the consumer notice as soon as practical, but no later than 30 days after the system learns of the tap monitoring results.

(3) *Content.* The consumer notice must include the results of lead tap water monitoring for the tap that was tested, an explanation of the health effects of lead, list steps consumers can take to reduce exposure to lead in drinking water and contact information for the water utility. The notice must also provide the maximum contaminant level goal and the action level for lead and the definitions for these two terms from §141.153(c).

(4) *Delivery.* The consumer notice must be provided to persons served at the tap that was tested, either by mail or by another method approved by the State. For example, upon approval by the State, a non-transient non-community water system could post the results on a bulletin board in the facility to allow users to review the information. The system must provide the notice to customers at sample taps tested, including consumers who do not receive water bills.

[72 FR 57815, Oct. 10, 2007]

§141.86 Monitoring requirements for lead and copper in tap water.

(a) *Sample site location.* (1) By the applicable date for commencement of monitoring under paragraph (d)(1) of this section, each water system shall complete a materials evaluation of its distribution system in order to identify a pool of targeted sampling sites that meets the requirements of this section, and which is sufficiently large to ensure that the water system can collect the number of lead and copper tap samples required in paragraph (c) of this section. All sites from which first draw samples are collected shall be selected from this pool of targeted sampling sites. Sampling sites may not include faucets that have point-of-use or point-of-entry treatment devices designed to remove inorganic contaminants.

(2) A water system shall use the information on lead, copper, and galvanized steel that it is required to collect under §141.42(d) of this part [special monitoring for corrosivity characteristics] when conducting a materials evaluation. When an evaluation of the information collected pursuant to §141.42(d) is insufficient to locate the requisite number of lead and copper sampling sites that meet the targeting criteria in paragraph (a) of this section, the water system shall review the sources of information listed below in order to identify a sufficient number of sampling sites. In addition, the system shall seek to collect such information where possible in the course of its normal operations (e.g., checking service line materials when reading water meters or performing maintenance activities):

(i) All plumbing codes, permits, and records in the files of the building department(s) which indicate the plumbing materials that are installed within publicly and privately owned structures connected to the distribution system;

(ii) All inspections and records of the distribution system that indicate the material composition of the service connections that connect a structure to the distribution system; and

(iii) All existing water quality information, which includes the results of all prior analyses of the system or individual structures connected to the system, indicating locations that may be particularly susceptible to high lead or copper concentrations.

(3) The sampling sites selected for a community water system's sampling pool (''tier I sampling sites'') shall consist of single family structures that:

(i) Contain copper pipes with lead solder installed after 1982 or contain lead pipes; and/or

(ii) Are served by a lead service line. When multiple-family residences comprise at least 20 percent of the structures served by a water system, the system may include these types of structures in its sampling pool.

(4) Any community water system with insufficient tier 1 sampling sites shall complete its sampling pool with ''tier 2 sampling sites'', consisting of buildings, including multiple-family residences that:

(i) Contain copper pipes with lead solder installed after 1982 or contain lead pipes; and/or

(ii) Are served by a lead service line.

(5) Any community water system with insufficient tier 1 and tier 2 sampling sites shall complete its sampling pool with ''tier 3 sampling sites'', consisting of single family structures that contain copper pipes with lead solder installed before 1983. A community water system with insufficient tier 1, tier 2, and tier 3 sampling sites shall complete its sampling pool with representative sites throughout the distribution system. For the purpose of this paragraph, a representative site is a site in which the plumbing materials used at that site would be commonly found at other sites served by the water system.

(6) The sampling sites selected for a non-transient noncommunity water system (''tier I sampling sites'') shall consist of buildings that:

(i) Contain copper pipes with lead solder installed after 1982 or contain lead pipes; and/or

(ii) Are served by a lead service line.

(7) A non-transient non-community water system with insufficient tier 1 sites that meet the targeting criteria in paragraph (a)(6) of this section shall complete its sampling pool with sampling sites that contain copper pipes with lead solder installed before 1983. If additional sites are needed to complete the sampling pool, the non-transient non-community water system shall use representative sites throughout the distribution system. For the purpose of this paragraph, a representative site is a site in which the plumbing materials used at that site would be commonly found at other sites served by the water system.

(8) Any water system whose distribution system contains lead service lines shall draw 50 percent of the samples it collects during each monitoring period from sites that contain lead pipes, or copper pipes with lead solder, and 50 percent of the samples from sites served by a lead service line. A water system that cannot identify a sufficient number of sampling sites served by a lead service line shall collect first-draw samples from all of the sites identified as being served by such lines.

(b) *Sample collection methods.* (1) All tap samples for lead and copper collected in accordance with this subpart, with the exception of lead service line samples collected under §141.84(c) and samples collected under paragraph (b)(5) of this section, shall be first-draw samples.

(2) Each first-draw tap sample for lead and copper shall be one liter in volume and have stood motionless in the plumbing system of each sampling site for at least six hours. First-draw samples from residential housing shall be collected from the cold water kitchen tap or bathroom sink tap. First-draw samples from a nonresidential building shall be one liter in volume and shall be collected at an interior tap from which water is typically drawn for consumption. Non-first-draw samples collected in lieu of first-draw samples pursuant to paragraph (b)(5) of this section shall be one liter in volume and shall be collected at an interior tap from which water is typically drawn for consumption. First-draw samples may be collected by the system or the system may allow residents to collect first-draw samples after instructing the residents of the sampling procedures specified in this paragraph. To avoid problems of residents handling nitric acid, acidification of first-draw samples may be done up to 14

days after the sample is collected. After acidification to resolubilize the metals, the sample must stand in the original container for the time specified in the approved EPA method before the sample can be analyzed. If a system allows residents to perform sampling, the system may not challenge, based on alleged errors in sample collection, the accuracy of sampling results.

(3) Each service line sample shall be one liter in volume and have stood motionless in the lead service line for at least six hours. Lead service line samples shall be collected in one of the following three ways:

(i) At the tap after flushing the volume of water between the tap and the lead service line. The volume of water shall be calculated based on the interior diameter and length of the pipe between the tap and the lead service line;

(ii) Tapping directly into the lead service line; or

(iii) If the sampling site is a building constructed as a single-family residence, allowing the water to run until there is a significant change in temperature which would be indicative of water that has been standing in the lead service line.

(4) A water system shall collect each first draw tap sample from the same sampling site from which it collected a previous sample. If, for any reason, the water system cannot gain entry to a sampling site in order to collect a follow-up tap sample, the system may collect the follow-up tap sample from another sampling site in its sampling pool as long as the new site meets the same targeting criteria, and is within reasonable proximity of the original site.

(5) A non-transient non-community water system, or a community water system that meets the criteria of §141.85(b)(7), that does not have enough taps that can supply first-draw samples, as defined in §141.2, may apply to the State in writing to substitute non-first-draw samples. Such systems must collect as many first-draw samples from appropriate taps as possible and identify sampling times and locations that would likely result in the longest standing time for the remaining sites. The State has the discretion to waive the requirement for prior State approval of non-first-draw sample sites selected by the system, either through State regulation or written notification to the system.

(c) *Number of samples.* Water systems shall collect at least one sample during each monitoring period specified in paragraph (d) of this section from the number of sites listed in the first column (''standard monitoring'') of the table in this paragraph. A system conducting reduced monitoring under paragraph (d)(4) of this section shall collect at least one sample from the number of sites specified in the second column (''reduced monitoring'') of the table in this paragraph during each monitoring period specified in paragraph (d)(4) of this section. Such reduced monitoring sites shall be representative of the sites required for standard monitoring. A public water system that has fewer than five drinking water taps, that can be used for human consumption meeting the sample site criteria of paragraph (a) of this section to reach the required number of sample sites listed in paragraph (c) of this section, must collect at least one sample from each tap and then must collect additional samples from those taps on different days during the monitoring period to meet the required number of sites. Alternatively the State may allow these public water systems to collect a number of samples less than the number of sites specified in paragraph (c) of this section, provided that 100 percent of all taps that can be used for human consumption are sampled. The State must approve this reduction of the minimum number of samples in writing based on a request from the system or onsite verification by the State. States may specify sampling locations when a system is conducting reduced monitoring. The table is as follows:

System size (number of people served)	Number of sites (standard monitoring)	Number of sites (reduced monitoring)
>100,000	100	50
10,001 to 100,000	60	30
3,301 to 10,000	40	20
501 to 3,300	20	10
101 to 500	10	5

System size (number of people served)	Number of sites (standard monitoring)	Number of sites (reduced monitoring)
≤100	5	5

(d) *Timing of monitoring*—(1) *Initial tap sampling.*

The first six-month monitoring period for small, medium-size and large systems shall begin on the following dates:

System size (No. people served)	First six-month monitoring period begins on
>50,000	January 1, 1992.
3,301 to 50,000	July 1, 1992.
≤3,300	July 1, 1993.

(i) All large systems shall monitor during two consecutive six-month periods.

(ii) All small and medium-size systems shall monitor during each six-month monitoring period until:

(A) The system exceeds the lead or copper action level and is therefore required to implement the corrosion control treatment requirements under §141.81, in which case the system shall continue monitoring in accordance with paragraph (d)(2) of this section, or

(B) The system meets the lead and copper action levels during two consecutive six-month monitoring periods, in which case the system may reduce monitoring in accordance with paragraph (d)(4) of this section.

(2) *Monitoring after installation of corrosion control and source water treatment.* (i) Any large system which installs optimal corrosion control treatment pursuant to §141.81(d)(4) shall monitor during two consecutive six-month monitoring periods by the date specified in §141.81(d)(5).

(ii) Any small or medium-sizesystem which installs optimal corrosion control treatment pursuant to §141.81(e)(5) shall monitor during two consecutive six-month monitoring periods by the date specified in §141.81(e)(6).

(iii) Any system which installs source water treatment pursuant to §141.83(a)(3) shall monitor during two consecutive six-month monitoring periods by the date specified in §141.83(a)(4).

(3) *Monitoring after State specifies water quality parameter values for optimal corrosion control.* After the State specifies the values for water quality control parameters under §141.82(f), the system shall monitor during each subsequent six-month monitoring period, with the first monitoring period to begin on the date the State specifies the optimal values under §141.82(f).

(4) *Reduced monitoring.* (i) A small or medium-size water system that meets the lead and copper action levels during each of two consecutive six-month monitoring periods may reduce the number of samples in accordance with paragraph (c) of this section, and reduce the frequency of sampling to once per year. A small or medium water system collecting fewer than five samples as specified in paragraph (c) of this section, that meets the lead and copper action levels during each of two consecutive six-month monitoring periods may reduce the frequency of sampling to once per year. In no case can the system reduce the number of samples required below the minimum of one sample per available tap. This sampling shall begin during the calendar year immediately following the end of the second consecutive six-month monitoring period.

(ii) Any water system that meets the lead action level and maintains the range of values for the water quality control parameters reflecting optimal corrosion control treatment specified by the State under §141.82(f) during each of two consecutive six-month monitoring periods may reduce the frequency of monitoring to once per year and reduce the number of lead and copper samples in accordance with paragraph (c) of this section if it receives written approval from the State. This sampling shall begin during the calendar year immediately following the end of the second consecutive six-month monitoring period. The State shall review monitoring, treatment, and other relevant information submitted by the water system in accordance with §141.90, and shall notify the system in writing when it determines the system is eligible to commence reduced monitoring pursuant to this paragraph. The State shall review, and where appropriate, revise its determination when the system submits new monitoring or treatment data, or when other data relevant to the number and frequency of tap sampling becomes available.

(iii) A small or medium-size water system that meets the lead and copper action levels during three consecutive years of monitoring may reduce the frequency of monitoring for lead and copper from annually to once every three years. Any water system that meets the lead action level and maintains the range of values for the water quality control parameters reflecting optimal corrosion control treatment specified by the State under §141.82(f) during three consecutive years of monitoring may reduce the frequency of monitoring from annually to once every three years if it receives written approval from the State. Samples collected once every three years shall be collected no later than every third calendar year. The State shall review monitoring, treatment, and other relevant information submitted by the water system in accordance with §141.90, and shall notify the system in writing when it determines the system is eligible to reduce the frequency of monitoring to once every three years. The State shall review, and where appropriate, revise its determination when the system submits new monitoring or treatment data, or when other data relevant to the number and frequency of tap sampling becomes available.

(iv) A water system that reduces the number and frequency of sampling shall collect these samples from representative sites included in the pool of targeted sampling sites identified in paragraph (a) of this section. Systems sampling annually or less frequently shall conduct the lead and copper tap sampling during the months of June, July, August, or September unless the State has approved a different sampling period in accordance with paragraph (d)(4)(iv)(A) of this section.

(A) The State, at its discretion, may approve a different period for conducting the lead and copper tap sampling for systems collecting a reduced number of samples. Such a period shall be no longer than four consecutive months and must represent a time of normal operation where the highest levels of lead are most likely to occur. For a non-transient non-community water system that does not operate during the months of June through September, and for which the period of normal operation where the highest levels of lead are most likely to occur is not known, the State shall designate a period that represents a time of normal operation for the system. This sampling shall begin during the period approved or designated by the State in the calendar year immediately following the end of the second consecutive six-month monitoring period for systems initiating annual monitoring and during the three-year period following the end of the third consecutive calendar year of annual monitoring for systems initiating triennial monitoring.

(B) Systems monitoring annually, that have been collecting samples during the months of June through September and that receive State approval to alter their sample collection period under paragraph (d)(4)(iv)(A) of this section, must collect their next round of samples during a time period that ends no later than 21 months after the previous round of sampling. Systems monitoring triennially that have been collecting samples during the months of June through September, and receive State approval to alter the sampling collection period as per paragraph (d)(4)(iv)(A) of this section, must collect their next round of samples during a time period that ends no later than 45 months after the previous round of sampling. Subsequent rounds of sampling must be collected annually or triennially, as required by this section. Small systems with waivers, granted pursuant to paragraph (g) of this section, that have been collecting samples during the months of June through September and receive State approval to alter their sample collection period under paragraph (d)(4)(iv)(A) of this section must collect their next round of samples before the end of the 9-yearperiod.

(v) Any water system that demonstrates for two consecutive 6-month monitoring periods that the tap water lead level computed under §141.80(c)(3) is less than or equal to 0.005 mg/L and the tap water copper level computed under §141.80(c)(3) is less than or equal to 0.65 mg/L may reduce the number of samples in accordance with paragraph (c) of this section and reduce the frequency of sampling to once every three calendar years.

(vi)(A) A small or medium-size water system subject to reduced monitoring that exceeds the lead or copper action level shall resume sampling in accordance with paragraph (d)(3) of this section and collect the number of samples specified for standard monitoring under paragraph (c) of this section. Such a system shall also conduct water quality parameter monitoring in accordance with §141.87(b), (c) or (d) (as appropriate) during the monitoring period in which it exceeded the action level. Any such system may resume annual monitoring for lead and copper at the tap at the reduced number of sites specified in paragraph (c) of this section after it has completed two subsequent consecutive six-month rounds of monitoring that meet the criteria of paragraph (d)(4)(i) of this section and/or may resume triennial monitoring for lead and copper at the reduced number of sites after it demonstrates through subsequent rounds of monitoring that it meets the criteria of either paragraph (d)(4)(iii) or (d)(4)(v) of this section.

(B) Any water system subject to the reduced monitoring frequency that fails to meet the lead action level during any four-month monitoring period or that fails to operate at or above the minimum value or within the range of values for the water quality parameters specified by the State under §141.82(f) for more than nine days in any six-month period specified in §141.87(d) shall conduct tap water sampling for lead and copper at the frequency specified in paragraph (d)(3) of this section, collect the number of samples specified for standard monitoring under paragraph (c) of this section, and shall resume monitoring for water quality parameters within the distribution system in accordance with §141.87(d). This standard tap water sampling shall begin no later than the six-month period beginning January 1 of the calendar year following the lead action level exceedance or water quality parameter excursion. Such a system may resume reduced monitoring for lead and copper at the tap and for water quality parameters within the distribution system under the following conditions:

(*1*) The system may resume annual monitoring for lead and copper at the tap at the reduced number of sites specified in paragraph (c) of this section after it has completed two subsequent six-month rounds of monitoring that meet the criteria of paragraph (d)(4)(ii) of this section and the system has received written approval from the State that it is appropriate to resume reduced monitoring on an annual frequency. This sampling shall begin during the calendar year immediately following the end of the second consecutive six-month monitoring period.

(*2*) The system may resume triennial monitoring for lead and copper at the tap at the reduced number of sites after it demonstrates through subsequent rounds of monitoring that it meets the criteria of either paragraph (d)(4)(iii) or (d)(4)(v) of this section and the system has received written approval from the State that it is appropriate to resume triennial monitoring.

(*3*) The system may reduce the number of water quality parameter tap water samples required in accordance with §141.87(e)(1) and the frequency with which it collects such samples in accordance with §141.87(e)(2). Such a system may not resume triennial monitoring for water quality parameters at the tap until it demonstrates, in accordance with the requirements of §141.87(e)(2), that it has re-qualified for triennial monitoring.

(vii) Any water system subject to a reduced monitoring frequency under paragraph (d)(4) of this section shall notify the State in writing in accordance with §141.90(a)(3) of any upcoming long-term change in treatment or addition of a new source as described in that section. The State must review and approve the addition of a new source or long-term change in water treatment before it is implemented by the water system. The State may require the system to resume sampling in accordance with paragraph (d)(3) of this section and collect the number of samples specified for standard monitoring under paragraph (c) of this section or take other appropriate steps such as increased water quality parameter monitoring or re-evaluation of its corrosion control treatment given the potentially different water quality considerations.

(e) *Additional monitoring by systems.* The results of any monitoring conducted in addition to the minimum requirements of this section shall be considered by the system and the State in making any determinations (*i.e.*, calculating the 90th percentile lead or copper level) under this subpart.

(f) *Invalidation of lead or copper tap water samples.* A sample invalidated under this paragraph does not count toward determining lead or copper 90th percentile levels under §141.80(c)(3) or toward meeting the minimum monitoring requirements of paragraph (c) of this section.

(1) The State may invalidate a lead or copper tap water sample at least if one of the following conditions is met.

(i) The laboratory establishes that improper sample analysis caused erroneous results.

(ii) The State determines that the sample was taken from a site that did not meet the site selection criteria of this section.

(iii) The sample container was damaged in transit.

(iv) There is substantial reason to believe that the sample was subject to tampering.

(2) The system must report the results of all samples to the State and all supporting documentation for samples the system believes should be invalidated.

(3) To invalidate a sample under paragraph (f)(1) of this section, the decision and the rationale for the decision must be documented in writing. States may not invalidate a sample solely on the grounds that a follow-up sample result is higher or lower than that of the original sample.

(4) The water system must collect replacement samples for any samples invalidated under this section if, after the invalidation of one or more samples, the system has too few samples to meet the minimum requirements of paragraph (c) of this section. Any such replacement samples must be taken as soon as possible, but no later than 20 days after the date the State invalidates the sample or by the end of the applicable monitoring period, whichever occurs later. Replacement samples taken after the end of the applicable monitoring period shall not also be used to meet the monitoring requirements of a subsequent monitoring period. The replacement samples shall be taken at the same locations as the invalidated samples or, if that is not possible, at locations other than those already used for sampling during the monitoring period.

(g) *Monitoring waivers for small systems.* Any small system that meets the criteria of this paragraph may apply to the State to reduce the frequency of monitoring for lead and copper under this section to once every nine years (*i.e.,* a ''full waiver'') if it meets all of the materials criteria specified in paragraph (g)(1) of this section and all of the monitoring criteria specified in paragraph (g)(2) of this section. If State regulations permit, any small system that meets the criteria in paragraphs (g)(1) and (2) of this section only for lead, or only for copper, may apply to the State for a waiver to reduce the frequency of tap water monitoring to once every nine years for that contaminant only (*i.e.,* a ''partial waiver'').

(1) *Materials criteria.* The system must demonstrate that its distribution system and service lines and all drinking water supply plumbing, including plumbing conveying drinking water within all residences and buildings connected to the system, are free of lead-containing materials and/or copper-containing materials, as those terms are defined in this paragraph, as follows:

(i) *Lead.* To qualify for a full waiver, or a waiver of the tap water monitoring requirements for lead (*i.e.,* a ''lead waiver''), the water system must provide certification and supporting documentation to the State that the system is free of all lead-containing materials, as follows:

(A) It contains no plastic pipes which contain lead plasticizers, or plastic service lines which contain lead plasticizers; and

(B) It is free of lead service lines, lead pipes, lead soldered pipe joints, and leaded brass or bronze alloy fittings and fixtures, unless such fittings and fixtures meet the specifications of any standard established pursuant to 42 U.S.C. 300g–6(e) (SDWA section 1417(e)).

(ii) *Copper.* To qualify for a full waiver, or a waiver of the tap water monitoring requirements for copper (*i.e.*, a ''copper waiver''), the water system must provide certification and supporting documentation to the State that the system contains no copper pipes or copper service lines.

(2) *Monitoring criteria for waiver issuance.* The system must have completed at least one 6-month round of standard tap water monitoring for lead and copper at sites approved by the State and from the number of sites required by paragraph (c) of this section and demonstrate that the 90th percentile levels for any and all rounds of monitoring conducted since the system became free of all lead-containing and/or copper-containing materials, as appropriate, meet the following criteria.

(i) *Lead levels.* To qualify for a full waiver, or a lead waiver, the system must demonstrate that the 90th percentile lead level does not exceed 0.005 mg/L.

(ii) *Copper levels.* To qualify for a full waiver, or a copper waiver, the system must demonstrate that the 90th percentile copper level does not exceed 0.65 mg/L.

(3) *State approval of waiver application.* The State shall notify the system of its waiver determination, in writing, setting forth the basis of its decision and any condition of the waiver. As a condition of the waiver, the State may require the system to perform specific activities (e.g., limited monitoring, periodic outreach to customers to remind them to avoid installation of materials that might void the waiver) to avoid the risk of lead or copper concentration of concern in tap water. The small system must continue monitoring for lead and copper at the tap as required by paragraphs (d)(1) through (d)(4) of this section, as appropriate, until it receives written notification from the State that the waiver has been approved.

(4) *Monitoring frequency for systems with waivers.* (i) A system with a full waiver must conduct tap water monitoring for lead and copper in accordance with paragraph (d)(4)(iv) of this section at the reduced number of sampling sites identified in paragraph (c) of this section at least once every nine years and provide the materials certification specified in paragraph (g)(1) of this section for both lead and copper to the State along with the monitoring results. Samples collected every nine years shall be collected no later than every ninth calendar year.

(ii) A system with a partial waiver must conduct tap water monitoring for the waived contaminant in accordance with paragraph (d)(4)(iv) of this section at the reduced number of sampling sites specified in paragraph (c) of this section at least once every nine years and provide the materials certification specified in paragraph (g)(1) of this section pertaining to the waived contaminant along with the monitoring results. Such a system also must continue to monitor for the non-waived contaminant in accordance with requirements of paragraph (d)(1) through (d)(4) of this section, as appropriate.

(iii) Any water system with a full or partial waiver shall notify the State in writing in accordance with §141.90(a)(3) of any upcoming long-term change in treatment or addition of a new source, as described in that section. The State must review and approve the addition of a new source or long-term change in water treatment before it is implemented by the water system. The State has the authority to require the system to add or modify waiver conditions (e.g., require recertification that the system is free of lead-containing and/or copper-containing materials, require additional round(s) of monitoring), if it deems such modifications are necessary to address treatment or source water changes at the system.

(iv) If a system with a full or partial waiver becomes aware that it is no longer free of lead-containing or copper-containing materials, as appropriate, (e.g., as a result of new construction or repairs), the system shall notify the State in writing no later than 60 days after becoming aware of such a change.

(5) *Continued eligibility.* If the system continues to satisfy the requirements of paragraph (g)(4) of this section, the waiver will be renewed automatically, unless any of the conditions listed in paragraph (g)(5)(i) through (g)(5)(iii) of this section occurs. A system whose waiver has been revoked may re-apply for a waiver at such time as it again meets the appropriate materials and monitoring criteria of paragraphs (g)(1) and (g)(2) of this section.

(i) A system with a full waiver or a lead waiver no longer satisfies the materials criteria of paragraph (g)(1)(i) of this section or has a 90th percentile lead level greater than 0.005 mg/L.

(ii) A system with a full waiver or a copper waiver no longer satisfies the materials criteria of paragraph (g)(1)(ii) of this section or has a 90th percentile copper level greater than 0.65 mg/L.

(iii) The State notifies the system, in writing, that the waiver has been revoked, setting forth the basis of its decision.

(6) *Requirements following waiver revocation.* A system whose full or partial waiver has been revoked by the State is subject to the corrosion control treatment and lead and copper tap water monitoring requirements, as follows:

(i) If the system exceeds the lead and/or copper action level, the system must implement corrosion control treatment in accordance with the deadlines specified in §141.81(e), and any other applicable requirements of this subpart.

(ii) If the system meets both the lead and the copper action level, the system must monitor for lead and copper at the tap no less frequently than once every three years using the reduced number of sample sites specified in paragraph (c) of this section.

(7) *Pre-existing waivers.* Small system waivers approved by the State in writing prior to April 11, 2000 shall remain in effect under the following conditions:

(i) If the system has demonstrated that it is both free of lead-containing and copper-containing materials, as required by paragraph (g)(1) of this section and that its 90th percentile lead levels and 90th percentile copper levels meet the criteria of paragraph (g)(2) of this section, the waiver remains in effect so long as the system continues to meet the waiver eligibility criteria of paragraph (g)(5) of this section. The first round of tap water monitoring conducted pursuant to paragraph (g)(4) of this section shall be completed no later than nine years after the last time the system has monitored for lead and copper at the tap.

(ii) If the system has met the materials criteria of paragraph (g)(1) of this section but has not met the monitoring criteria of paragraph (g)(2) of this section, the system shall conduct a round of monitoring for lead and copper at the tap demonstrating that it meets the criteria of paragraph (g)(2) of this section no later than September 30, 2000. Thereafter, the waiver shall remain in effect as long as the system meets the continued eligibility criteria of paragraph (g)(5) of this section. The first round of tap water monitoring conducted pursuant to paragraph (g)(4) of this section shall be completed no later than nine years after the round of monitoring conducted pursuant to paragraph (g)(2) of this section.

[56 FR 26548, June 7, 1991; 56 FR 32113, July 15, 1991; 57 FR 28788, June 29, 1992; as amended at 65 FR 2007, Jan. 12, 2000; 72 FR 57817, Oct. 10, 2007]

§141.87 Monitoring requirements for water quality parameters.

All large water systems, and all small- and medium-size systems that exceed the lead or copper action level shall monitor water quality parameters in addition to lead and copper in accordance with this section. The requirements of this section are summarized in the table at the end of this section.

(a) *General requirements*—(1) *Sample collection methods.* (i) Tap samples shall be representative of water quality throughout the distribution system taking into account the number of persons served, the different sources of water, the different treatment methods employed by the system, and seasonal variability. Tap sampling under this section is not required to be conducted at taps targeted for lead and copper sampling under §141.86(a). [Note: Systems may find it convenient to conduct tap sampling for water quality parameters at sites used for coliform sampling under 40 CFR 141.21.]

(ii) Samples collected at the entry point(s) to the distribution system shall be from locations representative of each source after treatment. If a system draws water from more than one source and the sources are combined before distribution, the system must sample at an entry point to the distribution system during periods of normal operating conditions (*i.e.*, when water is representative of all sources being used).

(2) *Number of samples.* (i) Systems shall collect two tap samples for applicable water quality parameters during each monitoring period specified under paragraphs (b) through (e) of this section from the following number of sites.

System size (No. people served)	No. of sites for water quality parameters
>100,000	25
10,001–100,000	10
3,301 to 10,000	3
501 to 3,300	2
101 to 500	1
≤100	1

(ii) Except as provided in paragraph (c)(3) of this section, systems shall collect two samples for each applicable water quality parameter at each entry point to the distribution system during each monitoring period specified in paragraph (b) of this section. During each monitoring period specified in paragraphs (c)–(e) of this section, systems shall collect one sample for each applicable water quality parameter at each entry point to the distribution system.

(b) *Initial sampling* All large water systems shall measure the applicable water quality parameters as specified below at taps and at each entry point to the distribution system during each six-month monitoring period specified in §141.86(d)(1). All small and medium-size systems shall measure the applicable water quality parameters at the locations specified below during each six-month monitoring period specified in §141.86(d)(1) during which the system exceeds the lead or copper action level.

(1) At taps:

(i) pH;

(ii) Alkalinity;

(iii) Orthophosphate, when an inhibitor containing a phosphate compound is used;

(iv) Silica, when an inhibitor containing a silicate compound is used;

(v) Calcium;

(vi) Conductivity; and

(vii) Water temperature.

(2) At each entry point to the distribution system: all of the applicable parameters listed in paragraph (b)(1) of this section.

(c) *Monitoring after installation of corrosion control.* Any large system which installs optimal corrosion control treatment pursuant to §141.81(d)(4) shall measure the water quality parameters at the locations and frequencies specified below during each six-month monitoring period specified in §141.86(d)(2)(i). Any small or medium-size system which installs optimal corrosion control treatment shall conduct such monitoring during each six-month monitoring period specified in §141.86(d)(2)(ii) in which the system exceeds the lead or copper action level.

(1) At taps, two samples for:

(i) pH;

(ii) Alkalinity;

(iii) Orthophosphate, when an inhibitor containing a phosphate compound is used;

(iv) Silica, when an inhibitor containing a silicate compound is used;

(v) Calcium, when calcium carbonate stabilization is used as part of corrosion control.

(2) Except as provided in paragraph (c)(3) of this section, at each entry point to the distribution system, at least one sample no less frequently than every two weeks (biweekly) for:

(i) pH;

(ii) When alkalinity is adjusted as part of optimal corrosion control, a reading of the dosage rate of the chemical used to adjust alkalinity, and the alkalinity concentration; and

(iii) When a corrosion inhibitor is used as part of optimal corrosion control, a reading of the dosage rate of the inhibitor used, and the concentration of orthophosphate or silica (whichever is applicable).

(3) Any ground water system can limit entry point sampling described in paragraph (c)(2) of this section to those

entry points that are representative of water quality and treatment conditions throughout the system. If water from untreated ground water sources mixes with water from treated ground water sources, the system must monitor for water quality parameters both at representative entry points receiving treatment and representative entry points receiving no treatment. Prior to the start of any monitoring under this paragraph, the system shall provide to the State written information identifying the selected entry points and documentation, including information on seasonal variability, sufficient to demonstrate that the sites are representative of water quality and treatment conditions throughout the system.

(d) *Monitoring after State specifies water quality parameter values for optimal corrosion control.* After the State specifies the values for applicable water quality control parameters reflecting optimal corrosion control treatment under §141.82(f), all large systems shall measure the applicable water quality parameters in accordance with paragraph (c) of this section and determine compliance with the requirements of §141.82(g) every six months with the first six-month period to begin on either January 1 or July 1, whichever comes first, after the State specifies the optimal values under §141.82(f). Any small or medium-size system shall conduct such monitoring during each six-month period specified in this paragraph in which the system exceeds the lead or copper action level. For any such small and medium-size system that is subject to a reduced monitoring frequency pursuant to §141.86(d)(4) at the time of the action level exceedance, the start of the applicable six-month monitoring period under this paragraph shall coincide with the start of the applicable monitoring period under §141.86(d)(4). Compliance with State-designated optimal water quality parameter values shall be determined as specified under §141.82(g).

(e) *Reduced monitoring.* (1) Any water system that maintains the range of values for the water quality parameters reflecting optimal corrosion control treatment during each of two consecutive six-month monitoring periods under paragraph (d) of this section shall continue monitoring at the entry point(s) to the distribution system as specified in paragraph (c)(2) of this section. Such system may collect two tap samples for applicable water quality parameters from the following reduced number of sites during each six-month monitoring period.

System size (No. of people served)	Reduced No. of sites for water quality parameters
>100,000	10
10,001 to 100,000	7
3,301 to 10,000	3
501 to 3,300	2
101 to 500	1
≤100	1

(2)(i) Any water system that maintains the range of values for the water quality parameters reflecting optimal corrosion control treatment specified by the State under §141.82(f) during three consecutive years of monitoring may reduce the frequency with which it collects the number of tap samples for applicable water quality parameters specified in this paragraph (e)(1) of this section from every six months to annually. This sampling begins during the calendar year immediately following the end of the monitoring period in which the third consecutive year of six-month monitoring occurs. Any water system that maintains the range of values for the water quality parameters reflecting optimal corrosion control treatment specified by the State under §141.82(f), during three consecutive years of annual monitoring under this paragraph may reduce the frequency with which it collects the number of tap samples for applicable water quality parameters specified in paragraph (e)(1) of this section from annually to every three years. This sampling begins no later than the third calendar year following the end of the monitoring period in which the third consecutive year of monitoring occurs.

(ii) A water system may reduce the frequency with which it collects tap samples for applicable water quality parameters specified in paragraph (e)(1) of this section to every three years if it demonstrates during two consecutive monitoring periods that its tap water lead level at the 90th percentile is less than or equal to the PQL for lead specified in §141.89 (a)(1)(ii), that its tap water copper level at the 90th percentile is less than or equal to 0.65 mg/L for copper in §141.80(c)(2), and that it also has maintained the range of values for the water quality parameters reflecting optimal corrosion control treatment specified by the State under §141.82(f). Monitoring conducted every three years shall be done no later than every third calendar year.

(3) A water system that conducts sampling annually shall collect these samples evenly throughout the year so as to reflect seasonal variability.

(4) Any water system subject to the reduced monitoring frequency that fails to operate at or above the minimum value or within the range of values for the water quality parameters specified by the State in §141.82(f) for more than nine days in any six-month period specified in §141.82(g) shall resume distribution system tap water sampling in accordance with the number and frequency requirements in paragraph (d) of this section. Such a system may resume annual monitoring for water quality parameters at the tap at the reduced number of sites specified in paragraph (e)(1) of this section after it has completed two subsequent consecutive six-month rounds of monitoring that meet the criteria of that paragraph and/or may resume triennial monitoring for water quality parameters at the tap at the reduced number of sites after it demonstrates through subsequent rounds of monitoring that it meets the criteria of either paragraph (e)(2)(i) or (e)(2)(ii) of this section.

(f) *Additional monitoring by systems.* The results of any monitoring conducted in addition to the minimum requirements of this section shall be considered by the system and the State in making any determinations (*i.e.*, determining concentrations of water quality parameters) under this section or §141.82.

SUMMARY OF MONITORING REQUIREMENTS FOR WATER QUALITY PARAMETERS [1]

Monitoring period	Parameters [2]	Location	Frequency
Initial monitoring	pH, alkalinity, orthophosphate or silica [3], calcium, conductivity, temperature.	Taps and at entry point(s) to distribution system.	Every 6 months.
After installation of corrosion control.	pH, alkalinity, orthophosphate or silica [3], calcium [4].	Taps	Every 6 months.
	pH, alkalinity, dosage rate and concentration (if alkalinity adjusted as part of corrosion control), inhibitor dosage rate and inhibitor residual [5].	Entry point(s) to distribution system [6].	No less frequently than every two weeks.
After State specifies parameter values for optimal corrosion control.	pH, alkalinity, orthophosphate or silica [3], calcium [4].	Taps	Every 6 months.
	pH, alkalinity dosage rate and concentration (if alkalinity adjusted as part of corrosion control), inhibitor dosage rate and inhibitor residual [5].	Entry point(s) to distribution system [6].	No less frequently than every two weeks.
Reduced monitoring	pH, alkalinity, orthophosphate or silica [3], calcium [4].	Taps	Every 6 months, annually [7] or every 3 years [8]; reduced number of sites.
	pH, alkalinity dosage rate and concentration (if alkalinity adjusted as part of corrosion control), inhibitor dosage rate and inhibitor residual [5].	Entry point(s) to distribution system [6].	No less frequently than every two weeks.

[1] Table is for illustrative purposes; consult the text of this section for precise regulatory requirements.

[2] Small and medium-size systems have to monitor for water quality parameters only during monitoring periods in which the system exceeds the lead or copper action level.

[3] Orthophosphate must be measured only when an inhibitor containing a phosphate compound is used. Silica must be measured only when an inhibitor containing silicate compound is used.

[4] Calcium must be measured only when calcium carbonate stabilization is used as part of corrosion control.

[5] Inhibitor dosage rates and inhibitor residual concentrations (orthophosphate or silica) must be measured only when an inhibitor is used.

[6] Ground water systems may limit monitoring to representative locations throughout the system.

[7] Water systems may reduce frequency of monitoring for water quality parameters at the tap from every six months to annually if they have maintained the range of values for water quality parameters reflecting optimal corrosion control during 3 consecutive years of monitoring.

[8] Water systems may further reduce the frequency of monitoring for water quality parameters at the tap from annually to once every 3 years if they have maintained the range of values for water quality parameters reflecting optimal corrosion control during 3 consecutive years of annual monitoring. Water systems may accelerate to triennial monitoring for water quality parameters at the tap if they have maintained 90th percentile lead levels less than or equal to 0.005 mg/L, 90th percentile copper levels less than or equal to 0.65 mg/L, and the range of water quality parameters designated by the State under §141.82(f) as representing optimal corrosion control during two consecutive six-month monitoring periods.

[56 FR 26548, June 7, 1991; 57 FR 28788, June 29, 1992, as amended at 59 FR 33862, June 30, 1994; 65 FR 2010, Jan. 12, 2000; 72 FR 57818, Oct. 10, 2007]

§141.88 Monitoring requirements for lead and copper in source water.

(a) *Sample location, collection methods, and number of samples.* (1) A water system that fails to meet the lead or copper action level on the basis of tap samples collected in accordance with §141.86 shall collect lead and copper source water samples in accordance with the following requirements regarding sample location, number of samples, and collection methods:

(i) Groundwater systems shall take a minimum of one sample at every entry point to the distribution system which is representative of each well after treatment (hereafter called a sampling point). The system shall take one sample at the same sampling point unless conditions make another sampling point more representative of each source or treatment plant.

(ii) Surface water systems shall take a minimum of one sample at every entry point to the distribution system after any application of treatment or in the distribution system at a point which is representative of each source after treatment (hereafter called a sampling point). The system shall take each sample at the same sampling point unless conditions make another sampling point more representative of each source or treatment plant.

NOTE TO PARAGRAPH (a)(1)(ii): For the purposes of this paragraph, surface water systems include systems with a combination of surface and ground sources.

(iii) If a system draws water from more than one source and the sources are combined before distribution, the system must sample at an entry point to the distribution system during periods of normal operating conditions (*i.e.*, when water is representative of all sources being used).

(iv) The State may reduce the total number of samples which must be analyzed by allowing the use of compositing. Compositing of samples must be done by certified laboratory personnel. Composite samples from a maximum of five samples are allowed, provided that if the lead concentration in the composite sample is greater than or equal to 0.001 mg/L or the copper concentration is greater than or equal to 0.160 mg/L, then either:

(A) A follow-upsample shall be taken and analyzed within 14 days at each sampling point included in the composite; or

(B) If duplicates of or sufficient quantities from the original samples from each sampling point used in the composite are available, the system may use these instead of resampling.

(2) Where the results of sampling indicate an exceedance of maximum permissible source water levels established under §141.83(b)(4), the State may require that one additional sample be collected as soon as possible after the initial sample was taken (but not to exceed two weeks) at the same sampling point. If a State-required confirmation sample is taken for lead or copper, then the results of the initial and confirmation sample shall be averaged in determining compliance with the State-specified maximum permissible levels. Any sample value below the detection limit shall be considered to be zero. Any value above the detection limit but below the PQL shall either be considered as the measured value or be considered one-half the PQL.

(b) *Monitoring frequency after system exceeds tap water action level.* Any system which exceeds the lead or copper action level at the tap shall collect one source water sample from each entry point to the distribution system no later than six months after the end of the monitoring period during which the lead or copper action level was exceeded. For monitoring periods that are annual or less frequent, the end of the monitoring period is September 30 of the calendar year in which the sampling occurs, or if the State has established an alternate monitoring period, the last day of that period.

(c) *Monitoring frequency after installation of source water treatment.* Any system which installs source water treatment pursuant to §141.83(a)(3) shall collect an additional source water sample from each entry point to the distribution system during two consecutive six-month monitoring periods by the deadline specified in §141.83(a)(4).

(d) *Monitoring frequency after State specifies maximum permissible source water levels or determines that source water treatment is not needed.* (1) A system shall monitor at the frequency specified below in cases where the State specifies maximum permissible source water levels under §141.83(b)(4) or determines that the system is not required to install source water treatment under §141.83(b)(2).

(i) A water system using only groundwater shall collect samples once during the three-year compliance period (as that term is defined in §141.2) in effect when the applicable State determination under paragraph (d)(1) of this section is made. Such systems shall collect samples once during each subsequent compliance period. Triennial samples shall be collected every third calendar year.

(ii) A water system using surface water (or a combination of surface and ground water) shall collect samples once during each calendar year, the first annual monitoring period to begin during the year in which the applicable State determination is made under paragraph (d)(1) of this section.

(2) A system is not required to conduct source water sampling for lead and/or copper if the system meets the action level for the specific contaminant in tap water samples during the entire source water sampling period applicable to the system under paragraph (d)(1) (i) or (ii) of this section.

(e) *Reduced monitoring frequency.* (1) A water system using only ground water may reduce the monitoring frequency for lead and copper in source water to once during each nine-year compliance cycle (as that term is defined in §141.2) provided that the samples are collected no later than every ninth calendar year and if the system meets one of the following criteria:

(i) The system demonstrates that finished drinking water entering the distribution system has been maintained below the maximum permissible lead and copper concentrations specified by the State in §141.83(b)(4) during at least three consecutive compliance periods under paragraph (d)(1) of this section; or

(ii) The State has determined that source water treatment is not needed and the system demonstrates that, during at least three consecutive compliance periods in which sampling was conducted under paragraph (d)(1) of this section, the concentration of lead in source water was less than or equal to 0.005 mg/L and the concentration of copper in source water was less than or equal to 0.65 mg/L.

(2) A water system using surface water (or a combination of surface water and ground water) may reduce the monitoring frequency in paragraph (d)(1) of this section to once during each nine-year compliance cycle (as that term is defined in §141.2) provided that the samples are collected no later than every ninth calendar year and if the system meets one of the following criteria:

(i) The system demonstrates that finished drinking water entering the distribution system has been maintained below the maximum permissible lead and copper concentrations specified by the State in §141.83(b)(4) for at least three consecutive years; or

(ii) The State has determined that source water treatment is not needed and the system demonstrates that, during at least three consecutive years, the concentration of lead in source water was less than or equal to 0.005 mg/L and the concentration of copper in source water was less than or equal to 0.65 mg/L.

(3) A water system that uses a new source of water is not eligible for reduced monitoring for lead and/or copper until concentrations in samples collected from the new source during three consecutive monitoring periods are below the maximum permissible

lead and copper concentrations specified by the State in §141.83(a)(5).

[56 FR 26548, June 7, 1991; 57 FR 28788 and 28789, June 29, 1992, as amended at 65 FR 2012, Jan. 12, 2000; 72 FR 57819, Oct. 10, 2007]

§141.89 Analytical methods.

(a) Analyses for lead, copper, pH, conductivity, calcium, alkalinity, orthophosphate, silica, and temperature shall be conducted with the methods in §141.23(k)(1).

(1) Analyses for alkalinity, calcium, conductivity, orthophosphate, pH, silica, and temperature may be performed by any person acceptable to the State. Analyses under this section for lead and copper shall only be conducted by laboratories that have been certified by EPA or the State. To obtain certification to conduct analyses for lead and copper, laboratories must:

(i) Analyze Performance Evaluation samples, which include lead and copper, provided by or acceptable to EPA or the State at least once a year by each method for which the laboratory desires certification; and

(ii) Achieve quantitative acceptance limits as follows:

(A) For lead: ±30 percent of the actual amount in the Performance Evaluation sample when the actual amount is greater than or equal to 0.005 mg/L. The Practical Quantitation Level, or PQL for lead is 0.005 mg/L.

(B) For Copper: ±10 percent of the actual amount in the Performance Evaluation sample when the actual amount is greater than or equal to 0.050 mg/L. The Practical Quantitation Level, or PQL for copper is 0.050 mg/L.

(iii) Achieve the method detection limit for lead of 0.001 mg/L according to the procedures in appendix B of part 136 of this title. This need only be accomplished if the laboratory will be processing source water composite samples under §141.88(a)(1)(iv).

(iv) Be currently certified by EPA or the State to perform analyses to the specifications described in paragraph (a)(1) of this section.

(2) States have the authority to allow the use of previously collected monitoring data for purposes of monitoring, if the data were collected and analyzed in accordance with the requirements of this subpart.

(3) All lead and copper levels measured between the PQL and MDL must be either reported as measured or they can be reported as one-half the PQL specified for lead and copper in paragraph (a)(1)(ii) of this section. All levels below the lead and copper MDLs must be reported as zero.

(4) All copper levels measured between the PQL and the MDL must be either reported as measured or they can be reported as one-half the PQL (0.025 mg/L). All levels below the copper MDL must be reported as zero.

(b) [Reserved]

[56 FR 26548, June 7, 1991, as amended at 57 FR 28789, June 29, 1992; 57 FR 31847, July 17, 1992; 59 FR 33863, June 30, 1994; 59 FR 62470, Dec. 5, 1994; 64 FR 67466, Dec. 1, 1999; 65 FR 2012, Jan. 12, 2000; 72 FR 57819, Oct. 10, 2007]

§141.90 Reporting requirements.

All water systems shall report all of the following information to the State in accordance with this section.

(a) *Reporting requirements for tap water monitoring for lead and copper and for water quality parameter monitoring.* (1) Except as provided in paragraph (a)(1)(viii) of this section, a water system shall report the information specified below for all tap water samples specified in §141.86 and for all water quality parameter samples specified in §141.87 within the first 10 days following the end of each applicable monitoring period specified in §141.86 and §141.87 (*i.e.*, every six months, annually, every 3 years, or every 9 years). For monitoring periods with a duration less than six months, the end of the monitoring period is the last date samples can be collected during that period as specified in §§141.86 and 141.87.

(i) The results of all tap samples for lead and copper including the location of each site and the criteria under §141.86(a) (3), (4), (5), (6), and/or (7) under which the site was selected for the system's sampling pool;

(ii) Documentation for each tap water lead or copper sample for which the water system requests invalidation pursuant to §141.86(f)(2);

(iii) [Reserved]

(iv) The 90th percentile lead and copper concentrations measured from among all lead and copper tap water samples collected during each monitoring period (calculated in accordance with §141.80(c)(3)), unless the State calculates the system's 90th percentile lead and copper levels under paragraph (h) of this section;

(v) With the exception of initial tap sampling conducted pursuant to §141.86(d)(1), the system shall designate any site which was not sampled during previous monitoring periods, and include an explanation of why sampling sites have changed;

(vi) The results of all tap samples for pH, and where applicable, alkalinity, calcium, conductivity, temperature, and orthophosphate or silica collected under §141.87 (b)–(e);

(vii) The results of all samples collected at the entry point(s) to the distribution system for applicable water quality parameters under §141.87 (b)–(e);

(viii) A water system shall report the results of all water quality parameter samples collected under §141.87(c) through (f) during each six-month monitoring period specified in §141.87(d) within the first 10 days following the end of the monitoring period unless the State has specified a more frequent reporting requirement.

(2) For a non-transient non-community water system, or a community water system meeting the criteria of §141.85(b)(7), that does not have enough taps that can provide first-draw samples, the system must either:

(i) Provide written documentation to the State identifying standing times and locations for enough non-first-draw samples to make up its sampling pool under §141.86(b)(5) by the start of the first applicable monitoring period under §141.86(d) that commences after April 11, 2000, unless the State has waived prior State approval of non-first-draw sample sites selected by the system pursuant to §141.86(b)(5); or

(ii) If the State has waived prior approval of non-first-draw sample sites selected by the system, identify, in writing, each site that did not meet the six-hour minimum standing time and the length of standing time for that particular substitute sample collected pursuant to §141.86(b)(5) and include this information with the lead and copper tap sample results required to be submitted pursuant to paragraph (a)(1)(i) of this section.

(3) At a time specified by the State, or if no specific time is designated by the State, then as early as possible prior to the addition of a new source or any long-term change in water treatment, a water system deemed to have optimized corrosion control under §141.81(b)(3), a water system subject to reduced monitoring pursuant to §141.86(d)(4), or a water system subject to a monitoring waiver pursuant to §141.86(g), shall submit written documentation to the State describing the change or addition. The State must review and approve the addition of a new source or long-term change in treatment before it is implemented by the water system. Examples of long-term treatment changes include the addition of a new treatment process or modification of an existing treatment process. Examples of modifications include switching secondary disinfectants, switching coagulants (e.g., alum to ferric chloride), and switching corrosion inhibitor products (e.g., orthophosphate to blended phosphate). Long-term changes can include dose changes to existing chemicals if the system is planning long-term changes to its finished water pH or residual inhibitor concentration. Long-term treatment changes would not include chemical dose fluctuations associated with daily raw water quality changes.

(4) Any small system applying for a monitoring waiver under §141.86(g), or subject to a waiver granted pursuant to §141.86(g)(3), shall provide the following information to the State in writing by the specified deadline:

(i) By the start of the first applicable monitoring period in §141.86(d), any small water system applying for a monitoring waiver shall provide the documentation required to demonstrate that it meets the waiver criteria of §§141.86(g)(1) and (2).

(ii) No later than nine years after the monitoring previously conducted pursuant to §141.86(g)(2) or §141.86(g)(4)(i), each small system desiring to maintain its monitoring waiver shall provide the information required by §§141.86(g)(4)(i) and (ii).

(iii) No later than 60 days after it becomes aware that it is no longer free of lead-containing and/or copper-containing material, as appropriate, each small system with a monitoring waiver shall provide written notification to the State, setting forth the circumstances resulting in the lead-containing and/or copper-containing materials being introduced into the system and what corrective action, if any, the system plans to remove these materials.

(iv) By October 10, 2000, any small system with a waiver granted prior to April 11, 2000 and that has not previously met the requirements of §141.86(g)(2) shall provide the information required by that paragraph.

(5) Each ground water system that limits water quality parameter monitoring to a subset of entry points under §141.87(c)(3) shall provide, by the commencement of such monitoring, written correspondence to the State that identifies the selected entry points and includes information sufficient to demonstrate that the sites are representative of water quality and treatment conditions throughout the system.

(b) *Source water monitoring reporting requirements.* (1) A water system shall report the sampling results for all source water samples collected in accordance with §141.88 within the first 10 days following the end of each source water monitoring period (*i.e.*, annually, per compliance period, per compliance cycle) specified in §141.88.

(2) With the exception of the first round of source water sampling conducted pursuant to §141.88(b), the system shall specify any site which was not sampled during previous monitoring periods, and include an explanation of why the sampling point has changed.

(c) *Corrosion control treatment reporting requirements.* By the applicable dates under §141.81, systems shall report the following information:

(1) For systems demonstrating that they have already optimized corrosion control, information required in §141.81(b) (2) or (3).

(2) For systems required to optimize corrosion control, their recommendation regarding optimal corrosion control treatment under §141.82(a).

(3) For systems required to evaluate the effectiveness of corrosion control treatments under §141.82(c), the information required by that paragraph.

(4) For systems required to install optimal corrosion control designated by the State under §141.82(d), a letter certifying that the system has completed installing that treatment.

(d) *Source water treatment reporting requirements.* By the applicable dates in §141.83, systems shall provide the following information to the State:

(1) If required under §141.83(b)(1), their recommendation regarding source water treatment;

(2) For systems required to install source water treatment under §141.83(b)(2), a letter certifying that the system has completed installing the treatment designated by the State within 24 months after the State designated the treatment.

(e) *Lead service line replacement reporting requirements.* Systems shall report the following information to the State to demonstrate compliance with the requirements of §141.84:

(1) No later than 12 months after the end of a monitoring period in which a system exceeds the lead action level in sampling referred to in §141.84(a), the system must submit written documentation to the State of the material evaluation conducted as required in §141.86(a), identify the initial number of lead service lines in its distribution system at the time the system exceeds the lead action level, and provide the system's schedule for annually replacing at least 7 percent of the initial number of lead service lines in its distribution system.

(2) No later than 12 months after the end of a monitoring period in which a system exceeds the lead action level in sampling referred to in §141.84(a), and every 12 months thereafter, the system shall demonstrate to the State in writing that the system has either:

(i) Replaced in the previous 12 months at least 7 percent of the initial lead service lines (or a greater number of lines specified by the State under §141.84(e)) in its distribution system, or

(ii) Conducted sampling which demonstrates that the lead concentration in all service line samples from an individual line(s), taken pursuant to §141.86(b)(3), is less than or equal to 0.015 mg/L. In such cases, the total number of lines replaced and/or which meet the criteria in §141.84(c) shall equal at least 7 percent of the initial number of lead lines identified under paragraph (e)(1) of this section (or the percentage specified by the State under §141.84(e)).

(3) The annual letter submitted to the State under paragraph (e)(2) of this section shall contain the following information:

(i) The number of lead service lines scheduled to be replaced during the previous year of the system's replacement schedule;

(ii) The number and location of each lead service line replaced during the previous year of the system's replacement schedule;

(iii) If measured, the water lead concentration and location of each lead service line sampled, the sampling method, and the date of sampling.

(4) Any system which collects lead service line samples following partial lead service line replacement required by §141.84 shall report the results to the State within the first ten days of the month following the month in which the system receives the laboratory results, or as specified by the State. States, at their discretion may eliminate this requirement to report these monitoring results. Systems shall also report any additional information as specified by the State, and in a time and manner prescribed by the State, to verify that all partial lead service line replacement activities have taken place.

(f) *Public education program reporting requirements.* (1) Any water system that is subject to the public education requirements in §141.85 shall, within ten days after the end of each period in which the system is required to perform public education in accordance with §141.85(b), send written documentation to the State that contains:

(i) A demonstration that the system has delivered the public education materials that meet the content requirements in §141.85(a) and the delivery requirements in §141.85(b); and

(ii) A list of all the newspapers, radio stations, television stations, and facilities and organizations to which the system delivered public education materials during the period in which the system was required to perform public education tasks.

(2) Unless required by the State, a system that previously has submitted the information required by paragraph (f)(1)(ii) of this section need not resubmit the information required by paragraph (f)(1)(ii) of this section, as long as there have been no changes in the distribution list and the system certifies that the public education materials were distributed to the same list submitted previously.

(3) No later than 3 months following the end of the monitoring period, each system must mail a sample copy of the consumer notification of tap results to the State along with a certification that the notification has been distributed in a manner consistent with the requirements of §141.85(d).

(g) *Reporting of additional monitoring data.* Any system which collects sampling data in addition to that required by this subpart shall report the results to the State within the first ten days following the end of the applicable monitoring period under §§141.86, 141.87 and 141.88 during which the samples are collected.

(h) *Reporting of 90th percentile lead and copper concentrations where the State calculates a system's 90th percentile concentrations.* A water system is not required to report the 90th percentile lead and copper concentrations measured from among all lead and copper tap water samples collected during each monitoring period, as required by paragraph (a)(1)(iv) of this section if:

(1) The State has previously notified the water system that it will calculate the water system's 90th percentile lead and copper concentrations, based on the lead and copper tap results submitted pursuant to paragraph (h)(2)(i) of this section, and has specified a date before the end of the applicable monitoring period by which the system must provide the results of lead and copper tap water samples;

(2) The system has provided the following information to the State by the date specified in paragraph (h)(1) of this section:

(i) The results of all tap samples for lead and copper including the location of each site and the criteria under §141.86(a)(3), (4), (5), (6), and/or (7) under which the site was selected for the system's sampling pool, pursuant to paragraph (a)(1)(i) of this section; and

(ii) An identification of sampling sites utilized during the current monitoring period that were not sampled during previous monitoring periods, and an explanation why sampling sites have changed; and

(3) The State has provided the results of the 90th percentile lead and copper calculations, in writing, to the water system before the end of the monitoring period.

[56 FR 26548, June 7, 1991; 57 FR 28789, June 29, 1992, as amended at 59 FR 33864, June 30, 1994; 65 FR 2012, Jan. 12, 2000; 72 FR 57819, Oct. 10, 2007]

§141.91 Recordkeeping requirements.

Any system subject to the requirements of this subpart shall retain on its premises original records of all sampling data and analyses, reports, surveys, letters, evaluations, schedules, State determinations, and any other information required by §§141.81 through 141.88. Each water system shall retain the records required by this section for no fewer than 12 years.

Subpart J—Use of Non-Centralized Treatment Devices

SOURCE: 52 FR 25716, July 8, 1987, unless otherwise noted.

§141.100 Criteria and procedures for public water systems using point-of-entry devices.

(a) Public water systems may use point-of-entry devices to comply with maximum contaminant levels only if they meet the requirements of this section.

(b) It is the responsibility of the public water system to operate and maintain the point-of-entry treatment system.

(c) The public water system must develop and obtain State approval for a monitoring plan before point-of-entry devices are installed for compliance. Under the plan approved by the State, point-of-entry devices must provide health protection equivalent to central water treatment. "Equivalent" means that the water would meet all national primary drinking water regulations and would be of acceptable quality similar to water distributed by a well-operated central treatment plant. In addition to the VOCs, monitoring must include physical measurements and observations such as total flow treated and mechanical condition of the treatment equipment.

(d) Effective technology must be properly applied under a plan approved by the State and the microbiological safety of the water must be maintained.

(1) The State must require adequate certification of performance, field testing, and, if not included in the certification process, a rigorous engineering design review of the point-of-entrydevices.

(2) The design and application of the point-of-entry devices must consider the tendency for increase in heterotrophic bacteria concentrations in water treated with activated carbon. It may be necessary to use frequent backwashing, post-contactor disinfection, and Heterotrophic Plate Count monitoring to ensure that the microbiological safety of the water is not compromised.

(e) *All consumers shall be protected.* Every building connected to the system must have a point-of-entrydevice installed, maintained, and adequately monitored. The State must be assured that every building is subject to treatment and monitoring, and that the rights and responsibilities of the public water system customer convey with title upon sale of property.

[52 FR 25716, July 8, 1987; 53 FR 25111, July 1, 1988]

§141.101 Use of bottled water.

Public water systems shall not use bottled water to achieve compliance with an MCL. Bottled water may be used on a temporary basis to avoid unreasonable risk to health.

[63 FR 31934, June 11, 1998]

Subpart K—Treatment Techniques

SOURCE: 56 FR 3594, Jan. 30, 1991, unless otherwise noted.

§141.110 General requirements.

The requirements of subpart K of this part constitute national primary drinking water regulations. These regulations establish treatment techniques in lieu of maximum contaminant levels for specified contaminants.

§141.111 Treatment techniques for acrylamide and epichlorohydrin.

Each public water system must certify annually in writing to the State (using third party or manufacturer's certification) that when acrylamide and epichlorohydrin are used in drinking water systems, the combination (or product) of dose and monomer level does not exceed the levels specified as follows:

Acrylamide=0.05% dosed at 1 ppm (or equivalent)
Epichlorohydrin=0.01% dosed at 20 ppm (or equivalent)

Certifications can rely on manufacturers or third parties, as approved by the State.

Subpart L—Disinfectant Residuals, Disinfection Byproducts, and Disinfection Byproduct Precursors

§141.130 General requirements.

(a) The requirements of this subpart L constitute national primary drinking water regulations.

(1) The regulations in this subpart establish criteria under which community water systems (CWSs) and nontransient, noncommunity water systems (NTNCWSs) which add a chemical disinfectant to the water in any part of the drinking water treatment process must modify their practices to meet MCLs and MRDLs in §§141.64 and 141.65, respectively, and must meet the treatment technique requirements for disinfection byproduct precursors in §141.135.

(2) The regulations in this subpart establish criteria under which transient NCWSs that use chlorine dioxide as a disinfectant or oxidant must modify their practices to meet the MRDL for chlorine dioxide in §141.65.

(3) EPA has established MCLs for TTHM and HAA5 and treatment technique requirements for disinfection byproduct precursors to limit the levels of known and unknown disinfection byproducts which may have adverse health effects. These disinfection byproducts may include chloroform; bromodichloromethane; dibromochloromethane; bromoform; dichloroacetic acid; and trichloroacetic acid.

(b) *Compliance dates*—(1) *CWSs and NTNCWSs.* Unless otherwise noted, systems must comply with the requirements of this subpart as follows. Subpart H systems serving 10,000 or more persons must comply with this subpart beginning January 1, 2002. Subpart H systems serving fewer than 10,000 persons and systems using only ground water not under the direct influence of surface water must comply with this subpart beginning January 1, 2004.

(2) *Transient NCWSs.* Subpart H systems serving 10,000 or more persons and using chlorine dioxide as a disinfectant or oxidant must comply with any requirements for chlorine dioxide in this subpart beginning January 1, 2002. Subpart H systems serving fewer than 10,000 persons and using chlorine dioxide as a disinfectant or oxidant and systems using only ground water not under the direct influence of surface water and using chlorine dioxide as a disinfectant or oxidant must comply with any requirements for chlorine dioxide in this subpart beginning January 1, 2004.

(c) Each CWS and NTNCWS regulated under paragraph (a) of this section must be operated by qualified personnel who meet the requirements specified by the State and are included in a State register of qualified operators.

(d) *Control of disinfectant residuals.* Notwithstanding the MRDLs in §141.65, systems may increase residual disinfectant levels in the distribution system of chlorine or chloramines (but not chlorine dioxide) to a level and for a time necessary to protect public health, to address specific microbiological contamination problems caused by circumstances such as, but not limited to, distribution line breaks, storm run-offevents, source water contamination events, or cross-connection events.

[63 FR 69466, Dec. 16, 1998, as amended at 66 FR 3776, Jan. 16, 2001]

§141.131 Analytical requirements.

(a) *General.* (1) Systems must use only the analytical methods specified in this section, or their equivalent as approved by EPA, to demonstrate compliance with the requirements of this subpart and with the requirements of subparts U and V of this part. These methods are effective for compliance monitoring February 16, 1999, unless a different effective date is specified in this section or by the State.

(2) The following documents are incorporated by reference. The Director of the Federal Register approves this incorporation by reference in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. Copies may be inspected at EPA's Drinking Water Docket, 1301 Constitution Avenue, NW., EPA West, Room B102, Washington, DC 20460, or at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202–741–6030, or go to: *http://www.archives.gov/federal I register/code I of I federal I regulations/ibr I locations.html.* EPA Method 552.1 is in Methods for the Determination of Organic Compounds in Drinking Water-Supplement II, USEPA, August 1992, EPA/600/R–92/129 (available through National Information Technical Service (NTIS), PB92–207703). EPA Methods 502.2, 524.2, 551.1, and 552.2 are in Methods for the Determination of Organic Compounds in Drinking Water-Supplement III, USEPA, August 1995, EPA/600/R–95/131 (available through NTIS, PB95–261616). EPA Method 300.0 is in Methods for the Determination of Inorganic Substances in Environmental Samples, USEPA, August 1993, EPA/600/R–93/100 (available through NTIS, PB94–121811). EPA Methods 300.1 and 321.8 are in Methods for the Determination of Organic and Inorganic Compounds in Drinking Water, Volume 1, USEPA, August 2000, EPA 815–R–00–014 (available through NTIS, PB2000–106981). EPA Method 317.0, Revision 2.0, ''Determination of Inorganic Oxyhalide Disinfection By-Products in Drinking Water Using Ion Chromatography with the Addition of a Postcolumn Reagent for Trace Bromate Analysis,'' USEPA, July 2001, EPA 815–B–01–001, EPA Method 326.0, Revision 1.0, ''Determination of Inorganic Oxyhalide Disinfection By-Products in Drinking Water Using Ion Chromatography Incorporating the Addition of a Suppressor Acidified Postcolumn Reagent for Trace Bromate Analysis,'' USEPA, June 2002, EPA 815–R–03–007, EPA Method 327.0, Revision 1.1, ''Determination of Chlorine Dioxide and Chlorite Ion in Drinking Water Using Lissamine Green B and Horseradish Peroxidase with Detection by Visible Spectrophotometry,'' USEPA, May 2005, EPA 815–R–05–008 and EPA Method 552.3, Revision 1.0, ''Determination of Haloacetic Acids and Dalapon in Drinking Water by Liquid-liquid Microextraction, Derivatization, and Gas Chromatography with Electron Capture Detection,'' USEPA, July 2003, EPA–815–B–03–002 can be accessed and downloaded directly on-line at *http://www.epa.gov/safewater/methods/sourcalt.html.* EPA Method 415.3, Revision 1.1, ''Determination of Total Organic Carbon and Specific UV Absorbance at 254 nm in Source Water and Drinking Water,'' USEPA, February 2005, EPA/600/R–05/055 can be accessed and downloaded directly on-line at *www.epa.gov/nerlcwww/ordmeth.htm.* Standard Methods 4500–Cl D, 4500–Cl E, 4500–Cl F, 4500–Cl G, 4500–Cl H, 500–Cl I, 4500–ClO_2 D, 4500–ClO_2 E, 6251 B, and 5910 B shall be followed in accordance with Standard Methods for the Examination of Water and Wastewater, 19th or 20th Editions, American Public Health Association, 1995 and 1998, respectively. The cited methods published in either edition may be used. Standard Methods 5310 B, 5310 C, and 5310 D shall be followed in accordance with the Supplement to the 19th Edition of Standard Methods for the Examination of Water and Wastewater, or the Standard Methods for the Examination of Water and Wastewater, 20th Edition, American Public Health Association, 1996 and 1998, respectively. The cited methods published in either edition may be used. Copies may be obtained from the American Public Health Association, 1015 Fifteenth

Street, NW., Washington, DC 20005. Standard Methods 4500–Cl D–00, 4500–Cl E–00, 4500–Cl F–00, 4500–Cl G–00, 4500–Cl H–00, 4500–Cl I–00, 4500–ClO_2 E–00, 6251 B–94, 5310 B–00, 5310 C–00, 5310 D–00 and 5910 B–00 are available at *http://www.standardmethods.org* or at EPA's Water Docket. The year in which each method was approved by the Standard Methods Committee is designated by the last two digits in the method number. The methods listed are the only Online versions that are IBR-approved. ASTM Methods D 1253–86 and D 1253–86 (Reapproved 1996) shall be followed in accordance with the Annual Book of ASTM Standards, Volume 11.01, American Society for Testing and Materials International, 1996 or any ASTM edition containing the IBR-approved version of the method may be used. ASTM Method D1253–03 shall be followed in accordance with the Annual Book of ASTM Standards, Volume 11.01, American Society for Testing and Materials International, 2004 or any ASTM edition containing the IBR-approved version of the method may be used. ASTM Method D 6581–00 shall be followed in accordance with the Annual Book of ASTM Standards, Volume 11.01, American Society for Testing and Materials International, 2001 or any ASTM edition containing the IBR-approved version of the method may be used; copies may be obtained from the American Society for Testing and Materials International, 100 Barr Harbor Drive, West Conshohocken, PA 19428–2959.

(b) *Disinfection byproducts.* (1) Systems must measure disinfection byproducts by the methods (as modified by the footnotes) listed in the following table or one of the alternative methods listed in appendix A to subpart C of this part:

APPROVED METHODS FOR DISINFECTION BYPRODUCT COMPLIANCE MONITORING

Contaminant and methodology[1]	EPA method	Standard method[2]	SM online[9]	ASTM method[3]
TTHM				
P&T/GC/EICD & PID	502.2[4].			
P&T/GC/MS	524.2.			
LLE/GC/ECD	551.1.			
HAA5				
LLE (diazomethane)/GC/ECD		6251 B[5]	6251 B–94.	
SPE (acidic methanol)/GC/ECD.	552.1[5].			
LLE (acidic methanol)/GC/ECD.	552.2, 552.3.			
Bromate				
Ion chromatography	300.1			D 6581–00
Ion chromatography & post column reaction.	317.0 Rev 2.0[6], 326.0[6].			
IC/ICP–MS	321.8[6] [7].			
Chlorite				
Amperometric titration		4500–ClO_2 E[8]	4500–ClO_2 E–00[8].	
Spectrophotometry	327.0 Rev 1.1[8].			
Ion chromatography	300.0, 300.1, 317.0 Rev 2.0, 326.0.			D 6581–00

[1] P&T = purge and trap; GC = gas chromatography; EICD = electrolytic conductivity detector; PID = photoionization detector; MS = mass spectrometer; LLE = liquid/liquid extraction; ECD = electron capture detector; SPE = solid phase extraction; IC = ion chromatography; ICP–MS = inductively coupled plasma/mass spectrometer.

[2] 19th and 20th editions of Standard Methods for the Examination of Water and Wastewater, 1995 and 1998, respectively, American Public Health Association; either of these editions may be used.

[3] Annual Book of ASTM Standards, 2001 or any year containing the cited version of the method, Vol 11.01.

[4] If TTHMs are the only analytes being measured in the sample, then a PID is not required.

[5] The samples must be extracted within 14 days of sample collection.

[6] Ion chromatography & post column reaction or IC/ICP-MS must be used for monitoring of bromate for purposes of demonstrating eligibility of reduced monitoring, as prescribed in §141.132(b)(3)(ii).

[7] Samples must be preserved at the time of sampling with 50 mg ethylenediamine (EDA)/L of sample and must be analyzed within 28 days.

[8] Amperometric titration or spectrophotometry may be used for routine daily monitoring of chlorite at the entrance to the distribution system, as prescribed in §141.132(b)(2)(i)(A). Ion chromatography must be used for routine monthly monitoring of chlorite and additional monitoring of chlorite in the distribution system, as prescribed in §141.132(b)(2)(i)(B) and (b)(2)(ii).

[9] The Standard Methods Online version that is approved is indicated by the last two digits in the method number which is the year of approval by the Standard Method Committee. Standard Methods Online are available at *http://www.standardmethods.org.*

(2) Analyses under this section for disinfection byproducts must be conducted by laboratories that have received certification by EPA or the

State, except as specified under paragraph (b)(3) of this section. To receive certification to conduct analyses for the DBP contaminants in §§141.64, 141.135, and subparts U and V of this part, the laboratory must:

(i) Analyze Performance Evaluation (PE) samples that are acceptable to EPA or the State at least once during each consecutive 12 month period by each method for which the laboratory desires certification.

(ii) Until March 31, 2007, in these analyses of PE samples, the laboratory must achieve quantitative results within the acceptance limit on a minimum of 80% of the analytes included in each PE sample. The acceptance limit is defined as the 95% confidence interval calculated around the mean of the PE study between a maximum and minimum acceptance limit of ±50% and ±15% of the study mean.

(iii) Beginning April 1, 2007, the laboratory must achieve quantitative results on the PE sample analyses that are within the following acceptance limits:

DBP	Acceptance limits (percent of true value)	Comments
TTHM		
Chloroform	±20	Laboratory must meet all 4 individual THM acceptance limits in order to successfully pass a PE sample for TTHM
Bromodichloromethane.	±20	
Dibromochloromethane.	±20	
Bromoform	±20	
HAA5		
Monochloroacetic Acid.	±40	Laboratory must meet the acceptance limits for 4 out of 5 of the HAA5 compounds in order to successfully pass a PE sample for HAA5
Dichloroacetic Acid.	±40	
Trichloroacetic Acid.	±40	
Monobromoacetic Acid.	±40	
Dibromoacetic Acid.	±40	
Chlorite	±30	
Bromate	±30	

(iv) Beginning April 1, 2007, report quantitative data for concentrations at least as low as the ones listed in the following table for all DBP samples analyzed for compliance with §§141.64, 141.135, and subparts U and V of this part:

DBP	Minimum reporting level (mg/L)[1]	Comments
TTHM[2]		
Chloroform	0.0010	
Bromodichloromethane	0.0010	
Dibromochloromethane	0.0010	
Bromoform	0.0010	
HAA5[2]		
Monochloroacetic Acid	0.0020	
Dichloroacetic Acid	0.0010	
Trichloroacetic Acid	0.0010	
Monobromoacetic Acid	0.0010	
Dibromoacetic Acid	0.0010	
Chlorite	0.020	Applicable to monitoring as prescribed in §141.132(b)(2)(1)(B) and (b)(2)(ii).
Bromate	0.0050 or 0.0010	Laboratories that use EPA Methods 317.0 Revision 2.0, 326.0 or 321.8 must meet a 0.0010 mg/L MRL for bromate.

[1] The calibration curve must encompass the regulatory minimum reporting level (MRL) concentration. Data may be reported for concentrations lower than the regulatory MRL as long as the precision and accuracy criteria are met by analyzing an MRL check standard at the lowest reporting limit chosen by the laboratory. The laboratory must verify the accuracy of the calibration curve at the MRL concentration by analyzing an MRL check standard with a concentration less than or equal to 110% of the MRL with each batch of samples. The measured concentration for the MRL check standard must be ±50% of the expected value, if any field sample in the batch has a concentration less than 5 times the regulatory MRL. Method requirements to analyze higher concentration check standards and meet tighter acceptance criteria for them must be met in addition to the MRL check standard requirement.

[2] When adding the individual trihalomethane or haloacetic acid concentrations to calculate the TTHM or HAA5 concentrations, respectively, a zero is used for any analytical result that is less than the MRL concentration for that DBP, unless otherwise specified by the State.

(3) A party approved by EPA or the State must measure daily chlorite samples at the entrance to the distribution system.

(c) *Disinfectant residuals.* (1) Systems must measure residual disinfectant concentration for free chlorine, combined chlorine (chloramines), and chlorine dioxide by the methods listed in the following table or one of the alternative methods listed in appendix A to subpart C of this part:

Methodology	SM (19th or 20th ed)	SM Online [2]	ASTM method	EPA method	Residual measured [1]			
					Free Cl_2	Combined Cl_2	Total Cl_2	ClO_2
Amperometric Titration	4500–Cl D	4500–Cl D–00	D 1253–86 (96), 03		X	X	X	
Low Level Amperometric Titration.	4500–Cl E	4500–Cl E–00					X	
DPD Ferrous Titrimetric	4500–Cl F	4500–Cl F–00			X	X	X	
DPD Colorimetric	4500–Cl G	4500–Cl G–00			X	X	X	
Syringaldazine (FACTS)	4500–Cl H	4500–Cl H–00			X			
Iodometric Electrode	4500–Cl I	4500–Cl I–00					X	
DPD	4500–ClO_2 D							X
Amperometric Method II	4500–ClO_2 E	4500–ClO_2 E–00						X
Lissamine Green Spectrophotometric.				327.0 Rev 1.1				X

[1] X indicates method is approved for measuring specified disinfectant residual. Free chlorine or total chlorine may be measured for demonstrating compliance with the chlorine MRDL and combined chlorine, or total chlorine may be measured for demonstrating compliance with the chloramine MRDL.

[2] The Standard Methods Online version that is approved is indicated by the last two digits in the method number which is the year of approval by the Standard Method Committee. Standard Methods Online are available at *http://www.standardmethods.org.*

(2) If approved by the State, systems may also measure residual disinfectant concentrations for chlorine, chloramines, and chlorine dioxide by using DPD colorimetric test kits.

(3) A party approved by EPA or the State must measure residual disinfectant concentration.

(d) *Additional analytical methods.* Systems required to analyze parameters not included in paragraphs (b) and (c) of this section must use the following methods or one of the alternative methods listed in appendix A to subpart C of this part. A party approved by EPA or the State must measure these parameters.

(1) *Alkalinity.* All methods allowed in §141.89(a) for measuring alkalinity.

(2) *Bromide.* EPA Methods 300.0, 300.1, 317.0 Revision 2.0, 326.0, or ASTM D 6581–00.

(3) *Total Organic Carbon (TOC).* Standard Method 5310 B or 5310 B–00 (High-Temperature Combustion Method) or Standard Method 5310 C or 5310 C–00 (Persulfate-Ultraviolet or Heated-Persulfate Oxidation Method) or Standard Method 5310 D or 5310 D–00 (Wet-Oxidation Method) or EPA Method 415.3 Revision 1.1. Inorganic carbon must be removed from the samples prior to analysis. TOC samples may not be filtered prior to analysis. TOC samples must be acidified at the time of sample collection to achieve pH less than or equal to 2 with minimal addition of the acid specified in the method or by the instrument manufacturer. Acidified TOC samples must be analyzed within 28 days.

(4) *Specific Ultraviolet Absorbance (SUVA).* SUVA is equal to the UV absorption at 254nm (UV_{254}) (measured in m^{-1} divided by the dissolved organic carbon (DOC) concentration (measured as mg/L). In order to determine SUVA, it is necessary to separately measure UV_{254} and DOC. When determining SUVA, systems must use the methods stipulated in paragraph (d)(4)(i) of this section to measure DOC and the method stipulated in paragraph (d)(4)(ii) of this section to measure $UV_{254.}$ SUVA must be determined on water prior to the addition of disinfectants/oxidants by the system. DOC and UV_{254} samples used to determine a SUVA value must be taken at the same time and at the same location.

(i) *Dissolved Organic Carbon (DOC).* Standard Method 5310 B or 5310 B–00 (High-Temperature Combustion Method) or Standard Method 5310 C or 5310

C–00 (Persulfate-Ultraviolet or Heated-Persulfate Oxidation Method) or Standard Method 5310 D or 5310 D–00 (Wet-Oxidation Method) or EPA Method 415.3 Revision 1.1. DOC samples must be filtered through the 0.45 μm pore-diameter filter as soon as practical after sampling, not to exceed 48 hours. After filtration, DOC samples must be acidified to achieve pH less than or equal to 2 with minimal addition of the acid specified in the method or by the instrument manufacturer. Acidified DOC samples must be analyzed within 28 days of sample collection. Inorganic carbon must be removed from the samples prior to analysis. Water passed through the filter prior to filtration of the sample must serve as the filtered blank. This filtered blank must be analyzed using procedures identical to those used for analysis of the samples and must meet the following criteria: DOC <0.5 mg/L.

(ii) Ultraviolet Absorption at 254 nm (UV_{254}). Standard Method 5910 B or 5910 B–00 (Ultraviolet Absorption Method) or EPA Method 415.3 Revision 1.1. UV absorption must be measured at 253.7 nm (may be rounded off to 254 nm). Prior to analysis, UV_{254} samples must be filtered through a 0.45 μm pore-diameter filter. The pH of UV_{254} samples may not be adjusted. Samples must be analyzed as soon as practical after sampling, not to exceed 48 hours.

(5) *pH.* All methods allowed in §141.23(k)(1) for measuring pH.

(6) *Magnesium.* All methods allowed in §141.23(k)(1) for measuring magnesium.

[63 FR 69466, Dec. 16, 1998, as amended at 66 FR 3776, Jan. 16, 2001; 71 FR 479, Jan. 4, 2006; 71 FR 37168, June 29, 2006; 74 FR 30958, June 29, 2009]

§141.132 Monitoring requirements.

(a) *General requirements.* (1) Systems must take all samples during normal operating conditions.

(2) Systems may consider multiple wells drawing water from a single aquifer as one treatment plant for determining the minimum number of TTHM and HAA5 samples required, with State approval in accordance with criteria developed under §142.16(h)(5) of this chapter.

(3) Failure to monitor in accordance with the monitoring plan required under paragraph (f) of this section is a monitoring violation.

(4) Failure to monitor will be treated as a violation for the entire period covered by the annual average where compliance is based on a running annual average of monthly or quarterly samples or averages and the system's failure to monitor makes it impossible to determine compliance with MCLs or MRDLs.

(5) Systems may use only data collected under the provisions of this subpart to qualify for reduced monitoring.

(b) *Monitoring requirements for disinfection byproducts*—(1) *TTHMs and HAA5*—(i) *Routine monitoring.* Systems must monitor at the frequency indicated in the following table:

ROUTINE MONITORING FREQUENCY FOR TTHM AND HAA5

Type of system	Minimum monitoring frequency	Sample location in the distribution system
Subpart H system serving at least 10,000 persons.	Four water samples per quarter per treatment plant.	At least 25 percent of all samples collected each quarter at locations representing maximum residence time. Remaining samples taken at locations representative of at least average residence time in the distribution system and representing the entire distribution system, taking into account number of persons served, different sources of water, and different treatment methods. [1]
Subpart H system serving from 500 to 9,999 persons.	One water sample per quarter per treatment plant.	Locations representing maximum residence time. [1]
Subpart H system serving fewer than 500 persons.	One sample per year per treatment plant during month of warmest water temperature.	Locations representing maximum residence time. [1] If the sample (or average of annual samples, if more than one sample is taken) exceeds the MCL, the system must increase monitoring to one sample per treatment plant per quarter, taken at a point reflecting the maximum residence time in the distribution system, until the system meets criteria in paragraph (b)(1)(iv) of this section.

ROUTINE MONITORING FREQUENCY FOR TTHM AND HAA5—Continued

Type of system	Minimum monitoring frequency	Sample location in the distribution system
System using only ground water not under direct influence of surface water using chemical disinfectant and serving at least 10,000 persons.	One water sample per quarter per treatment plant[2].	Locations representing maximum residence time.[1]
System using only ground water not under direct influence of surface water using chemical disinfectant and serving fewer than 10,000 persons.	One sample per year per treatment plant[2] during month of warmest water temperature.	Locations representing maximum residence time.[1] If the sample (or average of annual samples, if more than one sample is taken) exceeds the MCL, the system must increase monitoring to one sample per treatment plant per quarter, taken at a point reflecting the maximum residence time in the distribution system, until the system meets criteria in paragraph (b)(1)(iv) of this section.

[1] If a system elects to sample more frequently than the minimum required, at least 25 percent of all samples collected each quarter (including those taken in excess of the required frequency) must be taken at locations that represent the maximum residence time of the water in the distribution system. The remaining samples must be taken at locations representative of at least average residence time in the distribution system.

[2] Multiple wells drawing water from a single aquifer may be considered one treatment plant for determining the minimum number of samples required, with State approval in accordance with criteria developed under §142.16(h)(5) of this chapter.

(ii) Systems may reduce monitoring, except as otherwise provided, in accordance with the following table:

REDUCED MONITORING FREQUENCY FOR TTHM AND HAA5

If you are a . . .	You may reduce monitoring if you have monitored at least one year and your . . .	To this level
Subpart H system serving at least 10,000 persons which has a source water annual average TOC level, before any treatment, ≤4.0 mg/L.	TTHM annual average ≤0.040 mg/L and HAA5 annual average ≤0.030 mg/L.	One sample per treatment plant per quarter at distribution system location reflecting maximum residence time.
Subpart H system serving from 500 to 9,999 persons which has a source water annual average TOC level, before any treatment, ≤4.0 mg/L.	TTHM annual average ≤0.040 mg/L and HAA5 annual average ≤0.030 mg/L.	One sample per treatment plant per year at distribution system location reflecting maximum residence time during month of warmest water temperature. NOTE: Any Subpart H system serving fewer than 500 persons may not reduce its monitoring to less than one sample per treatment plant per year.
System using only ground water not under direct influence of surface water using chemical disinfectant and serving at least 10,000 persons.	TTHM annual average ≤0.040 mg/L and HAA5 annual average ≤0.030 mg/L.	One sample per treatment plant per year at distribution system location reflecting maximum residence time during month of warmest water temperature
System using only ground water not under direct influence of surface water using chemical disinfectant and serving fewer than 10,000 persons.	TTHM annual average ≤0.040 mg/L and HAA5 annual average ≤0.030 mg/L for two consecutive years OR TTHM annual average ≤0.020 mg/L and HAA5 annual average ≤0.015 mg/L for one year.	One sample per treatment plant per three year monitoring cycle at distribution system location reflecting maximum residence time during month of warmest water temperature, with the three-year cycle beginning on January 1 following quarter in which system qualifies for reduced monitoring.

(iii) *Monitoring requirements for source water TOC.* In order to qualify for reduced monitoring for TTHM and HAA5 under paragraph (b)(1)(ii) of this section, subpart H systems not monitoring under the provisions of paragraph (d) of this section must take monthly TOC samples every 30 days at a location prior to any treatment, beginning April 1, 2008 or earlier, if specified by the State. In addition to meeting other criteria for reduced monitoring in paragraph (b)(1)(ii) of this section, the source water TOC running annual average must be ≤4.0 mg/L (based on the most recent four quarters of monitoring) on a continuing basis at each treatment plant to reduce or remain on reduced monitoring for TTHM and HAA5. Once qualified for reduced monitoring for TTHM and HAA5 under paragraph (b)(1)(ii) of this section, a system may reduce source water TOC monitoring to quarterly TOC samples taken every 90 days at a location prior to any treatment.

(iv) Systems on a reduced monitoring schedule may remain on that reduced schedule as long as the average of all samples taken in the year (for systems which must monitor quarterly) or the result of the sample (for systems which must monitor no more frequently than annually) is no more than 0.060 mg/L and 0.045 mg/L for TTHMs and HAA5, respectively. Systems that do not meet these levels must resume monitoring at the frequency identified in paragraph (b)(1)(i) of this section (minimum monitoring frequency column) in the quarter immediately following the monitoring period in which the system exceeds 0.060 mg/L or 0.045 mg/L for TTHMs and HAA5, respectively. For systems using only ground water not under the direct influence of surface water and serving fewer than 10,000 persons, if either the TTHM annual average is >0.080 mg/L or the HAA5 annual average is >0.060 mg/L, the system must go to the increased monitoring identified in paragraph (b)(1)(i) of this section (sample location column) in the quarter immediately following the monitoring period in which the system exceeds 0.080 mg/L or 0.060 mg/L for TTHMs or HAA5 respectively.

(v) Systems on increased monitoring may return to routine monitoring if, after at least one year of monitoring their TTHM annual average is ≤0.060 mg/L and their HAA5 annual average is ≤0.045 mg/L.

(vi) The State may return a system to routine monitoring at the State's discretion.

(2) *Chlorite.* Community and nontransient noncommunity water systems using chlorine dioxide, for disinfection or oxidation, must conduct monitoring for chlorite.

(i) *Routine monitoring.* (A) *Daily monitoring.* Systems must take daily samples at the entrance to the distribution system. For any daily sample that exceeds the chlorite MCL, the system must take additional samples in the distribution system the following day at the locations required by paragraph (b)(2)(ii) of this section, in addition to the sample required at the entrance to the distribution system.

(B) *Monthly monitoring.* Systems must take a three-sampleset each month in the distribution system. The system must take one sample at each of the following locations: near the first customer, at a location representative of average residence time, and at a location reflecting maximum residence time in the distribution system. Any additional routine sampling must be conducted in the same manner (as three-samplesets, at the specified locations). The system may use the results of additional monitoring conducted under paragraph (b)(2)(ii) of this section to meet the requirement for monitoring in this paragraph.

(ii) *Additional monitoring.* On each day following a routine sample monitoring result that exceeds the chlorite MCL at the entrance to the distribution system, the system is required to take three chlorite distribution system samples at the following locations: as close to the first customer as possible, in a location representative of average residence time, and as close to the end of the distribution system as possible (reflecting maximum residence time in the distribution system).

(iii) *Reduced monitoring.* (A) Chlorite monitoring at the entrance to the distribution system required by paragraph (b)(2)(i)(A) of this section may not be reduced.

(B) Chlorite monitoring in the distribution system required by paragraph (b)(2)(i)(B) of this section may be reduced to one three-sampleset per quarter after one year of monitoring where no individual chlorite sample taken in the distribution system under paragraph (b)(2)(i)(B) of this section has exceeded the chlorite MCL and the system has not been required to conduct monitoring under paragraph (b)(2)(ii) of this section. The system may remain on the reduced monitoring schedule until either any of the three individual chlorite samples taken quarterly in the distribution system under paragraph (b)(2)(i)(B) of this section exceeds the chlorite MCL or the system is required to conduct monitoring under paragraph (b)(2)(ii) of this section, at which time the system must revert to routine monitoring.

(3) *Bromate*—(i) *Routine monitoring.* Community and nontransient noncommunity systems using ozone, for disinfection or oxidation, must take one sample per month for each treatment plant in the system using ozone. Systems must take samples monthly at the entrance to the distribution system while the ozonation system is operating under normal conditions.

(ii) *Reduced monitoring.* (A) Until March 31, 2009, systems required to analyze for bromate may reduce monitoring from monthly to quarterly, if the system's average source water bromide concentration is less than 0.05 mg/L based on representative monthly bromide measurements for one year. The system may remain on reduced bromate monitoring until the running annual average source water bromide concentration, computed quarterly, is equal to or greater than 0.05 mg/L based on representative monthly measurements. If the running annual average source water bromide concentration is ≥0.05 mg/L, the system must resume routine monitoring required by paragraph (b)(3)(i) of this section in the following month.

(B) Beginning April 1, 2009, systems may no longer use the provisions of paragraph (b)(3)(ii)(A) of this section to qualify for reduced monitoring. A system required to analyze for bromate may reduce monitoring from monthly to quarterly, if the system's running annual average bromate concentration is ≤0.0025 mg/L based on monthly bromate measurements under paragraph (b)(3)(i) of this section for the most recent four quarters, with samples analyzed using Method 317.0 Revision 2.0, 326.0 or 321.8. If a system has qualified for reduced bromate monitoring under paragraph (b)(3)(ii)(A) of this section, that system may remain on reduced monitoring as long as the running annual average of quarterly bromate samples ≤0.0025 mg/L based on samples analyzed using Method 317.0 Revision 2.0, 326.0, or 321.8. If the running annual average bromate concentration is >0.0025 mg/L, the system must resume routine monitoring required by paragraph (b)(3)(i) of this section.

(c) *Monitoring requirements for disinfectant residuals*—(1) *Chlorine and chloramines*—(i) *Routine monitoring.* Until March 31, 2016, community and non-transient non-community water systems that use chlorine or chloramines must measure the residual disinfectant level in the distribution system at the same point in the distribution system and at the same time as total coliforms are sampled, as specified in §141.21. Beginning April 1, 2016, community and non-transient non-community water systems that use chlorine or chloramines must measure the residual disinfectant level in the distribution system at the same point in the distribution system and at the same time as total coliforms are sampled, as specified in §§141.854 through 141.858. Subpart H systems of this part may use the results of residual disinfectant concentration sampling conducted under §141.74(b)(6)(i) for unfiltered systems or §141.74(c)(3)(i) for systems which filter, in lieu of taking separate samples.

(ii) *Reduced monitoring.* Monitoring may not be reduced.

(2) *Chlorine dioxide*—(i) *Routine monitoring.* Community, nontransient noncommunity, and transient noncommunity water systems that use chlorine dioxide for disinfection or oxidation must take daily samples at the entrance to the distribution system. For any daily sample that exceeds the MRDL, the system must take samples in the distribution system the following day at the locations required by paragraph (c)(2)(ii) of this section, in addition to the sample required at the entrance to the distribution system.

(ii) *Additional monitoring.* On each day following a routine sample monitoring result that exceeds the MRDL, the system is required to take three chlorine dioxide distribution system samples. If chlorine dioxide or chloramines are used to maintain a disinfectant residual in the distribution system, or if chlorine is used to maintain a disinfectant residual in the distribution system and there are no disinfection addition points after the entrance to the distribution system (*i.e.*, no booster chlorination), the system must take three samples as close to the first customer as possible, at intervals of at least six hours. If chlorine is used to maintain a disinfectant residual in the distribution system and there are one or more disinfection addition points after the entrance to the distribution system (*i.e.*, booster chlorination), the system must take one sample at each of the following locations: as close to the first customer as possible, in a location representative of average residence time, and as close to the end of the distribution system as possible (reflecting maximum residence time in the distribution system).

(iii) *Reduced monitoring.* Chlorine dioxide monitoring may not be reduced.

(d) *Monitoring requirements for disinfection byproduct precursors (DBPP)*—(1) *Routine monitoring.* Subpart H systems which use conventional filtration treatment (as defined in §141.2) must monitor each treatment plant for TOC no later than the point of combined filter effluent turbidity monitoring and representative of the treated water. All systems required to monitor under this paragraph (d)(1) must also monitor for TOC in the source water prior to any treatment at the same time as monitoring for TOC in the treated water. These samples (source water and treated water) are referred to as paired samples. At the same time as the source water sample is taken, all systems must monitor for alkalinity in the source water prior to any treatment. Systems must take one paired sample and one source water alkalinity sample per month per plant at a time representative of normal operating conditions and influent water quality.

(2) *Reduced monitoring.* Subpart H systems with an average treated water TOC of less than 2.0 mg/L for two consecutive years, or less than 1.0 mg/L for one year, may reduce monitoring for both TOC and alkalinity to one paired sample and one source water alkalinity sample per plant per quarter. The system must revert to routine monitoring in the month following the quarter when the annual average treated water TOC ≥2.0 mg/L.

(e) *Bromide.* Systems required to analyze for bromate may reduce bromate monitoring from monthly to once per quarter, if the system demonstrates that the average source water bromide concentration is less than 0.05 mg/L based upon representative monthly measurements for one year. The system must continue bromide monitoring to remain on reduced bromate monitoring.

(f) *Monitoring plans.* Each system required to monitor under this subpart must develop and implement a monitoring plan. The system must maintain the plan and make it available for inspection by the State and the general public no later than 30 days following the applicable compliance dates in §141.130(b). All Subpart H systems serving more than 3300 people must submit a copy of the monitoring plan to the State no later than the date of the first report required under §141.134. The State may also require the plan to be submitted by any other system. After review, the State may require changes in any plan elements. The plan must include at least the following elements.

(1) Specific locations and schedules for collecting samples for any parameters included in this subpart.

(2) How the system will calculate compliance with MCLs, MRDLs, and treatment techniques.

(3) If approved for monitoring as a consecutive system, or if providing water to a consecutive system, under the provisions of §141.29, the sampling plan must reflect the entire distribution system.

[63 FR 69466, Dec. 16, 1998, as amended at 66 FR 3776, Jan. 16, 2001; 69 FR 38856, June 29, 2004; 71 FR 482, Jan. 4, 2006; 78 FR 10348, Feb. 13, 2013]

§141.133 Compliance requirements.

(a) *General requirements.* (1) Where compliance is based on a running annual average of monthly or quarterly samples or averages and the system fails to monitor for TTHM, HAA5, or bromate, this failure to monitor will be treated as a monitoring violation for the entire period covered by the annual average. Where compliance is based on a running annual average of monthly or quarterly samples or averages and the system failure to monitor makes it impossible to determine compliance with MRDLs for chlorine and chloramines, this failure to monitor will be treated as a monitoring violation for the entire period covered by the annual average.

(2) All samples taken and analyzed under the provisions of this subpart

must be included in determining compliance, even if that number is greater than the minimum required.

(3) If, during the first year of monitoring under §141.132, any individual quarter's average will cause the running annual average of that system to exceed the MCL for total trihalomethanes, haloacetic acids (five), or bromate; or the MRDL for chlorine or chloramine, the system is out of compliance at the end of that quarter.

(b) *Disinfection byproducts*—(1) *TTHMs and HAA5*. (i) For systems monitoring quarterly, compliance with MCLs in §141.64 must be based on a running annual arithmetic average, computed quarterly, of quarterly arithmetic averages of all samples collected by the system as prescribed by §141.132(b)(1).

(ii) For systems monitoring less frequently than quarterly, systems demonstrate MCL compliance if the average of samples taken that year under the provisions of §141.132(b)(1) does not exceed the MCLs in §141.64. If the average of these samples exceeds the MCL, the system must increase monitoring to once per quarter per treatment plant and such a system is not in violation of the MCL until it has completed one year of quarterly monitoring, unless the result of fewer than four quarters of monitoring will cause the running annual average to exceed the MCL, in which case the system is in violation at the end of that quarter. Systems required to increase monitoring frequency to quarterly monitoring must calculate compliance by including the sample which triggered the increased monitoring plus the following three quarters of monitoring.

(iii) If the running annual arithmetic average of quarterly averages covering any consecutive four-quarter period exceeds the MCL, the system is in violation of the MCL and must notify the public pursuant to §141.32 or §141.202, whichever is effective for your system, in addition to reporting to the State pursuant to §141.134.

(iv) If a PWS fails to complete four consecutive quarters of monitoring, compliance with the MCL for the last four-quarter compliance period must be based on an average of the available data.

(2) *Bromate*. Compliance must be based on a running annual arithmetic average, computed quarterly, of monthly samples (or, for months in which the system takes more than one sample, the average f all samples taken during the month) collected by the system as prescribed by §141.132(b)(3). If the average of samples covering any consecutive four-quarter period exceeds the MCL, the system is in violation of the MCL and must notify the public pursuant to subpart Q, in addition to reporting to the State pursuant to §141.134. If a PWS fails to complete 12 consecutive months' monitoring, compliance with the MCL for the last four-quarter compliance period must be based on an average of the available data.

(3) *Chlorite*. Compliance must be based on an arithmetic average of each three sample set taken in the distribution system as prescribed by §141.132(b)(2)(i)(B) and §141.132(b)(2)(ii). If the arithmetic average of any three sample set exceeds the MCL, the system is in violation of the MCL and must notify the public pursuant to subpart Q, in addition to reporting to the State pursuant to §141.134.

(c) *Disinfectant residuals*—(1) *Chlorine and chloramines*. (i) Compliance must be based on a running annual arithmetic average, computed quarterly, of monthly averages of all samples collected by the system under §141.132(c)(1). If the average covering any consecutive four-quarter period exceeds the MRDL, the system is in violation of the MRDL and must notify the public pursuant to subpart Q, in addition to reporting to the State pursuant to §141.134.

(ii) In cases where systems switch between the use of chlorine and chloramines for residual disinfection during the year, compliance must be determined by including together all monitoring results of both chlorine and chloramines in calculating compliance. Reports submitted pursuant to §141.134 must clearly indicate which residual disinfectant was analyzed for each sample.

(2) *Chlorine dioxide*. (i) *Acute violations*. Compliance must be based on consecutive daily samples collected by the system under §141.132(c)(2). If any

daily sample taken at the entrance to the distribution system exceeds the MRDL, and on the following day one (or more) of the three samples taken in the distribution system exceed the MRDL, the system is in violation of the MRDL and must take immediate corrective action to lower the level of chlorine dioxide below the MRDL and must notify the public pursuant to the procedures for acute health risks in subpart Q in addition to reporting to the State pursuant to §141.134. Failure to take samples in the distribution system the day following an exceedance of the chlorine dioxide MRDL at the entrance to the distribution system will also be considered an MRDL violation and the system must notify the public of the violation in accordance with the provisions for acute violations under subpart Q in addition to reporting to the State pursuant to §141.134.

(ii) *Nonacute violations.* Compliance must be based on consecutive daily samples collected by the system under §141.132(c)(2). If any two consecutive daily samples taken at the entrance to the distribution system exceed the MRDL and all distribution system samples taken are below the MRDL, the system is in violation of the MRDL and must take corrective action to lower the level of chlorine dioxide below the MRDL at the point of sampling and will notify the public pursuant to the procedures for nonacute health risks in subpart Q in addition to reporting to the State pursuant to §141.134. Failure to monitor at the entrance to the distribution system the day following an exceedance of the chlorine dioxide MRDL at the entrance to the distribution system is also an MRDL violation and the system must notify the public of the violation in accordance with the provisions for nonacute violations under §141.32(e)(78) in addition to reporting to the State pursuant to §141.134.

(d) *Disinfection byproduct precursors (DBPP).* Compliance must be determined as specified by §141.135(c). Systems may begin monitoring to determine whether Step 1 TOC removals can be met 12 months prior to the compliance date for the system. This monitoring is not required and failure to monitor during this period is not a violation. However, any system that does not monitor during this period, and then determines in the first 12 months after the compliance date that it is not able to meet the Step 1 requirements in §141.135(b)(2) and must therefore apply for alternate minimum TOC removal (Step 2) requirements, is not eligible for retroactive approval of alternate minimum TOC removal (Step 2) requirements as allowed pursuant to §141.135(b)(3) and is in violation. Systems may apply for alternate minimum TOC removal (Step 2) requirements any time after the compliance date. For systems required to meet Step 1 TOC removals, if the value calculated under §141.135(c)(1)(iv) is less than 1.00, the system is in violation of the treatment technique requirements and must notify the public pursuant to subpart Q of this part, in addition to reporting to the State pursuant to §141.134.

[63 FR 69466, Dec. 16, 1998, as amended at 65 FR 26022, May 4, 2000; 65 FR 40521, June 30, 2000; 66 FR 3777, Jan. 16, 2001; 69 FR 38856, June 29, 2004; 71 FR 482, Jan. 4, 2006]

§141.134 Reporting and recordkeeping requirements.

(a) Systems required to sample quarterly or more frequently must report to the State within 10 days after the end of each quarter in which samples were collected, notwithstanding the provisions of §141.31. Systems required to sample less frequently than quarterly must report to the State within 10 days after the end of each monitoring period in which samples were collected.

(b) *Disinfection byproducts.* Systems must report the information specified in the following table:

If you are a * * *	You must report * * *
(1) System monitoring for TTHMs and HAA5 under the requirements of §141.132(b) on a quarterly or more frequent basis.	(i) The number of samples taken during the last quarter. (ii) The location, date, and result of each sample taken during the last quarter. (iii) The arithmetic average of all samples taken in the last quarter. (iv) The annual arithmetic average of the quarterly arithmetic averages of this section for the last four quarters. (v) Whether, based on §141.133(b)(1), the MCL was violated.
(2) System monitoring for TTHMs and HAA5 under the requirements of §141.132(b) less frequently than quarterly (but as least annually).	(i) The number of samples taken during the last year. (ii) The location, date, and result of each sample taken during the last monitoring period. (iii) The arithmetic average of all samples taken over the last year. (iv) Whether, based on §141.133(b)(1), the MCL was violated.
(3) System monitoring for TTHMs and HAA5 under the requriements of §141.132(b) less frequently than annually.	(i) The location, date, and result of each sample taken (ii) Whether, based on §141.133(b)(1), the MCL was violated.
(4) System monitoring for chlorite under the requirements of §141.132(b).	(i) The number of entry point samples taken each month for the last 3 months. (ii) The location, date, and result of each sample (both entry point and distribution system) taken during the last quarter. (iii) For each month in the reporting period, the arithmetic average of all samples taken in each three samples set taken in the distribution system. (iv) Whether, based on §141.133(b)(3), the MCL was violated, in which month, and how many times it was violated each month.
(5) System monitoring for bromate under the requirements of §141.132(b).	(i)The number of samples taken during the last quarter. (ii)The location, date, and result of each sample taken during the last quarter. (iii) The arithmetic average of the monthly arithmetic averages of all samples taken in the last year. (iv) Whether, based on §141.133(b)(2), the MCL was violated.

[1] The State may choose to perform calculations and determine whether the MCL was exceeded, in lieu of having the system report that information

(c) *Disinfectants.* Systems must report the information specified in the following table:

If you are a * * *	You must report * * *
(1) System monitoring for chlorine or chloramines under the requirements of §141.132(c).	(i) The number of samples taken during each month of the last quarter. (ii) The month arithmetic average of all samples taken in each month for the last 12 months. (iii) The arithmetic average of the monthly averages for the last 12 months. (iv) Whether, based on §141.133(c)(1), the MRD was violated.
(2) System monitoring for chlorine dioxide under the requirements of §141.132(c).	(i) The dates, result, and locations of samples taken during the last quarter. (ii) Whether, based on §141.133(c)(2), the MRDL was violated. (iii) Whether the MRDL was exceeded in any two consecutive daily samples and whether the resulting violation was acuate or nonacute.

[1] The State may choose to perform calculations and determine whether the MRDL was exceeded, in lieu of having the system report that information.

(d) *Disinfection byproduct precursors and enhanced coagulation or enhanced softening.* Systems must report the information specified in the following table:

If you are a...	You must report...[1]
(1) System monitoring monthly or quarterly for TOC under the requirements of §141.132(d) and required to meet the enhanced coagulation or enhanced softening requirements in §141.135(b)(2) or (3).	(i) The number of paired (source water and treated water) samples taken during the last quarter. (ii) The location, date, and results of each paired sample and associated alkalinity taken during the last quarter. (iii) For each month in the reporting period that paired samples were taken, the arithmetic average of the percent reduction of TOC for each paired sample and the required TOC percent removal. (iv) Calculations for determining compliance with the TOC percent removal requirements, as provided in §141.135(c)(1). (v) Whether the system is in compliance with the enhanced coagulation or enhanced softening percent removal requirements in §141.135(b) for the last four quarters.
(2) System monitoring monthly or quarterly for TOC under the requirements of §141.132(d) and meeting one or more of the alternative compliance criteria in §141.135(a)(2) or (3).	(i) The alternative compliance criterion that the system is using. (ii) The number of paired samples taken during the last quarter. (iii) The location, date, and result of each paired sample and associated alkalinity taken during the last quarter. (iv) The running annual arithmetic average based on monthly averages (or quarterly samples) of source water TOC for systems meeting a criterion in §§141.135(a)(2)(i) or (iii) or of treated water TOC for systems meeting the criterion in §141.135(a)(2)(ii). (v) The running annual arithmetic average based on monthly averages (or quarterly samples) of source water SUVA for systems meeting the criterion in §141.135(a)(2)(v) or of treated water SUVA for systems meeting the criterion in §141.135(a)(2)(vi). (vi) The running annual average of source water alkalinity for systems meeting the criterion in §141.135(a)(2)(iii) and of treated water alkalinity for systems meeting the criterion in §141.135(a)(3)(i). (vii) The running annual average for both TTHM and HAA5 for systems meeting the criterion in §141.135(a)(2)(iii) or (iv). (viii) The running annual average of the amount of magnesium hardness removal (as $CaCO_3$, in mg/L) for systems meeting the criterion in §141.135(a)(3)(ii). (ix) Whether the system is in compliance with the particular alternative compliance criterion in §141.135(a)(2) or (3).

[1] The State may choose to perform calculations and determine whether the treatment technique was met, in lieu of having the system report that information.

[63 FR 69466, Dec. 16, 1998, as amended at 66 FR 3778, Jan. 16, 2001; 66 FR 9903, Feb. 12, 2001]

§141.135 Treatment technique for control of disinfection byproduct (DBP) precursors.

(a) *Applicability.* (1) Subpart H systems using conventional filtration treatment (as defined in §141.2) must operate with enhanced coagulation or enhanced softening to achieve the TOC percent removal levels specified in paragraph (b) of this section unless the system meets at least one of the alternative compliance criteria listed in paragraph (a)(2) or (a)(3) of this section.

(2) *Alternative compliance criteria for enhanced coagulation and enhanced softening systems.* Subpart H systems using conventional filtration treatment may use the alternative compliance criteria in paragraphs (a)(2)(i) through (vi) of this section to comply with this section in lieu of complying with paragraph (b) of this section. Systems must still comply with monitoring requirements in §141.132(d).

(i) The system's source water TOC level, measured according to §141.131(d)(3), is less than 2.0 mg/L, calculated quarterly as a running annual average.

(ii) The system's treated water TOC level, measured according to §141.131(d)(3), is less than 2.0 mg/L, calculated quarterly as a running annual average.

(iii) The system's source water TOC level, measured according to §141.131(d)(3), is less than 4.0 mg/L, calculated quarterly as a running annual average; the source water alkalinity, measured according to §141.131(d)(1), is greater than 60 mg/L (as $CaCO_3$), calculated quarterly as a running annual average; and either the TTHM and HAA5 running annual averages are no greater than 0.040 mg/L and 0.030 mg/L, respectively; or prior to the effective date for compliance in §141.130(b), the system has made a clear and irrevocable financial commitment not later than the effective date for compliance in §141.130(b) to use of technologies that will limit the levels of TTHMs and HAA5 to no more than 0.040 mg/L and 0.030 mg/L, respectively. Systems must submit evidence of a clear and irrevocable financial commitment, in addition to a schedule containing milestones and periodic progress reports for installation and operation of appropriate technologies, to the State for approval not later than the effective date for compliance in §141.130(b). These technologies must be installed and operating not later than June 30, 2005. Failure to install and operate these technologies by the date in the approved schedule will constitute a violation of National Primary Drinking Water Regulations.

(iv) The TTHM and HAA5 running annual averages are no greater than 0.040 mg/L and 0.030 mg/L, respectively, and the system uses only chlorine for primary disinfection and maintenance of a residual in the distribution system.

(v) The system's source water SUVA, prior to any treatment and measured monthly according to §141.131(d)(4), is less than or equal to 2.0 L/mg-m, calculated quarterly as a running annual average.

(vi) The system's finished water SUVA, measured monthly according to §141.131(d)(4), is less than or equal to 2.0 L/mg-m, calculated quarterly as a running annual average.

(3) *Additional alternative compliance criteria for softening systems.* Systems practicing enhanced softening that cannot achieve the TOC removals required by paragraph (b)(2) of this section may use the alternative compliance criteria in paragraphs (a)(3)(i) and (ii) of this section in lieu of complying with paragraph (b) of this section. Systems must still comply with monitoring requirements in §141.132(d).

(i) Softening that results in lowering the treated water alkalinity to less than 60 mg/L (as $CaCO_3$), measured monthly according to §141.131(d)(1) and calculated quarterly as a running annual average.

(ii) Softening that results in removing at least 10 mg/L of magnesium hardness (as $CaCO_3$), measured monthly according to §141.131(d)(6) and calculated quarterly as a running annual average.

(b) *Enhanced coagulation and enhanced softening performance requirements.* (1) Systems must achieve the percent reduction of TOC specified in paragraph (b)(2) of this section between the source water and the combined filter effluent, unless the State approves a system's request for alternate minimum TOC removal (Step 2) requirements under paragraph (b)(3) of this section.

(2) Required Step 1 TOC reductions, indicated in the following table, are based upon specified source water parameters measured in accordance with §141.131(d). Systems practicing softening are required to meet the Step 1 TOC reductions in the far-right column (Source water alkalinity >120 mg/L) for the specified source water TOC:

STEP 1 REQUIRED REMOVAL OF TOC BY ENHANCED COAGULATION AND ENHANCED SOFTENING FOR SUBPART H SYSTEMS USING CONVENTIONAL TREATMENT [1] [2]

Source-water TOC, mg/L	Source-water alkalinity, mg/L as $CaCO_3$ (in precentages)		
	0–60	>60–120	>120[3]
>2.0–4.0	35.0	25.0	15.0
>4.0–8.0	45.0	35.0	25.0
>8.0.	50.0	40.0	30.0

[1] Systems meeting at least one of the conditions in paragraph (a)(2)(i)–(vi) of this section are not required to operate with enhanced coagulation.

[2] Softening system meeting one of the alternative compliance criteria in paragraph (a)(3) of this section are not required to operate with enhanced softening.

[3] System practicing softening must meet the TOC removal requirements in this column.

(3) Subpart H conventional treatment systems that cannot achieve the Step 1 TOC removals required by paragraph (b)(2) of this section due to water quality parameters or operational constraints must apply to the State, within three months of failure to achieve the TOC removals required by paragraph (b)(2) of this section, for approval of alternative minimum TOC (Step 2) removal requirements submitted by the system. If the State approves the alternative minimum TOC removal (Step 2) requirements, the State may make those requirements retroactive for the purposes of determining compliance. Until the State approves the alternate minimum TOC removal (Step 2) requirements, the system must meet the Step 1 TOC removals contained in paragraph (b)(2) of this section.

(4) *Alternate minimum TOC removal (Step 2) requirements.* Applications made to the State by enhanced coagulation systems for approval of alternate minimum TOC removal (Step 2) requirements under paragraph (b)(3) of this section must include, at a minimum, results of bench- or pilot-scale testing conducted under paragraph (b)(4)(i) of this section. The submitted bench- or pilot-scale testing must be used to determine the alternate enhanced coagulation level.

(i) *Alternate enhanced coagulation level is defined as* coagulation at a coagulant dose and pH as determined by the method described in paragraphs (b)(4)(i) through (v) of this section such that an incremental addition of 10 mg/L of alum (or equivalent amount of ferric salt) results in a TOC removal of ≤0.3 mg/L. The percent removal of TOC at this point on the "TOC removal versus coagulant dose" curve is then defined as the minimum TOC removal required for the system. Once approved by the State, this minimum requirement supersedes the minimum TOC removal required by the table in paragraph (b)(2) of this section. This requirement will be effective until such time as the State approves a new value based on the results of a new bench- and pilot-scale test. Failure to achieve State-set alternative minimum TOC removal levels is a violation of National Primary Drinking Water Regulations.

(ii) Bench- or pilot-scale testing of enhanced coagulation must be conducted by using representative water samples and adding 10 mg/L increments of alum (or equivalent amounts of ferric salt) until the pH is reduced to a level less than or equal to the enhanced coagulation Step 2 target pH shown in the following table:

ENHANCED COAGULATION STEP 2 TARGET PH

Alkalinity (mg/L as $CaCO_3$)	Target pH
0–60	5.5
>60–120	6.3
>120–240	7.0
>240	7.5

(iii) For waters with alkalinities of less than 60 mg/L for which addition of small amounts of alum or equivalent addition of iron coagulant drives the pH below 5.5 before significant TOC removal occurs, the system must add necessary chemicals to maintain the pH between 5.3 and 5.7 in samples until the TOC removal of 0.3 mg/L per 10 mg/L alum added (or equivalant addition of iron coagulant) is reached.

(iv) The system may operate at any coagulant dose or pH necessary (consistent with other NPDWRs) to achieve the minimum TOC percent removal approved under paragraph (b)(3) of this section.

(v) If the TOC removal is consistently less than 0.3 mg/L of TOC per 10 mg/L of incremental alum dose at all dosages of alum (or equivalant addition of iron coagulant), the water is deemed to contain TOC not amenable to enhanced coagulation. The system may then apply to the State for a waiver of enhanced coagulation requirements.

(c) *Compliance calculations.* (1) Subpart H systems other than those identified in paragraph (a)(2) or (a)(3) of this section must comply with requirements contained in paragraph (b)(2) or (b)(3) of this section. Systems must calculate compliance quarterly, beginning after the system has collected 12 months of data, by determining an annual average using the following method:

(i) Determine actual monthly TOC percent removal, equal to:

(1¥(treated water TOC/source water TOC)) × 100

(ii) Determine the required monthly TOC percent removal (from either the table in paragraph (b)(2) of this section or from paragraph (b)(3) of this section).

(iii) Divide the value in paragraph (c)(1)(i) of this section by the value in paragraph (c)(1)(ii) of this section.

(iv) Add together the results of paragraph (c)(1)(iii) of this section for the last 12 months and divide by 12.

(v) If the value calculated in paragraph (c)(1)(iv) of this section is less than 1.00, the system is not in compliance with the TOC percent removal requirements.

(2) Systems may use the provisions in paragraphs (c)(2)(i) through (v) of this section in lieu of the calculations in paragraph (c)(1)(i) through (v) of this section to determine compliance with TOC percent removal requirements.

(i) In any month that the system's treated or source water TOC level, measured according to §141.131(d)(3), is less than 2.0 mg/L, the system may assign a monthly value of 1.0 (in lieu of the value calculated in paragraph (c)(1)(iii) of this section) when calculating compliance under the provisions of paragraph (c)(1) of this section.

(ii) In any month that a system practicing softening removes at least 10 mg/L of magnesium hardness (as $CaCO_3$), the system may assign a monthly value of 1.0 (in lieu of the value calculated in paragraph (c)(1)(iii) of this section) when calculating compliance under the provisions of paragraph (c)(1) of this section.

(iii) In any month that the system's source water SUVA, prior to any treatment and measured according to §141.131(d)(4), is ≤2.0 L/mg-m, the system may assign a monthly value of 1.0 (in lieu of the value calculated in paragraph (c)(1)(iii) of this section) when calculating compliance under the provisions of paragraph (c)(1) of this section.

(iv) In any month that the system's finished water SUVA, measured according to §141.131(d)(4), is ≤2.0 L/mg-m, the system may assign a monthly value of 1.0 (in lieu of the value calculated in paragraph (c)(1)(iii) of this section) when calculating compliance under the provisions of paragraph (c)(1) of this section.

(v) In any month that a system practicing enhanced softening lowers alkalinity below 60 mg/L (as $CaCO_3$), the system may assign a monthly value of 1.0 (in lieu of the value calculated in paragraph (c)(1)(iii) of this section) when calculating compliance under the provisions of paragraph (c)(1) of this section.

(3) Subpart H systems using conventional treatment may also comply with the requirements of this section by meeting the criteria in paragraph (a)(2) or (3) of this section.

(d) *Treatment technique requirements for DBP precursors.* The Administrator identifies the following as treatment techniques to control the level of disinfection byproduct precursors in drinking water treatment and distribution systems: For Subpart H systems using conventional treatment, enhanced coagulation or enhanced softening.

[63 FR 69466, Dec. 16, 1998, as amended at 66 FR 3779, Jan. 16, 2001; 71 FR 482, Jan. 4, 2006]

Subparts M–N [Reserved]

Subpart O—Consumer Confidence Reports

SOURCE: 63 FR 44526, Aug. 19, 1998, unless otherwise noted.

§141.151 Purpose and applicability of this subpart.

(a) This subpart establishes the minimum requirements for the content of annual reports that community water systems must deliver to their customers. These reports must contain information on the quality of the water delivered by the systems and characterize the risks (if any) from exposure to contaminants detected in the drinking water in an accurate and understandable manner.

(b) Notwithstanding the provisions of §141.3, this subpart applies only to community water systems.

(c) For the purpose of this subpart, *customers* are defined as billing units or service connections to which water is delivered by a community water system.

(d) For the purpose of this subpart, detected means: at or above the levels prescribed by §141.23(a)(4) for inorganic contaminants, at or above the levels prescribed by §141.24(f)(7) for the contaminants listed in §141.61(a), at or above the levels prescribed by §141.24(h)(18) for the contaminants listed in §141.61(c), at or above the levels prescribed by §141.131(b)(2)(iv) for the contaminants or contaminant groups listed in §141.64, and at or above the levels prescribed by §141.25(c) for radioactive contaminants.

(e) A State that has primary enforcement responsibility may adopt by rule, after notice and comment, alternative requirements for the form and content of the reports. The alternative requirements must provide the same type and amount of information as required by §§141.153 and 141.154, and must be designed to achieve an equivalent level of public information and education as would be achieved under this subpart.

(f) For purpose of §§141.154 and 141.155 of this subpart, the term ''primacy agency'' refers to the State or tribal government entity that has jurisdiction over, and primary enforcement responsibility for, public water systems, even if that government does not have interim or final primary enforcement responsibility for this rule. Where the State or tribe does not have primary enforcement responsibility for public water systems, the term ''primacy agency'' refers to the appropriate EPA regional office.

[63 FR 44526, Aug. 19, 1998, as amended at 71 FR 483, Jan. 4, 2006]

§141.152 Effective dates.

(a) The regulations in this subpart shall take effect on September 18, 1998.

(b) Each existing community water system must deliver its first report by October 19, 1999, its second report by July 1, 2000, and subsequent reports by July 1 annually thereafter. The first report must contain data collected during, or prior to, calendar year 1998 as prescribed in §141.153(d)(3). Each report thereafter must contain data collected during, or prior to, the previous calendar year.

(c) A new community water system must deliver its first report by July 1 of the year after its first full calendar year in operation and annually thereafter.

(d) A community water system that sells water to another community water system must deliver the applicable information required in §141.153 to the buyer system:

(1) No later than April 19, 1999, by April 1, 2000, and by April 1 annually thereafter or

(2) On a date mutually agreed upon by the seller and the purchaser, and specifically included in a contract between the parties.

§141.153 Content of the reports.

(a) Each community water system must provide to its customers an annual report that contains the information specified in this section and §141.154.

(b) Information on the source of the water delivered:

(1) Each report must identify the source(s) of the water delivered by the community water system by providing information on:

(i) The type of the water: e.g., surface water, ground water; and

(ii) The commonly used name (if any) and location of the body (or bodies) of water.

(2) If a source water assessment has been completed, the report must notify consumers of the availability of this information and the means to obtain it. In addition, systems are encouraged to highlight in the report significant sources of contamination in the source water area if they have readily available information. Where a system has received a source water assessment from the primacy agency, the report must include a brief summary of the system's susceptibility to potential sources of contamination, using language provided by the primacy agency or written by the operator.

(c) *Definitions.* (1) Each report must include the following definitions:

(i) *Maximum Contaminant Level Goal or MCLG:* The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.

(ii) *Maximum Contaminant Level or MCL:* The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.

(2) A report for a community water system operating under a variance or an exemption issued under §1415 or 1416 of SDWA must include the following definition: *Variances and Exemptions:* State or EPA permission not to meet an MCL or a treatment technique under certain conditions.

(3) A report that contains data on contaminants that EPA regulates using any of the following terms must include the applicable definitions:

(i) *Treatment Technique:* A required process intended to reduce the level of a contaminant in drinking water.

(ii) *Action Level:* The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

(iii) *Maximum residual disinfectant level goal or MRDLG:* The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.

(iv) *Maximum residual disinfectant level or MRDL:* The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

(4) A report that contains information regarding a Level 1 or Level 2 Assessment required under Subpart Y of this part must include the applicable definitions:

(i) *Level 1 Assessment:* A Level 1 assessment is a study of the water system to identify potential problems and determine (if possible) why total coliform bacteria have been found in our water system.

(ii) *Level 2 Assessment:* A Level 2 assessment is a very detailed study of the water system to identify potential problems and determine (if possible) why an *E. coli* MCL violation has occurred and/or why total coliform bacteria have been found in our water system on multiple occasions.

(d) Information on detected contaminants.

(1) This sub-section specifies the requirements for information to be included in each report for contaminants subject to mandatory monitoring (except *Cryptosporidium*). It applies to:

(i) Contaminants subject to a MCL, action level, maximum residual disinfectant level, or treatment technique (regulated contaminants).

(ii) Contaminants for which monitoring is required by §141.40 (unregulated contaminants); and

(iii) Disinfection by-products or microbial contaminants for which monitoring is required by §§141.142 and 141.143, except as provided under paragraph (e)(1) of this section, and which are detected in the finished water.

(2) The data relating to these contaminants must be displayed in one table or in several adjacent tables. Any additional monitoring results which a community water system chooses to include in its report must be displayed separately.

(3) The data must be derived from data collected to comply with EPA and State monitoring and analytical requirements during calendar year 1998 for the first report and subsequent calendar years thereafter except that:

(i) Where a system is allowed to monitor for regulated contaminants less often than once a year, the table(s) must include the date and results of the most recent sampling and the report must include a brief statement indicating that the data presented in the report are from the most recent testing done in accordance with the regulations. No data older than 5 years need be included.

(ii) Results of monitoring in compliance with §§141.142 and 141.143 need only be included for 5 years from the date of last sample or until any of the detected contaminants becomes regulated and subject to routine monitoring requirements, whichever comes first.

(4) For detected regulated contaminants (listed in appendix A to this subpart), the table(s) must contain:

(i) The MCL for that contaminant expressed as a number equal to or greater than 1.0 (as provided in appendix A to this subpart);

(ii) The MCLG for that contaminant expressed in the same units as the MCL;

(iii) If there is no MCL for a detected contaminant, the table must indicate that there is a treatment technique, or specify the action level, applicable to that contaminant, and the report must include the definitions for treatment technique and/or action level, as appropriate, specified in paragraph (c)(3) of this section;

(iv) For contaminants subject to an MCL, except turbidity, total coliform, fecal coliform and *E. coli,* the highest contaminant level used to determine compliance with an NPDWR and the range of detected levels, as follows:

(A) When compliance with the MCL is determined annually or less frequently: The highest detected level at any sampling point and the range of detected levels expressed in the same units as the MCL.

(B) When compliance with the MCL is determined by calculating a running annual average of all samples taken at a monitoring location: the highest average of any of the monitoring locations and the range of all monitoring locations expressed in the same units as the MCL. For the MCLs for TTHM and HAA5 in §141.64(b)(2), systems must include the highest locational running annual average for TTHM and HAA5 and the range of individual sample results for all monitoring locations expressed in the same units as the MCL. If more than one location exceeds the TTHM or HAA5 MCL, the system must include the locational running annual averages for all locations that exceed the MCL.

(C) When compliance with the MCL is determined on a system-wide basis by calculating a running annual average of all samples at all monitoring locations: the average and range of detection expressed in the same units as the MCL. The system is required to include individual sample results for the IDSE conducted under subpart U of this part when determining the range of TTHM and HAA5 results to be reported in the annual consumer confidence report for the calendar year that the IDSE samples were taken.

NOTE TO PARAGRAPH (d)(4)(iv): When rounding of results to determine compliance with the MCL is allowed by the regulations, rounding should be done prior to multiplying the results by the factor listed in appendix A of this subpart.

(v) For turbidity.

(A) When it is reported pursuant to §141.13: The highest average monthly value.

(B) When it is reported pursuant to the requirements of §141.71: the highest monthly value. The report should include an explanation of the reasons for measuring turbidity.

(C) When it is reported pursuant to §141.73 or §141.173 or §141.551: the highest single measurement and the lowest monthly percentage of samples meeting the turbidity limits specified in §141.73 or §141.173, or §141.551 for the filtration technology being used. The report should include an explanation of the reasons for measuring turbidity;

(vi) For lead and copper: the 90th percentile value of the most recent round of sampling and the number of sampling sites exceeding the action level;

(vii) For total coliform analytical results until March 31, 2016:

(A) The highest monthly number of positive samples for systems collecting fewer than 40 samples per month; or

(B) The highest monthly percentage of positive samples for systems collecting at least 40 samples per month;

(viii) For fecal coliform and *E. coli* until March 31, 2016: The total number of positive samples;

(ix) The likely source(s) of detected contaminants to the best of the operator's knowledge. Specific information regarding contaminants may be available in sanitary surveys and source water assessments, and should be used when available to the operator. If the operator lacks specific information on the likely source, the report must include one or more of the typical sources for that contaminant listed in appendix A to this subpart that is most applicable to the system.

(x) For *E. coli* analytical results under subpart Y: The total number of positive samples.

(5) If a community water system distributes water to its customers from multiple hydraulically independent distribution systems that are fed by different raw water sources, the table should contain a separate column for each service area and the report should identify each separate distribution system. Alternatively, systems could produce separate reports tailored to include data for each service area.

(6) The table(s) must clearly identify any data indicating violations of MCLs, MRDLs, or treatment techniques, and the report must contain a clear and readily understandable explanation of the violation including: the length of the violation, the potential adverse health effects, and actions taken by the system to address the violation. To describe the potential health effects, the system must use the relevant language of appendix A to this subpart.

(7) For detected unregulated contaminants for which monitoring is required (except *Cryptosporidium*), the table(s) must contain the average and range at which the contaminant was detected. The report may include a brief explanation of the reasons for monitoring for unregulated contaminants.

(e) Information on *Cryptosporidium,* radon, and other contaminants:

(1) If the system has performed any monitoring for *Cryptosporidium,* including monitoring performed to satisfy the requirements of §141.143, which indicates that *Cryptosporidium* may be present in the source water or the finished water, the report must include:

(i) A summary of the results of the monitoring; and

(ii) An explanation of the significance of the results.

(2) If the system has performed any monitoring for radon which indicates that radon may be present in the finished water, the report must include:

(i) The results of the monitoring; and

(ii) An explanation of the significance of the results.

(3) If the system has performed additional monitoring which indicates the presence of other contaminants in the finished water, EPA strongly encourages systems to report any results which may indicate a health concern. To determine if results may indicate a health concern, EPA recommends that systems find out if EPA has proposed an NPDWR or issued a health advisory for that contaminant by calling the Safe Drinking Water Hotline (800–426–4791). EPA considers detects above a proposed MCL or health advisory level to indicate possible health concerns. For such contaminants, EPA recommends that the report include:

(i) The results of the monitoring; and

(ii) An explanation of the significance of the results noting the existence of a health advisory or a proposed regulation.

(f) Compliance with NPDWR. In addition to the requirements of §141.153(d)(6), the report must note any violation that occurred during the year covered by the report of a requirement listed below, and include a clear and readily understandable explanation of the violation, any potential adverse health effects, and the steps the system has taken to correct the violation.

(1) Monitoring and reporting of compliance data;

(2) Filtration and disinfection prescribed by subpart H of this part. For systems which have failed to install adequate filtration or disinfection equipment or processes, or have had a failure of such equipment or processes which constitutes a violation, the report must include the following language as part of the explanation of potential adverse health effects: Inadequately treated water may contain disease-causing organisms. These organisms include bacteria, viruses, and parasites which can cause symptoms such as nausea, cramps, diarrhea, and associated headaches.

(3) Lead and copper control requirements prescribed by subpart I of this part. For systems that fail to take one or more actions prescribed by §§141.80(d), 141.81, 141.82, 141.83 or 141.84, the report must include the applicable language of appendix A to this subpart for lead, copper, or both.

(4) Treatment techniques for Acrylamide and Epichlorohydrin prescribed by subpart K of this part. For systems that violate the requirements of subpart K of this part, the report must include the relevant language from appendix A to this subpart.

(5) Recordkeeping of compliance data.

(6) Special monitoring requirements prescribed by §§141.40 and 141.41; and

(7) Violation of the terms of a variance, an exemption, or an administrative or judicial order.

(g) Variances and Exemptions. If a system is operating under the terms of a variance or an exemption issued under §1415 or 1416 of SDWA, the report must contain:

(1) An explanation of the reasons for the variance or exemption;

(2) The date on which the variance or exemption was issued;

(3) A brief status report on the steps the system is taking to install treatment, find alternative sources of water, or otherwise comply with the terms and schedules of the variance or exemption; and

(4) A notice of any opportunity for public input in the review, or renewal, of the variance or exemption.

(h) Additional information:

(1) The report must contain a brief explanation regarding contaminants which may reasonably be expected to be found in drinking water including bottled water. This explanation may include the language of paragraphs (h)(1) (i) through (iii) or systems may use their own comparable language. The report also must include the language of paragraph (h)(1)(iv) of this section.

(i) The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally-occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

(ii) Contaminants that may be present in source water include:

(A) *Microbial contaminants,* such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.

(B) *Inorganic contaminants,* such as salts and metals, which can be naturally-occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.

(C) *Pesticides and herbicides,* which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses.

(D) *Organic chemical contaminants,* including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, and septic systems.

(E) *Radioactive contaminants,* which can be naturally-occurring or be the result of oil and gas production and mining activities.

(iii) In order to ensure that tap water is safe to drink, EPA prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. FDA regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

(iv) Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline (800–426–4791).

(2) The report must include the telephone number of the owner, operator, or designee of the community water system as a source of additional information concerning the report.

(3) In communities with a large proportion of non-English speaking residents, as determined by the Primacy Agency, the report must contain information in the appropriate language(s) regarding the importance of the report or contain a telephone number or address where such residents may contact the system to obtain a translated copy of the report or assistance in the appropriate language.

(4) The report must include information (e.g., time and place of regularly scheduled board meetings) about opportunities for public participation in decisions that may affect the quality of the water.

(5) The systems may include such additional information as they deem necessary for public education consistent with, and not detracting from, the purpose of the report.

(6) *Systems required to comply with subpart S.* (i) Any ground water system that receives notice from the State of a significant deficiency or notice from a laboratory of a fecal indicator-positive ground water source sample that is not

invalidated by the State under §141.402(d) must inform its customers of any significant deficiency that is uncorrected at the time of the next report or of any fecal indicator-positive ground water source sample in the next report. The system must continue to inform the public annually until the State determines that particular significant deficiency is corrected or the fecal contamination in the ground water source is addressed under §141.403(a). Each report must include the following elements.

(A) The nature of the particular significant deficiency or the source of the fecal contamination (if the source is known) and the date the significant deficiency was identified by the State or the dates of the fecal indicator-positive ground water source samples;

(B) If the fecal contamination in the ground water source has been addressed under §141.403(a) and the date of such action;

(C) For each significant deficiency or fecal contamination in the ground water source that has not been addressed under §141.403(a), the State-approved plan and schedule for correction, including interim measures, progress to date, and any interim measures completed; and

(D) If the system receives notice of a fecal indicator-positive ground water source sample that is not invalidated by the State under §141.402(d), the potential health effects using the health effects language of Appendix A of subpart O.

(ii) If directed by the State, a system with significant deficiencies that have been corrected before the next report is issued must inform its customers of the significant deficiency, how the deficiency was corrected, and the date of correction under paragraph (h)(6)(i) of this section.

(7) *Systems required to comply with subpart Y.* (i) Any system required to comply with the Level 1 assessment requirement or a Level 2 assessment requirement that is not due to an *E. coli* MCL violation must include in the report the text found in paragraph (h)(7)(i)(A) and paragraphs (h)(7)(i)(B) and (C) of this section as appropriate, filling in the blanks accordingly and the text found in paragraphs (h)(7)(i)(D)(*1*) and (*2*) of this section if appropriate.

(A) Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially harmful, waterborne pathogens may be present or that a potential pathway exists through which contamination may enter the drinking water distribution system. We found coliforms indicating the need to look for potential problems in water treatment or distribution. When this occurs, we are required to conduct assessment(s) to identify problems and to correct any problems that were found during these assessments.

(B) During the past year we were required to conduct [INSERT NUMBER OF LEVEL 1ASSESSMENTS] Level 1 assessment(s). [INSERT NUMBER OF LEVEL 1 ASSESSMENTS] Level 1 assessment(s) were completed. In addition, we were required to take [INSERT NUMBER OF CORRECTIVE ACTIONS] corrective actions and we completed [INSERT NUMBER OF CORRECTIVE ACTIONS] of these actions.

(C) During the past year [INSERT NUMBER OF LEVEL 2 ASSESSMENTS] Level 2 assessments were required to be completed for our water system. [INSERT NUMBER OF LEVEL 2 ASSESSMENTS] Level 2 assessments were completed. In addition, we were required to take [INSERT NUMBER OF CORRECTIVE ACTIONS] corrective actions and we completed [INSERT NUMBER OF CORRECTIVE ACTIONS] of these actions.

(D) Any system that has failed to complete all the required assessments or correct all identified sanitary defects, is in violation of the treatment technique requirement and must also include one or both of the following statements, as appropriate:

(*1*) During the past year we failed to conduct all of the required assessment(s).

(*2*) During the past year we failed to correct all identified defects that were found during the assessment.

(ii) Any system required to conduct a Level 2 assessment due to an *E. coli* MCL violation must include in the report the text found in paragraphs (h)(7)(ii)(A) and (B) of this section, filling in the blanks accordingly and the text found in paragraphs (h)(7)(ii)(C)(1) and (2) of this section, if appropriate.

(A) *E. coli* are bacteria whose presence indicates that the water may be contaminated with human or animal wastes. Human pathogens in these wastes can cause short-term effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a greater health risk for infants, young children, the elderly, and people with severely compromised immune systems. We found *E. coli* bacteria, indicating the need to look for potential problems in water treatment or distribution. When this occurs, we are required to conduct assessment(s) to identify problems and to correct any problems that were found during these assessments.

(B) We were required to complete a Level 2 assessment because we found *E. coli* in our water system. In addition, we were required to take [INSERT NUMBER OF CORRECTIVE ACTIONS] corrective actions and we completed [INSERT NUMBER OF CORRECTIVE ACTIONS] of these actions.

(C) Any system that has failed to complete the required assessment or correct all identified sanitary defects, is in violation of the treatment technique requirement and must also include one or both of the following statements, as appropriate:

(*1*) We failed to conduct the required assessment.

(*2*) We failed to correct all sanitary defects that were identified during the assessment that we conducted.

(iii) If a system detects *E. coli* and has violated the *E. coli MCL,* in addition to completing the table as required in paragraph (d)(4) of this section, the system must include one or more of the following statements to describe any noncompliance, as applicable:

(A) We had an *E. coli*-positive repeat sample following a total coliform-positive routine sample.

(B) We had a total coliform-positive repeat sample following an *E. coli*-positive routine sample.

(C) We failed to take all required repeat samples following an *E. coli*-positive routine sample.

(D) We failed to test for *E. coli* when any repeat sample tests positive for total coliform.

(iv) If a system detects *E. coli* and has not violated the *E. coli MCL,* in addition to completing the table as required in paragraph (d)(4) of this section, the system may include a statement that explains that although they have detected *E. coli,* they are not in violation of the *E. coli* MCL.

[63 FR 44526, Aug. 19, 1998, as amended at 63 FR 69516, Dec. 16, 1998; 64 FR 34733, June 29, 1999; 65 FR 26022, May 4, 2000; 67 FR 1836, Jan. 14, 2002; 71 FR 483, Jan. 4, 2006; 71 FR 65651, Nov. 8, 2006; 78 FR 10348, Feb. 13, 2013]

§141.154 Required additional health information.

(a) All reports must prominently display the following language: Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the Safe Drinking Water Hotline (800–426–4791).

(b) Ending in the report due by July 1, 2001, a system which detects arsenic at levels above 0.025 mg/L, but below the 0.05 mg/L, and beginning in the report due by July 1, 2002, a system that detects arsenic above 0.005 mg/L and up to and including 0.010 mg/L:

(1) Must include in its report a short informational statement about arsenic, using language such as: While your drinking water meets EPA's standard for arsenic, it does contain low levels of arsenic. EPA's standard balances the current understanding of arsenic's possible health effects against the costs of removing arsenic from drinking water. EPA continues to research the health effects of low levels of arsenic, which is a mineral known to cause cancer in humans at high concentrations and is

linked to other health effects such as skin damage and circulatory problems.

(2) May write its own educational statement, but only in consultation with the Primacy Agency.

(c) A system which detects nitrate at levels above 5 mg/l, but below the MCL:

(1) Must include a short informational statement about the impacts of nitrate on children using language such as: Nitrate in drinking water at levels above 10 ppm is a health risk for infants of less than six months of age. High nitrate levels in drinking water can cause blue baby syndrome. Nitrate levels may rise quickly for short periods of time because of rainfall or agricultural activity. If you are caring for an infant you should ask advice from your health care provider.

(2) May write its own educational statement, but only in consultation with the Primacy Agency.

(d) Every report must include the following lead-specificinformation:

(1) A short informational statement about lead in drinking water and its effects on children. The statement must include the following information:

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. [NAME OF UTILITY] is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at *http://www.epa.gov/safewater/lead*.

(2) A system may write its own educational statement, but only in consultation with the State.

(e) Community water systems that detect TTHM above 0.080 mg/l, but below the MCL in §141.12, as an annual average, monitored and calculated under the provisions of §141.30, must include health effects language for TTHMs prescribed by appendix A.

(f) Beginning in the report due by July 1, 2002, and ending January 22, 2006, a community water system that detects arsenic above 0.010 mg/L and up to and including 0.05 mg/L must include the arsenic health effects language prescribed by appendix A to subpart O of this part.

[63 FR 44526, Aug. 19, 1998, as amended at 63 FR 69475, Dec. 16, 1998; 64 FR 34733, June 29, 1999; 65 FR 26023, May 4, 2000; 66 FR 7064, Jan. 22, 2001; 68 FR 14506, Mar. 25, 2003; 72 FR 57820, Oct. 10, 2007]

§141.155 Report delivery and recordkeeping.

(a) Except as provided in paragraph (g) of this section, each community water system must mail or otherwise directly deliver one copy of the report to each customer.

(b) The system must make a good faith effort to reach consumers who do not get water bills, using means recommended by the primacy agency. EPA expects that an adequate good faith effort will be tailored to the consumers who are served by the system but are not bill-payingcustomers, such as renters or workers. A good faith effort to reach consumers would include a mix of methods appropriate to the particular system such as: Posting the reports on the Internet; mailing to postal patrons in metropolitan areas; advertising the availability of the report in the news media; publication in a local newspaper; posting in public places such as cafeterias or lunch rooms of public buildings; delivery of multiple copies for distribution by single-billercustomers such as apartment buildings or large private employers; delivery to community organizations.

(c) No later than the date the system is required to distribute the report to its customers, each community water system must mail a copy of the report to the primacy agency, followed within 3 months by a certification that the report has been distributed to customers, and that the information is correct and consistent with the compliance monitoring data previously submitted to the primacy agency.

(d) No later than the date the system is required to distribute the report to its customers, each community water system must deliver the report to any other agency or clearinghouse identified by the primacy agency.

(e) Each community water system must make its reports available to the public upon request.

(f) Each community water system serving 100,000 or more persons must post its current year's report to a publicly-accessiblesite on the Internet.

(g) The Governor of a State or his designee, or the Tribal Leader where the tribe has met the eligibility requirements contained in §142.72 for the purposes of waiving the mailing requirement, can waive the requirement of paragraph (a) of this section for community water systems serving fewer than 10,000 persons. In consultation with the tribal government, the Regional Administrator may waive the requirement of §141.155(a) in areas in Indian country where no tribe has been deemed eligible.

(1) Such systems must:

(i) Publish the reports in one or more local newspapers serving the area in which the system is located;

(ii) Inform the customers that the reports will not be mailed, either in the newspapers in which the reports are published or by other means approved by the State; and

(iii) Make the reports available to the public upon request.

(2) Systems serving 500 or fewer persons may forego the requirements of paragraphs (g)(1)(i) and (ii) of this section if they provide notice at least once per year to their customers by mail, door-to-doordelivery or by posting in an appropriate location that the report is available upon request.

(h) Any system subject to this subpart must retain copies of its Consumer Confidence Report for no less than 3 years.

[63 FR 44526, Aug. 19, 1998, as amended at 65 FR 26023, May 4, 2000]

APPENDIX A TO SUBPART O OF PART 141—REGULATED CONTAMINANTS

Contaminant (units)	Traditional MCL in mg/L	To convert for CCR, multiply by	MCL in CCR units	MCLG	Major sources in drinking water	Health effects language
Microbiological contaminants:						
Total Coliform Bacteria †.	MCL (systems that collect ≥40 samples/month) 5% of monthly samples are positive; (systems that collect <40 samples/ month) 1 positive monthly sample.		MCL (systems that collect ≥40 samples/month) 5% of monthly samples are positive; (systems that collect <40 samples/ month) 1 positive monthly sample..	0	Naturally present in the environment.	Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially-harmful, bacteria may be present. Coliforms were found in more samples than allowed and this was a warning of potential problems.
Total Coliform Bacteria ‡.	TT		TT	N/A	Naturally present in the environment.	Use language found in §141.153(h)(7)(i)(A)
Fecal coliform and *E. coli* †	0		0	0	Human and animal fecal waste	Fecal coliforms and *E. coli* are bacteria whose presence indicates that the water may be contaminated with human or animal wastes. Microbes in these wastes can cause short-term effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a special health risk for infants, young children, some of the elderly, and people with severely compromised immune systems.

E. coli ‡	Routine and repeat samples are total coliform- positive and either is *E. coli*- positive or system fails to take repeat samples following *E. coli*- positive routine sample or system fails to analyze total coliform- positive repeat sample for *E. coli*.		Routine and repeat samples are total coliform- positive and either is *E. coli*- positive or system fails to take repeat samples following *E. coli*- positive routine sample or system fails to analyze total coliform- positive repeat sample for *E. coli*.	0	Human and animal fecal waste	*E. coli* are bacteria whose presence indicates that the water may be contaminated with human or animal wastes. Human pathogens in these wastes can cause short- term effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a greater health risk for infants, young children, the elderly, and people with severely- compromised immune systems.
Fecal Indicators (enterococci or coliphage).	TT		TT	N/A	Human and animal fecal waste	Fecal indicators are microbes whose presence indicates that the water may be contaminated with human or animal wastes. Microbes in these wastes can cause short- term health effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a special health risk for infants, young children, some of the elderly, and people with severely compromised immune systems.
Total organic carbon (ppm).	TT		TT	N/A	Naturally present in the environment.	Total organic carbon (TOC) has no health effects. However, total organic carbon provides a medium for the formation of disinfection by products. These byproducts include trihalomethanes (THMs) and haloacetic acids (HAAs). Drinking water containing these byproducts in excess of the MCL may lead to adverse health effects, liver or kidney problems, or nervous system effects, and may lead to an increased risk of getting cancer.

Contaminant (units)	Traditional MCL in mg/L	To convert for CCR, multiply by	MCL in CCR units	MCLG	Major sources in drinking water	Health effects language
Turbidity (NTU)	TT		TT	N/A	Soil runoff	Turbidity has no health effects. However, turbidity can interfere with disinfection and provide a medium for microbial growth. Turbidity may indicate the presence of disease-causing organisms. These organisms include bacteria, viruses, and parasites that can cause symptoms such as nausea, cramps, diarrhea and associated headaches.
Radioactive contaminants:						
Beta/photon emitters (mrem/yr).	4 mrem/yr	¥	4	0	Decay of natural and man-made deposits.	Certain minerals are radioactive and may emit forms of radiation known as photons and beta radiation. Some people who drink water containing beta particle and photon radioactivity in excess of the MCL over many years may have an increased risk of getting cancer.
Alpha emitters (pCi/L)	15 pCi/L	¥	15	0	Erosion of natural deposits	Certain minerals are radioactive and may emit a form of radiation known as alpha radiation. Some people who drink water containing alpha emitters in excess of the MCL over many years may have an increased risk of getting cancer.
Combined radium (pCi/L).	5 pCi/L	¥	5	0	Erosion of natural deposits	Some people who drink water containing radium-226 or -228 in excess of the MCL over many years may have an increased risk of getting cancer.
Uranium (pCi/L)	30 µg/L	¥	30	0	Erosion of natural deposits	Some people who drink water containing uranium in excess of the MCL over many years may have an increased risk of getting cancer and kidney toxicity.

Inorganic contaminants:						
Antimony (ppb)	.006	1000	6	6	Discharge from petroleum refineries; fire retardants; ceramics; electronics; solder.	Some people who drink water containing antimony well in excess of the MCL over many years could experience increases in blood cholesterol and decreases in blood sugar.
Arsenic (ppb)	[1]0.010	1000	[1]10.	[1]0	Erosion of natural deposits; Runoff from orchards; Runoff from glass and electronics production wastes.	Some people who drink water containing arsenic in excess of the MCL over many years could experience skin damage or problems with their circulatory system, and may have an increased risk of getting cancer.
Asbestos (MFL)	7 MFL		7	7	Decay of asbestos cement water mains; Erosion of natural deposits.	Some people who drink water containing asbestos in excess of the MCL over many years may have an increased risk of developing benign intestinal polyps.
Barium (ppm)	2		2	2	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits.	Some people who drink water containing barium in excess of the MCL over many years could experience an increase in their blood pressure.
Beryllium (ppb)	.004	1000	4	4	Discharge from metal refineries and coal- burning factories; Discharge from electrical, aerospace, and defense industries.	Some people who drink water containing beryllium well in excess of the MCL over many years could develop intestinal lesions
Bromate (ppb)	.010	1000	10	0	By- product of drinkig water disinfection.	Some people who drink water of containing bromate in excess of the MCL over many years may have an increased risk of getting cancer.
Cadmium (ppb)	.005	1000	5	5	Corrosion of galvanized pipes; Erosion of natural deposits; Discharge from metal refineries; Runoff from waste batteries and paints.	Some people who drink water containing cadmium in excess of the MCL over many years could experience kidney damage.

Contaminant (units)	Traditional MCL in mg/L	To convert for CCR, multiply by	MCL in CCR units	MCLG	Major sources in drinking water	Health effects language
Chloramines (ppm)	MRDL=4		MRDL=4	MRDLG=4	Water additive used to control microbes.	Some people who use water containing chloramines well in excess of the MRDL could experience irritating effects to their eyes and nose. Some people who drink water containing chloramines well in excess of the MRDL could experience stomach discomfort or anemia.
Chlorine (ppm)	MRDL=4		MRDL=4	MRDLG=4	Water additive used to control microbes.	Some people who use water containing chlorine well in excess of the MRDL could experience irritating effects to their eyes and nose. Some people who drink water containing chlorine well in excess of the MRDL could experience stomach discomfort.
Chlorine dioxide (ppb)	MRDL=.8	1000	MRDL=800	MRDLG=800	Water additive used to control micorbes.	Some infants and young children who drink water chlorine dioxide in excess of the MRDL could experience nervous system effects. Similar effects may occur in fetuses of pregnant women who drink water containing chlorine dioxide in excess of the MRDL. Some people may experience anemia.
Chlorite (ppm)	1		1	0.8	By-product of drinking water disinfection.	Some infants and young children who drink water containing chlorite in excess of the MCL could experience nervous system effects. Similar effects may occur in fetuses of pregnant women who drink water containing chlorite in excess of the MCL. Some people may experience anemia.
Chromium (ppb)	.1	1000	100	100	Discharge from steel and pulp mills; Erosion of natural deposits.	Some people who use water containing chromium well in excess of the MCL over many years could experience allergic dermatitis.

Copper (ppm)	AL=1.3		AL=1.3	1.3	Corrosion of household plumbing systems; Erosion of natural deposits.	Copper is an essential nutrient, but some people who drink water containing copper in excess of the action level over a relatively short amount of time could experience gastrointestinal distress. Some people who drink water containing copper in excess of the action level over many years could suffer liver or kidney damage. People with Wilson's disease should consult their personal doctor.
Cyanide (ppb)	.2	1000	200	200	Discharge from steel/metal factories; Discharge from plastic and fertilizer factories.	Some people who drink water containing cyanide well in excess of the MCL over many years could experience nerve damage or problems with their thyroid.
Fluoride (ppm)	4		4	4	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories.	Some people who drink water containing fluoride in excess of the MCL over many years could get bone disease, including pain and tenderness of the bones. Fluoride in drinking water at half the MCL or more may cause mottling of children's teeth, usually in children less than nine years old. Mottling, also known as dental fluorosis, may include brown staining and/or pitting of the teeth, and occurs only in developing teeth before they erupt from the gums.
Lead (ppb)	AL=.015	1000	AL=15	0	Corrosion of household plumbing systems; Erosion of natural deposits.	Infants and children who drink water containing lead in excess of the action level could experience delays in their physical or mental development. Children could show slight deficits in attention span and learning abilities. Adults who drink this water over many years could develop kidney problems or high blood pressure.

Contaminant (units)	Traditional MCL in mg/L	To convert for CCR, multiply by	MCL in CCR units	MCLG	Major sources in drinking water	Health effects language
Mercury [inorganic] (ppb).	.002	1000	2	2	Erosion of natural deposits; Discharge from refineries and factories; Runoff from landfills; Runoff from cropland.	Some people who drink water containing inorganic mercury well in excess of the MCL over many years could experience kidney damage.
Nitrate (ppm)	10		10	10	Runoff from fertilizer use; Leaching from septic tanks, sew age; Erosion of natural deposits.	Infants below the age of six months who drink water containing nitrate in excess of the MCL could become seriously ill and, if untreated, may die. Symptoms include shortness of breath and blue baby syndrome.
Nitrite (ppm)	1		1	1	Runoff from fertilizer use; Leaching from septic tanks, sew age; Erosion of natural deposits.	Infants below the age of six months who drink water containing nitrite in excess of the MCL could become seriously ill and, if untreated, may die. Symptoms include shortness of breath and blue baby syndrome.
Selenium (ppb)	.05	1000	50	50	Discharge from petroleum and metal refineries; Erosion of natural deposits; Discharge from mines.	Selenium is an essential nutrient. However, some people who drink water containing selenium in excess of the MCL over many years could experience hair or fingernail losses, numbness in fingers or toes, or problems with their circulation.
Thallium (ppb)	.002	1000	2	0.5	Leaching from ore- processing sites; Discharge from electronics, glass, and drug factories.	Some people who drink water containing thallium in excess of the MCL over many years could experience hair loss, changes in their blood, or problems with their kidneys, intestines, or liver.
Synthetic organic contaminants including pesticides and herbicides:						
2,4- D(ppb)	.07	1000	70	70	Runoff from herbicide used on row crops.	Some people who drink water containing the weed killer 2,4-D well in excess of the MCL over many years could experience problems with their kidneys, liver, or adrenal glands.

2,4,5- TP[Silvex](ppb)	.05	1000	50	50	Residue of banned herbicide	Some people who drink water containing silvex in excess of the MCL over many years could experience liver problems.
Acrylamide	TT		TT	0	Added to water during sewage/wastewater treatment.	Some people who drink water containing high levels of acrylamide over a long period of time could have problems with their nervous system or blood, and may have an increased risk of getting cancer.
Alachlor (ppb)	.002	1000	2	0	Runoff from herbicide used on row crops.	Some people who drink water containing alachlor in excess of the MCL over many years could have problems with their eyes, liver, kidneys, or spleen, or experience anemia, and may have an increased risk of getting cancer.
Atrazine (ppb)	.003	1000	3	3	Runoff from herbicide used on row crops.	Some people who drink water containing atrazine well in excess of the MCL over many years could experience problems with their cardiovascular system or reproductive difficulties.
Benzo(a)pyrene [PAH] (nanograms/l).	.0002	1,000,000	200	0	Leaching from linings of water storage tanks and distribution lines.	Some people who drink water containing benzo(a)pyrene in excess of the MCL over many years may experience reproductive difficulties and may have an increased risk of getting cancer.
Carbofuran (ppb)	.04	1000	40	40	Leaching of soil fumigant used on rice and alfalfa.	Some people who drink water containing carbofuran in excess of the MCL over many years could experience problems with their blood, or nervous or reproductive systems.
Chlordane (ppb)	.002	1000	2	0	Residue of banned termiticide	Some people who drink water containing chlordane in excess of the MCL over many years could experience problems with their liver or nervous system, and may have an increased risk of getting cancer.

Contaminant (units)	Traditional MCL in mg/L	To convert for CCR, multiply by	MCL in CCR units	MCLG	Major sources in drinking water	Health effects language
Dalapon (ppb)	.2	1000	200	200	Runoff from herbicide used on rights of way.	Some people who drink water containing dalapon well in excess of the MCL over many years could experience minor kidney changes.
Di(2- ethylhexyl) adipate (ppb).	.4	1000	400	400	Discharge from chemical factories.	Some people who drink water containing di(2- ethylhexyl) adipate well in excess of the MCL over many years could experience toxic effects such as weight loss, liver enlargement or possible reproductive difficulties.
Di(2- ethylhexyl) phthalate (ppb).	.006	1000	6	0	Discharge from rubber and chemical factories.	Some people who drink water containing di(2- ethylhexyl) phthalate well in excess of the MCL over many years may have problems with their liver, or experience reproductive difficulties, and may have an increased risk of getting cancer.
Dibromochloropropane (ppt).	.0002	1,000,000	200	0	Runoff/leaching from soil fumigant used on soybeans, cotton, pineapples, and orchards.	Some people who drink water containing DBCP in excess of the MCL over many years could experience reproductive problems and may have an increased risk of getting cancer.
Dinoseb (ppb)	.007	1000	7	7	Runoff from herbicide used on soybeans and vegetables.	Some people who drink water containing dinoseb well in excess of the MCL over many years could experience reproductive difficulties.
Diquat (ppb)	.02	1000	20	20	Runoff from herbicide use	Some people who drink water containing diquat in excess of the MCL over many years could get cataracts.
Dioxin [2,3,7,8- TCDD] (ppq).	.00000003	1,000,000, 000	30	0	Emissions from waste incineration and other combustion; Discharge from chemical factories.	Some people who drink water containing dioxin in excess of the MCL over many years could experience reproductive difficulties and may have an increased risk of getting cancer.

Endothall (ppb)	.1	1000	100	100	Runoff from herbicide use	Some people who drink water containing endothall in excess of the MCL over many years could experience problems with their stomach or intestines.
Endrin (ppb)	.002	1000	2	2	Residue of banned insecticide	Some people who drink water containing endrin in excess of the MCL over many years could experience liver problems.
Epichlorohydrin	TT		TT	0	Discharge from industrial chemical factories; An impurity of some water treatment chemicals.	Some people who drink water containing high levels of epichlorohydrin over a long period of time could experience stomach problems, and may have an increased risk of getting cancer.
Ethylene dibromide (ppt).	.00005	1,000,000	50	0	Discharge from petroleum refineries.	Some people who drink water containing ethylene dibromide in excess of the MCL over many years could experience problems with their liver, stomach, reproductive system, or kidneys, and may have an increased risk of getting cancer.
Glyphosate (ppb)	.7	1000	700	700	Runoff from herbicide use	Some people who drink water containing glyphosate in excess of the MCL over many years could experience problems with their kidneys or reproductive difficulties.
Heptachlor (ppt)	.0004	1,000,000	400	0	Residue of banned pesticide	Some people who drink water containing heptachlor in excess of the MCL over many years could experience liver damage and may have an increased risk of getting cancer.
Heptachlor epoxide (ppt).	.0002	1,000,000	200	0	Breakdown of heptachlor	Some people who drink water containing heptachlor epoxide in excess of the MCL over many years could experience liver damage, and may have an increased risk of getting cancer.

Contaminant (units)	Traditional MCL in mg/L	To convert for CCR, multiply by	MCL in CCR units	MCLG	Major sources in drinking water	Health effects language
Hexachlorobenzene (ppb).	.001	1000	1	0	Discharge from metal refineries and agricultural chemical factories.	Some people who drink water containing hexachlorobenzene in excess of the MCL over many years could experience problems with their liver or kidneys, or adverse reproductive effects, and may have an increased risk of getting cancer.
Hexachlorocyclopentadiene (ppb).	.05	1000	50	50	Discharge from chemical factories.	Some people who drink water containing hexachlorocyclopentadiene well in excess of the MCL over many years could experience problems with their kidneys or stomach.
Lindane (ppt)	.0002	1,000,000	200	200	Runoff/leaching from insecticide used on cattle, lumber, gardens.	Some people who drink water containing lindane in excess of the MCL over many years could experience problems with their kidneys or liver.
Methoxychlor (ppb)	.04	1000	40	40	Runoff/leaching from insecticide used on fruits, vegetables, alfalfa, livestock.	Some people who drink water containing methoxychlor in excess of the MCL over many years could experience reproductive difficulties.
Oxamyl [Vydate] (ppb)	.2	1000	200	200	Runoff/leaching from insecticide used on apples, potatoes and tomatoes.	Some people who drink water containing oxamyl in excess of the MCL over many years could experience slight nervous system effects.
PCBs [Polychlorinated biphenyls] (ppt).	.0005	1,000,000	500	0	Runoff from landfills; Discharge of waste chemicals.	Some people who drink water containing PCBs in excess of the MCL over many years could experience changes in their skin, problems with their thymus gland, immune deficiencies, or reproductive or nervous system difficulties, and may have an increased risk of getting cancer.

Pentachlorophenol (ppb).	.001	1000	1	0	Discharge from wood preserving factories.	Some people who drink water containing pentachlorophenol in excess of the MCL over many years could experience problems with their liver or kidneys, and may have an increased risk of getting cancer.
Picloram (ppb)	.5	1000	500	500	Herbicide runoff	Some people who drink water containing picloram in excess of the MCL over many years could experience problems with their liver.
Simazine (ppb)	.004	1000	4	4	Herbicide runoff	Some people who drink water containing simazine in excess of the MCL over many years could experience problems with their blood.
Toxaphene (ppb)	.003	1000	3	0	Runoff/leaching from insecticide used on cotton and cattle.	Some people who drink water containing toxaphene in excess of the MCL over many years could have problems with their kidneys, liver, or thyroid, and may have an increased risk of getting cancer.
Volatile organic contaminants:						
Benzene (ppb)	.005	1000	5	0	Discharge from factories; Leaching from gas storage tanks and landfills.	Some people who drink water containing benzene in excess of the MCL over many years could experience anemia or a decrease in blood platelets, and may have an increased risk of getting cancer.
Carbon tetrachloride (ppb).	.005	1000	5	0	Discharge from chemical plants and other industrial activities.	Some people who drink water containing carbon tetrachloride in excess of the MCL over many years could experience problems with their liver and may have an increased risk of getting cancer.
Chlorobenzene (ppb)	.1	1000	100	100	Discharge from chemical and agricultural chemical factories.	Some people who drink water containing chlorobenzene in excess of the MCL over many years could experience problems with their liver or kidneys.
o- Dichlorobenzene (ppb).	.6	1000	600	600	Discharge from industrial chemical factories.	Some people who drink water containing o- dichlorobenzene well in excess of the MCL over many years could experience problems with their liver, kidneys, or circulatory systems.

Contaminant (units)	Traditional MCL in mg/L	To convert for CCR, multiply by	MCL in CCR units	MCLG	Major sources in drinking water	Health effects language
p- Dichlorobenzene (ppb).	.075	1000	75	75	Discharge from industrial chemical factories.	Some people who drink water containing p- dichlorobenzene in excess of the MCL over many years could experience anemia, damage to their liver, kidneys, or spleen, or changes in their blood.
1,2- Dichloroethane (ppb).	.005	1000	5	0	Discharge from industrial chemical factories.	Some people who drink water containing 1,2- dichloroethane in excess of the MCL over many years may have an increased risk of getting cancer.
1,1- Dichloroethylene (ppb).	.007	1000	7	7	Discharge from industrial chemical factories.	Some people who drink water containing 1,1- dichloroethylene in excess of the MCL over many years could experience problems with their liver.
cis- 1,2- Dichloroethylene (ppb).	.07	1000	70	70	Discharge from industrial chemical factories.	Some people who drink water containing cis- 1,2- dichloroethylene in excess of the MCL over many years could experience problems with their liver.
trans- 1,2- Dichloroethylene (ppb).	.1	1000	100	100	Discharge from industrial chemical factories.	Some people who drink water containing trans- 1,2- dichloroethylene well in excess of the MCL over many years could experience problems with their liver.
Dichloromethane (ppb)	.005	1000	5	0	Discharge from pharmaceutical and chemical factories.	Some people who drink water containing dichloromethane in excess of the MCL over many years could have liver problems and may have an increased risk of getting cancer.
1,2- Dichloropropane (ppb).	.005	1000	5	0	Discharge from industrial chemical factories.	Some people who drink water containing 1,2- dichloropropane in excess of the MCL over many years may have an increased risk of getting cancer.
Ethylbenzene (ppb)	.7	1000	700	700	Discharge from petroleum refineries.	Some people who drink water containing ethylbenzene well in excess of the MCL over many years could experience problems with their liver or kidneys.

Haloacetic Acids (HAA) (ppb).	.060	1000	60	N/A	By-product of drinking water disinfection.	Some people who drink water containing haloacetic acids in excess of the MCL over many years may have an increased risk of getting cancer.
Styrene (ppb)	.1	1000	100	100	Discharge from rubber and plastic factories; Leaching from landfills.	Some people who drink water containing styrene well in excess of the MCL over many years could have problems with their liver, kidneys, or circulatory system.
Tetrachloroethylene (ppb).	.005	1000	5	0	Discharge from factories and dry cleaners.	Some people who drink water containing tetrachloroethylene in excess of the MCL over many years could have problems with their liver, and may have an increased risk of getting cancer.
1,2,4-Trichlorobenzene (ppb).	.07	1000	70	70	Discharge from textile-finishing factories.	Some people who drink water containing 1,2,4-trichlorobenzene well in excess of the MCL over many years could experience changes in their adrenal glands.
1,1,1-Trichloroethane (ppb).	.2	1000	200	200	Discharge from metal degreasing sites and other factories.	Some people who drink water containing 1,1,1-trichloroethane in excess of the MCL over many years could experience problems with their liver, nervous system, or circulatory system.
1,1,2-Trichloroethane (ppb).	.005	1000	5	3	Discharge from industrial chemical factories.	Some people who drink water containing 1,1,2-trichloroethane well in excess of the MCL over many years could have problems with their liver, kidneys, or immune systems.
Trichloroethylene (ppb)	.005	1000	5	0	Discharge from metal degreasing sites and other factories.	Some people who drink water containing trichloroethylene in excess of the MCL over many years could experience problems with their liver and may have an increased risk of getting cancer.

Contaminant (units)	Traditional MCL in mg/L	To convert for CCR, multiply by	MCL in CCR units	MCLG	Major sources in drinking water	Health effects language
TTHMs [Total trihalomethanes] (ppb).	0.10/.080	1000	100/80	N/A	By- product of drinking water disinfection.	Some people who drink water containing trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous systems, and may have an increased risk of getting cancer.
Toluene (ppm)	1		1	1	Discharge from petroleum factories.	Some people who drink water containing toluene well in excess of the MCL over many years could have problems with their nervous system, kidneys, or liver.
Vinyl Chloride (ppb)	.002	1000	2	0	Leaching from PVC piping; Discharge from plastics factories.	Some people who drink water containing vinyl chloride in excess of the MCL over many years may have an increased risk of getting cancer.
Xylenes (ppm)	10		10	10	Discharge from petroleum factories; Discharge from chemical factories.	Some people who drink water containing xylenes in excess of the MCL over many years could experience damage to their nervous system.

†Until March 31, 2016.
‡Beginning April 1, 2016.
[1] These arsenic values are effective January 23, 2006. Until then, the MCL is 0.05 mg/L and there is no MCLG.
Key:
AL = Action Level
MCL = Maximum Contaminant Level
MCLG = Maximum Contaminant Level Goal
MFL = million fibers per liter
MRDL = Maximum Residual Disinfectant Level
MRDLG = Maximum Residual Disinfectant Level Goal
mrem/year = millirems per year (a measure of radiation absorbed by the body)
N/A = Not Applicable
NTU = Nephelometric Turbidity Units (a measure of water clarity)
pCi/l = picocuries per liter (a measure of radioactivity)
ppm = parts per million, or milligrams per liter (mg/l)
ppb = parts per billion, or micrograms per liter (μg/l)
ppt = parts per trillion, or nanograms per liter
ppq = parts per quadrillion, or picograms per liter
TT = Treatment Technique

[65 FR 26024, May 4, 2000, as amended at 65 FR 76749, Dec. 7, 2000; 66 FR 7064, Jan. 22, 2001; 67 FR 70855, Nov. 27, 2002; 67 FR 73011, Dec. 9, 2002; 68 FR 14506, Mar. 25, 2003; 71 FR 65652, Nov. 8, 2006; 78 FR 10349, Feb. 13, 2013]

Subpart P—Enhanced Filtration and Disinfection—Systems Serving 10,000 or More People

SOURCE: 63 FR 69516, Dec. 16, 1998, unless otherwise noted.

§141.170 General requirements.

(a) The requirements of this subpart P constitute national primary drinking water regulations. These regulations establish requirements for filtration and disinfection that are in addition to criteria under which filtration and disinfection are required under subpart H of this part. The requirements of this subpart are applicable to subpart H systems serving at least 10,000 people, beginning January 1, 2002 unless otherwise specified in this subpart. The regulations in this subpart establish or extend treatment technique requirements in lieu of maximum contaminant levels for the following contaminants: *Giardia lamblia,* viruses, heterotrophic plate count bacteria, *Legionella, Cryptosporidium,* and turbidity. Each subpart H system serving at least 10,000 people must provide treatment of its source water that complies with these treatment technique requirements and are in addition to those identified in §141.70. The treatment technique requirements consist of installing and properly operating water treatment processes which reliably achieve:

(1) At least 99 percent (2-log) removal of *Cryptosporidium* between a point where the raw water is not subject to recontamination by surface water runoff and a point downstream before or at the first customer for filtered systems, or *Cryptosporidium* control under the watershed control plan for unfiltered systems.

(2) Compliance with the profiling and benchmark requirements under the provisions of §141.172.

(b) A public water system subject to the requirements of this subpart is considered to be in compliance with the requirements of paragraph (a) of this section if:

(1) It meets the requirements for avoiding filtration in §§141.71 and 141.171 and the disinfection requirements in §§141.72 and 141.172; or

(2) It meets the applicable filtration requirements in either §141.73 or §141.173 and the disinfection requirements in §§141.72 and 141.172.

(c) Systems are not permitted to begin construction of uncovered finished water storage facilities beginning February 16, 1999.

(d) Subpart H systems that did not conduct optional monitoring under §141.172 because they served fewer than 10,000 persons when such monitoring was required, but serve more than 10,000 persons prior to January 1, 2005 must comply with §§141.170, 141.171, 141.173, 141.174, and 141.175. These systems must also consult with the State to establish a disinfection benchmark. A system that decides to make a significant change to its disinfection practice, as described in §141.172(c)(1)(i) through (iv) must consult with the State prior to making such change.

[63 FR 69516, Dec. 16, 1998, as amended at 66 FR 3779, Jan. 16, 2001; 67 FR 1836, Jan. 14, 2002; 69 FR 38856, June 29, 2004]

§141.171 Criteria for avoiding filtration.

In addition to the requirements of §141.71, a public water system subject to the requirements of this subpart that does not provide filtration must meet all of the conditions of paragraphs (a) and (b) of this section.

(a) *Site-specific conditions.* In addition to site-specific conditions in §141.71(b), systems must maintain the watershed control program under §141.71(b)(2) to minimize the potential for contamination by *Cryptosporidium* oocysts in the source water. The watershed control program must, for *Cryptosporidium*:

(1) Identify watershed characteristics and activities which may have an adverse effect on source water quality; and

(2) Monitor the occurrence of activities which may have an adverse effect on source water quality.

(b) During the onsite inspection conducted under the provisions of §141.71(b)(3), the State must determine whether the watershed control program established under §141.71(b)(2) is adequate to limit potential contamination by *Cryptosporidium* oocysts. The adequacy of the program must be based on the comprehensiveness of the watershed review; the effectiveness of the system's program to monitor and control detrimental activities occurring in the watershed; and the extent to which the water system has maximized land ownership and/or controlled land use within the watershed.

§141.172 Disinfection profiling and benchmarking.

(a) *Determination of systems required to profile.* A public water system subject to the requirements of this subpart must determine its TTHM annual average using the procedure in paragraph (a)(1) of this section and its HAA5 annual average using the procedure in paragraph (a)(2) of this section. The annual average is the arithmetic average of the quarterly averages of four consecutive quarters of monitoring.

(1) The TTHM annual average must be the annual average during the same period as is used for the HAA5 annual average.

(i) Those systems that collected data under the provisions of subpart M (Information Collection Rule) must use the results of the samples collected during the last four quarters of required monitoring under §141.142.

(ii) Those systems that use "grandfathered" HAA5 occurrence data that meet the provisions of paragraph (a)(2)(ii) of this section must use TTHM data collected at the same time under the provisions of §§141.12 and 141.30.

(iii) Those systems that use HAA5 occurrence data that meet the provisions of paragraph (a)(2)(iii)(A) of this section must use TTHM data collected at the same time under the provisions of §§141.12 and 141.30.

(2) The HAA5 annual average must be the annual average during the same period as is used for the TTHM annual average.

(i) Those systems that collected data under the provisions of subpart M (Information Collection Rule) must use the results of the samples collected during the last four quarters of required monitoring under §141.142.

(ii) Those systems that have collected four quarters of HAA5 occurrence data that meets the routine monitoring sample number and location requirements for TTHM in §§141.12 and 141.30 and handling and analytical method requirements of §141.142(b)(1) may use those data to determine whether the requirements of this section apply.

(iii) Those systems that have not collected four quarters of HAA5 occurrence data that meets the provisions of either paragraph (a)(2)(i) or (ii) of this section by March 16, 1999 must either:

(A) Conduct monitoring for HAA5 that meets the routine monitoring sample number and location requirements for TTHM in §§141.12 and 141.30 and handling and analytical method requirements of §141.142(b)(1) to determine the HAA5 annual average and whether the requirements of paragraph (b) of this section apply. This monitoring must be completed so that the applicability determination can be made no later than March 31, 2000, or

(B) Comply with all other provisions of this section as if the HAA5 monitoring had been conducted and the results required compliance with paragraph (b) of this section.

(3) The system may request that the State approve a more representative annual data set than the data set determined under paragraph (a)(1) or (2) of this section for the purpose of determining applicability of the requirements of this section.

(4) The State may require that a system use a more representative annual data set than the data set determined under paragraph (a)(1) or (2) of this section for the purpose of determining applicability of the requirements of this section.

(5) The system must submit data to the State on the schedule in paragraphs (a)(5)(i) through (v) of this section.

(i) Those systems that collected TTHM and HAA5 data under the provisions of subpart M (Information Collection Rule), as required by paragraphs (a)(1)(i) and (a)(2)(i) of this section, must submit the results of the samples collected during the last 12 months of required monitoring under §141.142 not later than December 31, 1999.

(ii) Those systems that have collected four consecutive quarters of HAA5 occurrence data that meets the routine monitoring sample number and location for TTHM in §§141.12 and 141.30

and handling and analytical method requirements of §141.142(b)(1), as allowed by paragraphs (a)(1)(ii) and (a)(2)(ii) of this section, must submit those data to the State not later than April 16, 1999. Until the State has approved the data, the system must conduct monitoring for HAA5 using the monitoring requirements specified under paragraph (a)(2)(iii) of this section.

(iii) Those systems that conduct monitoring for HAA5 using the monitoring requirements specified by paragraphs (a)(1)(iii) and (a)(2)(iii)(A) of this section, must submit TTHM and HAA5 data not later than March 31, 2000.

(iv) Those systems that elect to comply with all other provisions of this section as if the HAA5 monitoring had been conducted and the results required compliance with this section, as allowed under paragraphs (a)(2)(iii)(B) of this section, must notify the State in writing of their election not later than December 31, 1999.

(v) If the system elects to request that the State approve a more representative annual data set than the data set determined under paragraph (a)(2)(i) of this section, the system must submit this request in writing not later than December 31, 1999.

(6) Any system having either a TTHM annual average ≥0.064 mg/L or an HAA5 annual average ≥0.048 mg/L during the period identified in paragraphs (a)(1) and (2) of this section must comply with paragraph (b) of this section.

(b) *Disinfection profiling.* (1) Any system that meets the criteria in paragraph (a)(6) of this section must develop a disinfection profile of its disinfection practice for a period of up to three years.

(2) The system must monitor daily for a period of 12 consecutive calendar months to determine the total logs of inactivation for each day of operation, based on the CT99.9 values in Tables 1.1–1.6, 2.1, and 3.1 of §141.74(b), as appropriate, through the entire treatment plant. This system must begin this monitoring not later than April 1, 2000. As a minimum, the system with a single point of disinfectant application prior to entrance to the distribution system must conduct the monitoring in paragraphs (b)(2)(i) through (iv) of this section. A system with more than one point of disinfectant application must conduct the monitoring in paragraphs (b)(2)(i) through (iv) of this section for each disinfection segment. The system must monitor the parameters necessary to determine the total inactivation ratio, using analytical methods in §141.74(a), as follows:

(i) The temperature of the disinfected water must be measured once per day at each residual disinfectant concentration sampling point during peak hourly flow.

(ii) If the system uses chlorine, the pH of the disinfected water must be measured once per day at each chlorine residual disinfectant concentration sampling point during peak hourly flow.

(iii) The disinfectant contact time(s) (''T'') must be determined for each day during peak hourly flow.

(iv) The residual disinfectant concentration(s) (''C'') of the water before or at the first customer and prior to each additional point of disinfection must be measured each day during peak hourly flow.

(3) In lieu of the monitoring conducted under the provisions of paragraph (b)(2) of this section to develop the disinfection profile, the system may elect to meet the requirements of paragraph (b)(3)(i) of this section. In addition to the monitoring conducted under the provisions of paragraph (b)(2) of this section to develop the disinfection profile, the system may elect to meet the requirements of paragraph (b)(3)(ii) of this section.

(i) A PWS that has three years of existing operational data may submit those data, a profile generated using those data, and a request that the State approve use of those data in lieu of monitoring under the provisions of paragraph (b)(2) of this section not later than March 31, 2000. The State must determine whether these operational data are substantially equivalent to data collected under the provisions of paragraph (b)(2) of this section. These data must also be representative of *Giardia lamblia* inactivation through the entire treatment plant and not just of certain treatment segments. Until the State approves this request, the system is required to conduct monitoring under the provisions of paragraph (b)(2) of this section.

(ii) In addition to the disinfection profile generated under paragraph (b)(2) of this section, a PWS that has existing operational data may use those data to develop a disinfection profile for additional years. Such systems may use these additional yearly disinfection profiles to develop a benchmark under the provisions of paragraph (c) of this section. The State must determine whether these operational data are substantially equivalent to data collected under the provisions of paragraph (b)(2) of this section. These data must also be representative of inactivation through the entire treatment plant and not just of certain treatment segments.

(4) The system must calculate the total inactivation ratio as follows:

(i) If the system uses only one point of disinfectant application, the system may determine the total inactivation ratio for the disinfection segment based on either of the methods in paragraph (b)(4)(i)(A) or (b)(4)(i)(B) of this section.

(A) Determine one inactivation ratio (CTcalc/CT$_{99.9}$) before or at the first customer during peak hourly flow.

(B) Determine successive CTcalc/CT$_{99.9}$ values, representing sequential inactivation ratios, between the point of disinfectant application and a point before or at the first customer during peak hourly flow. Under this alternative, the system must calculate the total inactivation ratio by determining (CTcalc/CT$_{99.9}$) for each sequence and then adding the (CTcalc/CT$_{99.9}$) values together to determine (S (CTcalc/CT$_{99.9}$)).

(ii) If the system uses more than one point of disinfectant application before the first customer, the system must determine the CT value of each disinfection segment immediately prior to the next point of disinfectant application, or for the final segment, before or at the first customer, during peak hourly flow. The (CTcalc/CT$_{99.9}$) value of each segment and (S(CTcalc/CT$_{99.9}$)) must be calculated using the method in paragraph (b)(4)(i) of this section.

(iii) The system must determine the total logs of inactivation by multiplying the value calculated in paragraph (b)(4)(i) or (ii) of this section by 3.0.

(5) A system that uses either chloramines or ozone for primary disinfection must also calculate the logs of inactivation for viruses using a method approved by the State.

(6) The system must retain disinfection profile data in graphic form, as a spreadsheet, or in some other format acceptable to the State for review as part of sanitary surveys conducted by the State.

(c) *Disinfection benchmarking.* (1) Any system required to develop a disinfection profile under the provisions of paragraphs (a) and (b) of this section and that decides to make a significant change to its disinfection practice must consult with the State prior to making such change. Significant changes to disinfection practice are:

(i) Changes to the point of disinfection;

(ii) Changes to the disinfectant(s) used in the treatment plant;

(iii) Changes to the disinfection process; and

(iv) Any other modification identified by the State.

(2) Any system that is modifying its disinfection practice must calculate its disinfection benchmark using the procedure specified in paragraphs (c)(2)(i) through (ii) of this section.

(i) For each year of profiling data collected and calculated under paragraph (b) of this section, the system must determine the lowest average monthly *Giardia lamblia* inactivation in each year of profiling data. The system must determine the average *Giardia lamblia* inactivation for each calendar month for each year of profiling data by dividing the sum of daily *Giardia lamblia* of inactivation by the number of values calculated for that month.

(ii) The disinfection benchmark is the lowest monthly average value (for systems with one year of profiling data) or average of lowest monthly average values (for systems with more than one year of profiling data) of the monthly logs of *Giardia lamblia* inactivation in each year of profiling data.

(3) A system that uses either chloramines or ozone for primary disinfection must also calculate the disinfection benchmark for viruses using a method approved by the State.

(4) The system must submit information in paragraphs (c)(4)(i) through (iii) of this section to the State as part of its consultation process.

(i) A description of the proposed change;

(ii) The disinfection profile for *Giardia lamblia* (and, if necessary, viruses) under paragraph (b) of this section and benchmark as required by paragraph (c)(2) of this section; and

(iii) An analysis of how the proposed change will affect the current levels of disinfection.

[63 FR 69516, Dec. 16, 1998, as amended at 66 FR 3779, Jan. 16, 2001]

§141.173 Filtration.

A public water system subject to the requirements of this subpart that does not meet all of the criteria in this subpart and subpart H of this part for avoiding filtration must provide treatment consisting of both disinfection, as specified in §141.72(b), and filtration treatment which complies with the requirements of paragraph (a) or (b) of this section or §141.73 (b) or (c) by December 31, 2001.

(a) *Conventional filtration treatment or direct filtration.* (1) For systems using conventional filtration or direct filtration, the turbidity level of representative samples of a system's filtered water must be less than or equal to 0.3 NTU in at least 95 percent of the measurements taken each month, measured as specified in §141.74(a) and (c).

(2) The turbidity level of representative samples of a system's filtered water must at no time exceed 1 NTU, measured as specified in §141.74(a) and (c).

(3) A system that uses lime softening may acidify representative samples prior to analysis using a protocol approved by the State.

(b) *Filtration technologies other than conventional filtration treatment, direct filtration, slow sand filtration, or diatomaceous earth filtration.* A public water system may use a filtration technology not listed in paragraph (a) of this section or in §141.73(b) or (c) if it demonstrates to the State, using pilot plant studies or other means, that the alternative filtration technology, in combination with disinfection treatment that meets the requirements of §141.72(b), consistently achieves 99.9 percent removal and/or inactivation of *Giardia lamblia* cysts and 99.99 percent removal and/or inactivation of viruses, and 99 percent removal of *Cryptosporidium* oocysts, and the State approves the use of the filtration technology. For each approval, the State will set turbidity performance requirements that the system must meet at least 95 percent of the time and that the system may not exceed at any time at a level that consistently achieves 99.9 percent removal and/or inactivation of *Giardia lamblia* cysts, 99.99 percent removal and/or inactivation of viruses, and 99 percent removal of *Cryptosporidium* oocysts.

[63 FR 69516, Dec. 16, 1998, as amended at 65 FR 20313, Apr. 14, 2000; 66 FR 3779, Jan. 16, 2001]

§141.174 Filtration sampling requirements.

(a) Monitoring requirements for systems using filtration treatment. In addition to monitoring required by §141.74, a public water system subject to the requirements of this subpart that provides conventional filtration treatment or direct filtration must conduct continuous monitoring of turbidity for each individual filter using an approved method in §141.74(a) and must calibrate turbidimeters using the procedure specified by the manufacturer. Systems must record the results of individual filter monitoring every 15 minutes.

(b) If there is a failure in the continuous turbidity monitoring equipment, the system must conduct grab sampling every four hours in lieu of continuous monitoring, but for no more than five working days following the failure of the equipment.

§141.175 Reporting and recordkeeping requirements.

In addition to the reporting and recordkeeping requirements in §141.75, a public water system subject to the requirements of this subpart that provides conventional filtration treatment or direct filtration must report monthly to the State the information specified in paragraphs (a) and (b) of this section beginning January 1, 2002. In addition to the reporting and recordkeeping requirements in §141.75, a public water system subject to the requirements of this subpart that provides filtration approved under §141.173(b) must report monthly to the State the information specified in paragraph (a) of this section beginning January 1, 2002. The reporting in paragraph (a) of this section is in lieu of the reporting specified in §141.75(b)(1).

(a) Turbidity measurements as required by §141.173 must be reported within 10 days after the end of each month the system serves water to the public. Information that must be reported includes:

(1) The total number of filtered water turbidity measurements taken during the month.

(2) The number and percentage of filtered water turbidity measurements taken during the month which are less than or equal to the turbidity limits specified in §141.173(a) or (b).

(3) The date and value of any turbidity measurements taken during the month which exceed 1 NTU for systems using conventional filtration treatment or direct filtration, or which exceed the maximum level set by the State under §141.173(b).

(b) Systems must maintain the results of individual filter monitoring taken under §141.174 for at least three years. Systems must report that they have conducted individual filter turbidity monitoring under §141.174 within 10 days after the end of each month the system serves water to the public. Systems must report individual filter turbidity measurement results taken under §141.174 within 10 days after the end of each month the system serves water to the public only if measurements demonstrate one or more of the conditions in paragraphs (b)(1) through (4) of this section. Systems that use lime softening may apply to the State for alternative exceedance levels for the levels specified in paragraphs (b)(1) through (4) of this section if they can demonstrate that higher turbidity levels in individual filters are due to lime carryover only and not due to degraded filter performance.

(1) For any individual filter that has a measured turbidity level of greater than 1.0 NTU in two consecutive measurements taken 15 minutes apart, the system must report the filter number, the turbidity measurement, and the date(s) on which the exceedance occurred. In addition, the system must either produce a filter profile for the filter within 7 days of the exceedance (if the system is not able to identify an obvious reason for the abnormal filter performance) and report that the profile has been produced or report the obvious reason for the exceedance.

(2) For any individual filter that has a measured turbidity level of greater than 0.5 NTU in two consecutive measurements taken 15 minutes apart at the end of the first four hours of continuous filter operation after the filter has been backwashed or otherwise taken offline, the system must report the filter number, the turbidity, and the date(s) on which the exceedance occurred. In addition, the system must either produce a filter profile for the filter within 7 days of the exceedance (if the system is not able to identify an obvious reason for the abnormal filter performance) and report that the profile has been produced or report the obvious reason for the exceedance.

(3) For any individual filter that has a measured turbidity level of greater than 1.0 NTU in two consecutive measurements taken 15 minutes apart at any time in each of three consecutive months, the system must report the filter number, the turbidity measurement, and the date(s) on which the exceedance occurred. In addition, the system must conduct a self-assessment of the filter within 14 days of the exceedance and report that the self-assessment was conducted. The self assessment must consist of at least the following components: assessment of filter performance; development of a filter profile; identification and prioritization of factors limiting filter performance; assessment of the applicability of corrections; and preparation of a filter self-assessment report.

(4) For any individual filter that has a measured turbidity level of greater

than 2.0 NTU in two consecutive measurements taken 15 minutes apart at any time in each of two consecutive months, the system must report the filter number, the turbidity measurement, and the date(s) on which the exceedance occurred. In addition, the system must arrange for the conduct of a comprehensive performance evaluation by the State or a third party approved by the State no later than 30 days following the exceedance and have the evaluation completed and submitted to the State no later than 90 days following the exceedance.

(c) *Additional reporting requirements.* (1) If at any time the turbidity exceeds 1 NTU in representative samples of filtered water in a system using conventional filtration treatment or direct filtration, the system must inform the State as soon as possible, but no later than the end of the next business day.

(2) If at any time the turbidity in representative samples of filtered water exceeds the maximum level set by the State under §141.173(b) for filtration technologies other than conventional filtration treatment, direct filtration, slow sand filtration, or diatomaceous earth filtration, the system must inform the State as soon as possible, but no later than the end of the next business day.

[63 FR 69516, Dec. 16, 1998, as amended at 66 FR 3779, Jan. 16, 2001]

Subpart Q—Public Notification of Drinking Water Violations

SOURCE: 65 FR 26035, May 4, 2000, unless otherwise noted.

§141.201 General public notification requirements.

Public water systems in States with primacy for the public water system supervision (PWSS) program must comply with the requirements in this subpart no later than May 6, 2002 or on the date the State-adopted rule becomes effective, whichever comes first. Public water systems in jurisdictions where EPA directly implements the PWSS program must comply with the requirements in this subpart on October 31, 2000. Prior to these dates, public water systems must continue to comply with the public notice requirements in §141.32 of this part. The term ''primacy agency'' is used in this subpart to refer to either EPA or the State or the Tribe in cases where EPA, the State, or the Tribe exercises primary enforcement responsibility for this subpart.

(a) *Who must give public notice?* Each owner or operator of a public water system (community water systems, non-transient non-community water systems, and transient non-community water systems) must give notice for all violations of national primary drinking water regulations (NPDWR) and for other situations, as listed in Table 1. The term ''NPDWR violations'' is used in this subpart to include violations of the maximum contaminant level (MCL), maximum residual disinfection level (MRDL), treatment technique (TT), monitoring requirements, and testing procedures in this part 141. Appendix A to this subpart identifies the tier assignment for each specific violation or situation requiring a public notice.

TABLE 1 TO §141.201—VIOLATION CATEGORIES AND OTHER SITUATIONS REQUIRING A PUBLIC NOTICE

(1) NPDWR violations:
  (i) Failure to comply with an applicable maximum contaminant level (MCL) or maximum residual disinfectant level (MRDL).
  (ii) Failure to comply with a prescribed treatment technique (TT).
  (iii) Failure to perform water quality monitoring, as required by the drinking water regulations.
  (iv) Failure to comply with testing procedures as prescribed by a drinking water regulation.
(2) Variance and exemptions under sections 1415 and 1416 of SDWA:
  (i) Operation under a variance or an exemption.
  (ii) Failure to comply with the requirements of any schedule that has been set under a variance or exemption.
(3) Special public notices:
  (i) Occurrence of a waterborne disease outbreak or other waterborne emergency.

TABLE 1 TO §141.201—VIOLATION CATEGORIES AND OTHER SITUATIONS REQUIRING A PUBLIC NOTICE—Continued

(ii) Exceedance of the nitrate MCL by non-community water systems (NCWS), where granted permission by the primacy agency under 141.11(d) of this part.
(iii) Exceedance of the secondary maximum contaminant level (SMCL) for fluoride.
(iv) Availability of unregulated contaminant monitoring data.
(v) Other violations and situations determined by the primacy agency to require a public notice under this subpart, not already listed in Appendix A.

(b) *What type of public notice is required for each violation or situation?* Public notice requirements are divided into three tiers, to take into account the seriousness of the violation or situation and of any potential adverse health effects that may be involved. The public notice requirements for each violation or situation listed in Table 1 of this section are determined by the tier to which it is assigned. Table 2 of this section provides the definition of each tier. Appendix A of this part identifies the tier assignment for each specific violation or situation.

TABLE 2 TO §141.201—DEFINITION OF PUBLIC NOTICE TIERS

(1) *Tier 1 public notice*—required for NPDWR violations and situations with significant potential to have serious adverse effects on human health as a result of short-term exposure.
(2) *Tier 2 public notice*—required for all other NPDWR violations and situations with potential to have serious adverse effects on human health.
(3) *Tier 3 public notice*—required for all other NPDWR violations and situations not included in Tier 1 and Tier 2.

(c) *Who must be notified?* (1) Each public water system must provide public notice to persons served by the water system, in accordance with this subpart. Public water systems that sell or otherwise provide drinking water to other public water systems (*i.e.*, to consecutive systems) are required to give public notice to the owner or operator of the consecutive system; the consecutive system is responsible for providing public notice to the persons it serves.

(2) If a public water system has a violation in a portion of the distribution system that is physically or hydraulically isolated from other parts of the distribution system, the primacy agency may allow the system to limit distribution of the public notice to only persons served by that portion of the system which is out of compliance. Permission by the primacy agency for limiting distribution of the notice must be granted in writing.

(3) A copy of the notice must also be sent to the primacy agency, in accordance with the requirements under §141.31(d).

§141.202 *Tier 1 Public Notice*—Form, manner, and frequency of notice.

(a) *Which violations or situations require a Tier 1 public notice?* Table 1 of this section lists the violation categories and other situations requiring a Tier 1 public notice. Appendix A to this subpart identifies the tier assignment for each specific violation or situation.

TABLE 1 TO §141.202—VIOLATION CATEGORIES AND OTHER SITUATIONS REQUIRING A TIER 1 PUBLIC NOTICE

(1) Violation of the MCL for total coliforms when fecal coliform or E. coli are present in the water distribution system (as specified in §141.63(b)), or when the water system fails to test for fecal coliforms or E. coli when any repeat sample tests positive for coliform (as specified in §141.21(e)); Violation of the MCL for *E. coli* (as specified in §141.63(c));
(2) Violation of the MCL for nitrate, nitrite, or total nitrate and nitrite, as defined in §141.62, or when the water system fails to take a confirmation sample within 24 hours of the system's receipt of the first sample showing an exceedance of the nitrate or nitrite MCL, as specified in §141.23(f)(2);
(3) Exceedance of the nitrate MCL by non-community water systems, where permitted to exceed the MCL by the primacy agency under §141.11(d), as required under §141.209;

TABLE 1 TO §141.202—VIOLATION CATEGORIES AND OTHER SITUATIONS REQUIRING A TIER 1 PUBLIC NOTICE—Continued

(4) Violation of the MRDL for chlorine dioxide, as defined in §141.65(a), when one or more samples taken in the distribution system the day following an exceedance of the MRDL at the entrance of the distribution system exceed the MRDL, or when the water system does not take the required samples in the distribution system, as specified in §141.133(c)(2)(i);

(5) Violation of the turbidity MCL under §141.13(b), where the primacy agency determines after consultation that a Tier 1 notice is required or where consultation does not take place within 24 hours after the system learns of the violation;

(6) Violation of the Surface Water Treatment Rule (SWTR), Interim Enhanced Surface Water Treatment Rule (IESWTR) or Long Term 1 Enhanced Surface Water Treatment Rule (LT1ESWTR) treatment technique requirement resulting from a single exceedance of the maximum allowable turbidity limit (as identified in appendix A), where the primacy agency determines after consultation that a Tier 1 notice is required or where consultation does not take place within 24 hours after the system learns of the violation;

(7) Occurrence of a waterborne disease outbreak, as defined in §141.2, or other waterborne emergency (such as a failure or significant interruption in key water treatment processes, a natural disaster that disrupts the water supply or distribution system, or a chemical spill or unexpected loading of possible pathogens into the source water that significantly increases the potential for drinking water contamination);

(8) Detection of *E. coli*, enterococci, or coliphage in source water samples as specified in §141.402(a) and §141.402(b);

(9) Other violations or situations with significant potential to have serious adverse effects on human health as a result of short-term exposure, as determined by the primacy agency either in its regulations or on a case-by-casebasis.

(b) *When is the Tier 1 public notice to be provided?* What additional steps are required? Public water systems must:

(1) Provide a public notice as soon as practical but no later than 24 hours after the system learns of the violation;

(2) Initiate consultation with the primacy agency as soon as practical, but no later than 24 hours after the public water system learns of the violation or situation, to determine additional public notice requirements; and

(3) Comply with any additional public notification requirements (including any repeat notices or direction on the duration of the posted notices) that are established as a result of the consultation with the primacy agency. Such requirements may include the timing, form, manner, frequency, and content of repeat notices (if any) and other actions designed to reach all persons served.

(c) *What is the form and manner of the public notice?* Public water systems must provide the notice within 24 hours in a form and manner reasonably calculated to reach all persons served. The form and manner used by the public water system are to fit the specific situation, but must be designed to reach residential, transient, and non-transient users of the water system. In order to reach all persons served, water systems are to use, at a minimum, one or more of the following forms of delivery:

(1) Appropriate broadcast media (such as radio and television);

(2) Posting of the notice in conspicuous locations throughout the area served by the water system;

(3) Hand delivery of the notice to persons served by the water system; or

(4) Another delivery method approved in writing by the primacy agency.

[65 FR 26035, May 4, 2000, as amended at 67 FR 1836, Jan. 14, 2002; 71 FR 65652, Nov. 8, 2006; 78 FR 10350, Feb. 13, 2013]

§141.203 *Tier 2 Public Notice*—Form, manner, and frequency of notice.

(a) *Which violations or situations require a Tier 2 public notice?* Table 1 of this section lists the violation categories and other situations requiring a Tier 2 public notice. Appendix A to this subpart identifies the tier assignment for each specific violation or situation.

TABLE 1 TO §141.203—VIOLATION CATEGORIES AND OTHER SITUATIONS REQUIRING A TIER 2 PUBLIC NOTICE

(1) All violations of the MCL, MRDL, and treatment technique requirements, except where a Tier 1 notice is required under §141.202(a) or where the primacy agency determines that a Tier 1 notice is required;
(2) Violations of the monitoring and testing procedure requirements, where the primacy agency determines that a Tier 2 rather than a Tier 3 public notice is required, taking into account potential health impacts and persistence of the violation; and
(3) Failure to comply with the terms and conditions of any variance or exemption in place.
(4) Failure to take corrective action or failure to maintain at least 4-log treatment of viruses (using inactivation, removal, or a State-approved combination of 4-log virus inactivation and removal) before or at the first customer under §141.403(a).

(b) *When is the Tier 2 public notice to be provided?* (1) Public water systems must provide the public notice as soon as practical, but no later than 30 days after the system learns of the violation. If the public notice is posted, the notice must remain in place for as long as the violation or situation persists, but in no case for less than seven days, even if the violation or situation is resolved. The primacy agency may, in appropriate circumstances, allow additional time for the initial notice of up to three months from the date the system learns of the violation. It is not appropriate for the primacy agency to grant an extension to the 30-day deadline for any unresolved violation or to allow across-the-board extensions by rule or policy for other violations or situations requiring a Tier 2 public notice. Extensions granted by the primacy agency must be in writing.

(2) The public water system must repeat the notice every three months as long as the violation or situation persists, unless the primacy agency determines that appropriate circumstances warrant a different repeat notice frequency. In no circumstance may the repeat notice be given less frequently than once per year. It is not appropriate for the primacy agency to allow less frequent repeat notice for an MCL or treatment technique violation under the Total Coliform Rule or subpart Y of this part or a treatment technique violation under the Surface Water Treatment Rule or Interim Enhanced Surface Water Treatment Rule. It is also not appropriate for the primacy agency to allow through its rules or policies across-the-boardreductions in the repeat notice frequency for other ongoing violations requiring a Tier 2 repeat notice. Primacy agency determinations allowing repeat notices to be given less frequently than once every three months must be in writing.

(3) For the turbidity violations specified in this paragraph, public water systems must consult with the primacy agency as soon as practical but no later than 24 hours after the public water system learns of the violation, to determine whether a Tier 1 public notice under §141.202(a) is required to protect public health. When consultation does not take place within the 24-hour period, the water system must distribute a Tier 1 notice of the violation within the next 24 hours (*i.e.,* no later than 48 hours after the system learns of the violation), following the requirements under §141.202(b) and (c). Consultation with the primacy agency is required for:

(i) Violation of the turbidity MCL under §141.13(b); or

(ii) Violation of the SWTR, IESWTR or LT1ESWTR treatment technique requirement resulting from a single exceedance of the maximum allowable turbidity limit.

(c) *What is the form and manner of the Tier 2 public notice?* Public water systems must provide the initial public notice and any repeat notices in a form and manner that is reasonably calculated to reach persons served in the required time period. The form and manner of the public notice may vary based on the specific situation and type of water system, but it must at a minimum meet the following requirements:

(1) Unless directed otherwise by the primacy agency in writing, community water systems must provide notice by:

(i) Mail or other direct delivery to each customer receiving a bill and to other service connections to which water is delivered by the public water system; and

(ii) Any other method reasonably calculated to reach other persons regularly served by the system, if they would not normally be reached by the notice required in paragraph (c)(1)(i) of this section. Such persons may include those who do not pay water bills or do not have service connection addresses (e.g., house renters, apartment dwellers, university students, nursing home patients, prison inmates, etc.). Other methods may include: Publication in a local newspaper; delivery of multiple copies for distribution by customers that provide their drinking water to others (e.g., apartment building owners or large private employers); posting in public places served by the system or on the Internet; or delivery to community organizations.

(2) Unless directed otherwise by the primacy agency in writing, non-community water systems must provide notice by:

(i) Posting the notice in conspicuous locations throughout the distribution system frequented by persons served by the system, or by mail or direct delivery to each customer and service connection (where known); and

(ii) Any other method reasonably calculated to reach other persons served by the system if they would not normally be reached by the notice required in paragraph (c)(2)(i) of this section. Such persons may include those served who may not see a posted notice because the posted notice is not in a location they routinely pass by. Other methods may include: Publication in a local newspaper or newsletter distributed to customers; use of E-mail to notify employees or students; or, delivery of multiple copies in central locations (e.g., community centers).

[65 FR 26035, May 4, 2000, as amended at 67 FR 1836, Jan. 14, 2002; 71 FR 65652, Nov. 8, 2006; 78 FR 10350, Feb. 13, 2013]

§141.204 *Tier 3 Public Notice*—Form, manner, and frequency of notice.

(a) *Which violations or situations require a Tier 3 public notice?* Table 1 of this section lists the violation categories and other situations requiring a Tier 3 public notice. Appendix A to this subpart identifies the tier assignment for each specific violation or situation.

TABLE 1 TO §141.204—VIOLATION CATEGORIES AND OTHER SITUATIONS REQUIRING A TIER 3 PUBLIC NOTICE

(1) Monitoring violations under 40 CFR part 141, except where a Tier 1 notice is required under §141.202(a) or where the primacy agency determines that a Tier 2 notice is required;
(2) Failure to comply with a testing procedure established in 40 CFR part 141, except where a Tier 1 notice is required under §141.202(a)) or where the primacy agency determines that a Tier 2 notice is required;
(3) Operation under a variance granted under Section 1415 or an exemption granted under Section 1416 of the Safe Drinking Water Act;
(4) Availability of unregulated contaminant monitoring results, as required under §141.207;
(5) Exceedance of the fluoride secondary maximum contaminant level (SMCL), as required under §141.208; and
(6) Reporting and Recordkeeping violations under subpart Y of 40 CFR part 141.

(b) *When is the Tier 3 public notice to be provided?* (1) Public water systems must provide the public notice not later than one year after the public water system learns of the violation or situation or begins operating under a variance or exemption. Following the initial notice, the public water system must repeat the notice annually for as long as the violation, variance, exemption, or other situation persists. If the public notice is posted, the notice must remain in place for as long as the violation, variance, exemption, or other situation persists, but in no case less than seven days (even if the violation or situation is resolved).

(2) Instead of individual Tier 3 public notices, a public water system may use an annual report detailing all violations and situations that occurred during the previous twelve months, as long as the timing requirements of paragraph (b)(1) of this section are met.

(c) *What is the form and manner of the Tier 3 public notice?* Public water systems must provide the initial notice and any repeat notices in a form and manner that is reasonably calculated to reach persons served in the required time period. The form and manner of the public notice may vary based on the specific situation and type of water system, but it must at a minimum meet the following requirements:

(1) Unless directed otherwise by the primacy agency in writing, community water systems must provide notice by:

(i) Mail or other direct delivery to each customer receiving a bill and to other service connections to which water is delivered by the public water system; and

(ii) Any other method reasonably calculated to reach other persons regularly served by the system, if they would not normally be reached by the notice required in paragraph (c)(1)(i) of this section. Such persons may include those who do not pay water bills or do not have service connection addresses (e.g., house renters, apartment dwellers, university students, nursing home patients, prison inmates, etc.). Other methods may include: Publication in a local newspaper; delivery of multiple copies for distribution by customers that provide their drinking water to others (e.g., apartment building owners or large private employers); posting in public places or on the Internet; or delivery to community organizations.

(2) Unless directed otherwise by the primacy agency in writing, non-community water systems must provide notice by:

(i) Posting the notice in conspicuous locations throughout the distribution system frequented by persons served by the system, or by mail or direct delivery to each customer and service connection (where known); and

(ii) Any other method reasonably calculated to reach other persons served by the system, if they would not normally be reached by the notice required in paragraph (c)(2)(i) of this section. Such persons may include those who may not see a posted notice because the notice is not in a location they routinely pass by. Other methods may include: Publication in a local newspaper or newsletter distributed to customers; use of E-mail to notify employees or students; or, delivery of multiple copies in central locations (e.g., community centers).

(d) *In what situations may the Consumer Confidence Report be used to meet the Tier 3 public notice requirements?* For community water systems, the Consumer Confidence Report (CCR) required under Subpart O of this part may be used as a vehicle for the initial Tier 3 public notice and all required repeat notices, as long as:

(1) The CCR is provided to persons served no later than 12 months after the system learns of the violation or situation as required under §141.204(b);

(2) The Tier 3 notice contained in the CCR follows the content requirements under §141.205; and

(3) The CCR is distributed following the delivery requirements under §141.204(c).

[65 FR 26035, May 4, 2000; 65 FR 38629, June 21, 2000, as amended at 78 FR 10350, Feb. 13, 2013]

§141.205 Content of the public notice.

(a) *What elements must be included in the public notice for violations of National Primary Drinking Water Regulations (NPDWR) or other situations requiring a public notice?* When a public water system violates a NPDWR or has a situation requiring public notification, each public notice must include the following elements:

(1) A description of the violation or situation, including the contaminant(s) of concern, and (as applicable) the contaminant level(s);

(2) When the violation or situation occurred;

(3) Any potential adverse health effects from the violation or situation, including the standard language under paragraph (d)(1) or (d)(2) of this section, whichever is applicable;

(4) The population at risk, including subpopulations particularly vulnerable if exposed to the contaminant in their drinking water;

(5) Whether alternative water supplies should be used;

(6) What actions consumers should take, including when they should seek medical help, if known;

(7) What the system is doing to correct the violation or situation;

(8) When the water system expects to return to compliance or resolve the situation;

(9) The name, business address, and phone number of the water system

owner, operator, or designee of the public water system as a source of additional information concerning the notice; and

(10) A statement to encourage the notice recipient to distribute the public notice to other persons served, using the standard language under paragraph (d)(3) of this section, where applicable.

(b) *What elements must be included in the public notice for public water systems operating under a variance or exemption?* (1) If a public water system has been granted a variance or an exemption, the public notice must contain:

(i) An explanation of the reasons for the variance or exemption;

(ii) The date on which the variance or exemption was issued;

(iii) A brief status report on the steps the system is taking to install treatment, find alternative sources of water, or otherwise comply with the terms and schedules of the variance or exemption; and

(iv) A notice of any opportunity for public input in the review of the variance or exemption.

(2) If a public water system violates the conditions of a variance or exemption, the public notice must contain the ten elements listed in paragraph (a) of this section.

(c) *How is the public notice to be presented?* (1) Each public notice required by this section:

(i) Must be displayed in a conspicuous way when printed or posted;

(ii) Must not contain overly technical language or very small print;

(iii) Must not be formatted in a way that defeats the purpose of the notice;

(iv) Must not contain language which nullifies the purpose of the notice.

(2) Each public notice required by this section must comply with multilingual requirements, as follows:

(i) For public water systems serving a large proportion of non-English speaking consumers, as determined by the primacy agency, the public notice must contain information in the appropriate language(s) regarding the importance of the notice or contain a telephone number or address where persons served may contact the water system to obtain a translated copy of the notice or to request assistance in the appropriate language.

(ii) In cases where the primacy agency has not determined what constitutes a large proportion of non-English speaking consumers, the public water system must include in the public notice the same information as in paragraph (c)(2)(i) of this section, where appropriate to reach a large proportion of non-English speaking persons served by the water system.

(d) *What standard language must public water systems include in their public notice?* Public water systems are required to include the following standard language in their public notice:

(1) Standard health effects language for MCL or MRDL violations, treatment technique violations, and violations of the condition of a variance or exemption. Public water systems must include in each public notice the health effects language specified in appendix B to this subpart corresponding to each MCL, MRDL, and treatment technique violation listed in appendix A to this subpart, and for each violation of a condition of a variance or exemption.

(2) Standard language for monitoring and testing procedure violations. Public water systems must include the following language in their notice, including the language necessary to fill in the blanks, for all monitoring and testing procedure violations listed in appendix A to this subpart:

> We are required to monitor your drinking water for specific contaminants on a regular basis. Results of regular monitoring are an indicator of whether or not your drinking water meets health standards. During [compliance period], we ''did not monitor or test'' or ''did not complete all monitoring or testing'' for [contaminant(s)], and therefore cannot be sure of the quality of your drinking water during that time.

(3) Standard language to encourage the distribution of the public notice to all persons served. Public water systems must include in their notice the following language (where applicable):

> Please share this information with all the other people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses). You can do this by posting this notice in a public place or distributing copies by hand or mail.

§141.206 Notice to new billing units or new customers.

(a) *What is the requirement for community water systems?* Community water systems must give a copy of the most recent public notice for any continuing violation, the existence of a variance or exemption, or other ongoing situations requiring a public notice to all new billing units or new customers prior to or at the time service begins.

(b) *What is the requirement for non-community water systems?* Non-community water systems must continuously post the public notice in conspicuous locations in order to inform new consumers of any continuing violation, variance or exemption, or other situation requiring a public notice for as long as the violation, variance, exemption, or other situation persists.

§141.207 Special notice of the availability of unregulated contaminant monitoring results.

(a) *When is the special notice to be given?* The owner or operator of a community water system or non-transient, non-community water system required to monitor under §141.40 must notify persons served by the system of the availability of the results of such sampling no later than 12 months after the monitoring results are known.

(b) *What is the form and manner of the special notice?* The form and manner of the public notice must follow the requirements for a Tier 3 public notice prescribed in §§141.204(c), (d)(1), and (d)(3). The notice must also identify a person and provide the telephone number to contact for information on the monitoring results.

§141.208 Special notice for exceedance of the SMCL for fluoride.

(a) *When is the special notice to be given?* Community water systems that exceed the fluoride secondary maximum contaminant level (SMCL) of 2 mg/l as specified in §143.3 (determined by the last single sample taken in accordance with §141.23), but do not exceed the maximum contaminant level (MCL) of 4 mg/l for fluoride (as specified in §141.62), must provide the public notice in paragraph (c) of this section to persons served. Public notice must be provided as soon as practical but no later than 12 months from the day the water system learns of the exceedance. A copy of the notice must also be sent to all new billing units and new customers at the time service begins and to the State public health officer. The public water system must repeat the notice at least annually for as long as the SMCL is exceeded. If the public notice is posted, the notice must remain in place for as long as the SMCL is exceeded, but in no case less than seven days (even if the exceedance is eliminated). On a case-by-case basis, the primacy agency may require an initial notice sooner than 12 months and repeat notices more frequently than annually.

(b) *What is the form and manner of the special notice?* The form and manner of the public notice (including repeat notices) must follow the requirements for a Tier 3 public notice in §141.204(c) and (d)(1) and (d)(3).

(c) *What mandatory language must be contained in the special notice?* The notice must contain the following language, including the language necessary to fill in the blanks:

> This is an alert about your drinking water and a cosmetic dental problem that might affect children under nine years of age. At low levels, fluoride can help prevent cavities, but children drinking water containing more than 2 milligrams per liter (mg/l) of fluoride may develop cosmetic discoloration of their permanent teeth (dental fluorosis). The drinking water provided by your community water system [*name*] has a fluoride concentration of [*insert value*] mg/l.
>
> Dental fluorosis, in its moderate or severe forms, may result in a brown staining and/or pitting of the permanent teeth. This problem occurs only in developing teeth, before they erupt from the gums. Children under nine should be provided with alternative sources of drinking water or water that has been treated to remove the fluoride to avoid the possibility of staining and pitting of their permanent teeth. You may also want to contact your dentist about proper use by young children of fluoride-containing products. Older children and adults may safely drink the water.
>
> Drinking water containing more than 4 mg/L of fluoride (the U.S. Environmental Protection Agency's drinking water standard) can increase your risk of developing bone disease. Your drinking water does not contain more than 4 mg/l of fluoride, but we're required to notify you when we discover that the fluoride levels in your drinking water exceed 2 mg/l because of this cosmetic dental problem.

For more information, please call [name of water system contact] of [name of community water system] at [phone number]. Some home water treatment units are also available to remove fluoride from drinking water. To learn more about available home water treatment units, you may call NSF International at 1–877–8–NSF–HELP."

§141.209 Special notice for nitrate exceedances above MCL by non-community water systems (NCWS), where granted permission by the primacy agency under §141.11(d).

(a) *When is the special notice to be given?* The owner or operator of a non-community water system granted permission by the primacy agency under §141.11(d) to exceed the nitrate MCL must provide notice to persons served according to the requirements for a Tier 1 notice under §141.202(a) and (b).

(b) *What is the form and manner of the special notice?* Non-community water systems granted permission by the primacy agency to exceed the nitrate MCL under §141.11(d) must provide continuous posting of the fact that nitrate levels exceed 10 mg/l and the potential health effects of exposure, according to the requirements for Tier 1 notice delivery under §141.202(c) and the content requirements under §141.205.

§141.210 Notice by primacy agency on behalf of the public water system.

(a) *May the primacy agency give the notice on behalf of the public water system?* The primacy agency may give the notice required by this subpart on behalf of the owner and operator of the public water system if the primacy agency complies with the requirements of this subpart.

(b) *What is the responsibility of the public water system when notice is given by the primacy agency?* The owner or operator of the public water system remains responsible for ensuring that the requirements of this subpart are met.

§141.211 Special notice for repeated failure to conduct monitoring of the source water for *Cryptosporidium* and for failure to determine bin classification or mean *Cryptosporidium* level.

(a) *When is the special notice for repeated failure to monitor to be given?* The owner or operator of a community or non-community water system that is required to monitor source water under §141.701 must notify persons served by the water system that monitoring has not been completed as specified no later than 30 days after the system has failed to collect any 3 months of monitoring as specified in §141.701(c). The notice must be repeated as specified in §141.203(b).

(b) *When is the special notice for failure to determine bin classification or mean Cryptosporidium level to be given?* The owner or operator of a community or non-community water system that is required to determine a bin classification under §141.710, or to determine mean *Cryptosporidium* level under §141.712, must notify persons served by the water system that the determination has not been made as required no later than 30 days after the system has failed report the determination as specified in §141.710(e) or §141.712(a), respectively. The notice must be repeated as specified in §141.203(b). The notice is not required if the system is complying with a State-approved schedule to address the violation.

(c) *What is the form and manner of the special notice?* The form and manner of the public notice must follow the requirements for a Tier 2 public notice prescribed in §141.203(c). The public notice must be presented as required in §141.205(c).

(d) *What mandatory language must be contained in the special notice?* The notice must contain the following language, including the language necessary to fill in the blanks.

(1) The special notice for repeated failure to conduct monitoring must contain the following language:

We are required to monitor the source of your drinking water for *Cryptosporidium*. Results of the monitoring are to be used to determine whether water treatment at the (treatment plant name) is sufficient to adequately remove *Cryptosporidium* from your drinking water. We are required to complete this monitoring and make this determination by (required bin determination date). We "did not monitor or test" or "did not complete all monitoring or testing" on schedule and, therefore, we may not be able to determine by the required date what treatment modifications, if any, must be made to ensure adequate *Cryptosporidium* removal. Missing this deadline may, in turn, jeopardize our ability to have the required treatment modifications, if any, completed by the deadline required, (date).

For more information, please call (name of water system contact) of (name of water system) at (phone number).

(2) The special notice for failure to determine bin classification or mean *Cryptosporidium* level must contain the following language:

We are required to monitor the source of your drinking water for *Cryptosporidium* in order to determine by (date) whether water treatment at the (treatment plant name) is sufficient to adequately remove *Cryptosporidium* from your drinking water. We have not made this determination by the required date. Our failure to do this may jeopardize our ability to have the required treatment modifications, if any, completed by the required deadline of (date). For more information, please call (name of water system contact) of (name of water system) at (phone number).

(3) Each special notice must also include a description of what the system is doing to correct the violation and when the system expects to return to compliance or resolve the situation.

[71 FR 768, Jan. 5, 2006]

APPENDIX A TO SUBPART Q OF PART 141—NPDWR VIOLATIONS AND OTHER SITUATIONS REQUIRING PUBLIC NOTICE[1]

Contaminant	MCL/MRDL/TT violations[2]		Monitoring & testing procedure violations	
	Tier of public notice required	Citation	Tier of public notice required	Citation
I. Violations of National Primary Drinking Water Regulations (NPDWR):[3].				
A. Microbiological Contaminants.				
1.a Total coliform bacteriadagger;	2	141.63(a)	3	141.21(a)–(e).
1.b Total coliform (TT violations resulting from failure to perform assessments or corrective actions, monitoring violations, and reporting violations) ‡	2	141.860(b)(1)	3	141.860(c)(1). 141.860(d)(1).
1.c Seasonal system failure to follow State-approved start-up plan prior to serving water to the public or failure to provide certification to State ‡	2	141.860(b)(2)	3	141.860(d)(3).
2.a Fecal coliform/*E. coli* dagger;	1	141.63(b)	[4]1,3	141.21(e)
2.b *E. coli* (MCL, monitoring, and reporting violations) ‡	1	141.860 (a)	3	141.860(c)(2) 141.860(d)(1). 141.860(d)(2).
2.c *E. coli* (TT violations resulting from failure to perform level 2 Assessments or corrective action) ‡	2	141.860(b)(1)	....	
3. Turbidity MCL	2	141.13(a)	3	141.22
4. Turbidity MCL (average of 2 days' samples >5 NTU)	[5]2, 1	141.13(b)	3	141.22
5. Turbidity (for TT violations resulting from a single exceedance of maximum allowable turbidity level)	[6]2, 1	141.71(a)(2), 141.71(c)(2)(i), 141.73(a)(2), 141.73 (b)(2), 141.73 (c)(2), 141.73(d), 141.173(a)(2), 141.173(b), 141.551(b)	3	141.74(a)(1), 141.74(b)(2), 141.74(c)(1), 141.174, 141.560(a)–(c), 141.561.
6. Surface Water Treatment Rule violations, other than violations resulting from single exceedance of max. allowable turbidity level (TT)	2	141.70–141.73	3	141.74
7. Interim Enhanced Surface Water Treatment Rule violations, other than violations resulting from single exceedance of max. turbidity level (TT)	[7]2	141.170–141.173, 141.500–141.553	3	141.172, 141.174, 141.530–141.544, 141.560–141.564.
8. Filter Backwash Recycling Rule violations	2	141.76(c)	3	141.76(b), (d)
9. Long Term 1 Enhanced Surface Water Treatment Rule violations	2	141.500–141.553	3	141.530–141.544, 141.560–141.564.
10. LT2ESWTR violations	2	141.710–141.720	[22]2, 3	141.701–141.705 and 141.708–141.709.
11. Ground Water Rule violations	2	141.404	3	141.402(h), 141.403(d).
B. Inorganic Chemicals (IOCs)				
1. Antimony	2	141.62(b)	3	141.23(a), (c)

Contaminant	MCL/MRDL/TT violations [2]		Monitoring & testing procedure violations	
	Tier of public notice required	Citation	Tier of public notice required	Citation
2. Arsenic	2	[8] 141.62(b)	3	[11] 141.23(a), (c)
3. Asbestos (fibers >10 μm)	2	141.62(b)	3	141.23(a)–(b)
4. Barium	2	141.62(b)	3	141.23(a), (c)
5. Beryllium	2	141.62(b)	3	141.23(a), (c)
6. Cadmium	2	141.62(b)	3	141.23(a), (c)
7. Chromium (total)	2	141.62(b)	3	141.23(a), (c)
8. Cyanide	2	141.62(b)	3	141.23(a), (c)
9. Fluoride	2	141.62(b)	3	141.23(a), (c)
10. Mercury (inorganic)	2	141.62(b)	3	141.23(a), (c)
11. Nitrate	1	141.62(b)	[12] 1, 3	141.23(a), (d), 141.23(f)(2)
12. Nitrite	1	141.62(b)	[12] 1, 3	141.23(a), (e), 141.23(f)(2)
13. Total Nitrate and Nitrite	1	141.62(b)	3	141.23(a)
14. Selenium	2	141.62(b)	3	141.23(a), (c)
15. Thallium	2	141.62(b)	3	141.23(a), (c)
C. Lead and Copper Rule (Action Level for lead is 0.015 mg/L, for copper is 1.3 mg/L)				
1. Lead and Copper Rule (TT)	2	141.80–141.85	3	141.86–141.89
D. Synthetic Organic Chemicals (SOCs)				
1. 2,4–D	2	141.61(c)	3	141.24(h)
2. 2,4,5–TP (Silvex)	2	141.61(c)	3	141.24(h)
3. Alachlor	2	141.61(c)	3	141.24(h)
4. Atrazine	2	141.61(c)	3	141.24(h)
5. Benzo(a)pyrene (PAHs)	2	141.61(c)	3	141.24(h)
6. Carbofuran	2	141.61(c)	3	141.24(h)
7. Chlordane	2	141.61(c)	3	141.24(h)
8. Dalapon	2	141.61(c)	3	141.24(h)
9. Di (2- ethylhexyl) adipate	2	141.61(c)	3	141.24(h)
10. Di (2- ethylhexyl) phthalate	2	141.61(c)	3	141.24(h)
11. Dibromochloropropane	2	141.61(c)	3	141.24(h)
12. Dinoseb	2	141.61(c)	3	141.24(h)
13. Dioxin (2,3,7,8- TCDD)	2	141.61(c)	3	141.24(h)
14. Diquat	2	141.61(c)	3	141.24(h)
15. Endothall	2	141.61(c)	3	141.24(h)
16. Endrin	2	141.61(c)	3	141.24(h)
17. Ethylene dibromide	2	141.61(c)	3	141.24(h)
18. Glyphosate	2	141.61(c)	3	141.24(h)
19. Heptachlor	2	141.61(c)	3	141.24(h)
20. Heptachlor epoxide	2	141.61(c)	3	141.24(h)
21. Hexachlorobenzene	2	141.61(c)	3	141.24(h)
22. Hexachlorocyclo- pentadiene	2	141.61(c)	3	141.24(h)
23. Lindane	2	141.61(c)	3	141.24(h)
24. Methoxychlor	2	141.61(c)	3	141.24(h)
25. Oxamyl (Vydate)	2	141.61(c)	3	141.24(h)
26. Pentachlorophenol	2	141.61(c)	3	141.24(h)

27. Picloram	2	141.61(c)	3	141.24(h)
28. Polychlorinated biphenyls (PCBs)	2	141.61(c)	3	141.24(h)
29. Simazine	2	141.61(c)	3	141.24(h)
30. Toxaphene	2	141.61(c)	3	141.24(h)
E. Volatile Organic Chemicals (VOCs)				
1. Benzene	2	141.61(a)	3	141.24(f)
2. Carbon tetrachloride	2	141.61(a)	3	141.24(f)
3. Chlorobenzene (monochlorobenzene)	2	141.61(a)	3	141.24(f)
4. o- Dichlorobenzene	2	141.61(a)	3	141.24(f)
5. p- Dichlorobenzene	2	141.61(a)	3	141.24(f)
6. 1,2- Dichloroethane	2	141.61(a)	3	141.24(f)
7. 1,1- Dichloroethylene	2	141.61(a)	3	141.24(f)
8. cis- 1,2- Dichloroethylene	2	141.61(a)	3	141.24(f)
9. trans- 1,2- Dichloroethylene	2	141.61(a)	3	141.24(f)
10. Dichloromethane	2	141.61(a)	3	141.24(f)
11. 1,2- Dichloropropane	2	141.61(a)	3	141.24(f)
12. Ethylbenzene	2	141.61(a)	3	141.24(f)
13. Styrene	2	141.61(a)	3	141.24(f)
14. Tetrachloroethylene	2	141.61(a)	3	141.24(f)
15. Toluene	2	141.61(a)	3	141.24(f)
16. 1,2,4- Trichlorobenzene	2	141.61(a)	3	141.24(f)
17. 1,1,1- Trichloroethane	2	141.61(a)	3	141.24(f)
18. 1,1,2- Trichloroethane	2	141.61(a)	3	141.24(f)
19. Trichloroethylene	2	141.61(a)	3	141.24(f)
20. Vinyl chloride	2	141.61(a)	3	141.24(f)
21. Xylenes (total)	2	141.61(a)	3	141.24(f)
F. Radioactive Contaminants				
1. Beta/photon emitters	2	141.66(d)	3	141.25(a) 141.26(b)
2. Alpha emitters	2	141.66(c)	3	141.25(a) 141.26(a)
3. Combined radium (226 and 228)	2	141.66(b)	3	141.25(a) 141.26(a)
4. Uranium	[9] 2	141.66(e)	[10] 3	141.25(a) 141.26(a)
G. Disinfection Byproducts (DBPs), Byproduct Precursors, Disinfectant Residuals. Where disinfection is used in the treatment of drinking water, disinfectants combine with organic and inorganic matter present in water to form chemicals called disinfection byproducts (DBPs). EPA sets standards for controlling the levels of disinfectants and DBPs in drinking water, including trihalomethanes (THMs) and haloacetic acids (HAAs).[13]				
1. Total trihalomethanes (TTHMs)	2	[14] 141.64(b)	3	141.132(a)–(b), 141.600–141.605, 141.620–141.629
2. Haloacetic Acids (HAA5)	2	141.64(b)	3	141.132(a)–(b), 141.600–141.605, 141.620–141.629
3. Bromate	2	141.64(a)	3	141.132(a)–(b)
4. Chlorite	2	141.64(a)	3	141.132(a)–(b)
5. Chlorine (MRDL)	2	141.65(a)	3	141.132(a), (c)
6. Chloramine (MRDL)	2	141.65(a)	3	141.132(a), (c)

Contaminant	MCL/MRDL/TT violations [2]		Monitoring & testing procedure violations	
	Tier of public notice required	Citation	Tier of public notice required	Citation
7. Chlorine dioxide (MRDL), where any 2 consecutive daily samples at entrance to distribution system only are above MRDL	2	141.65(a), 141.133(c)(3)	2[15], 3	141.132(a), (c), 141.133(c)(2)
8. Chlorine dioxide (MRDL), where sample(s) in distribution system the next day are also above MRDL	[16] 1	141.65(a), 141.133(c)(3)	1	141.132(a), (c), 141.133(c)(2)
9. Control of DBP precursors—TOC (TT)	2	141.135(a)–(b)	3	141.132(a), (d)
10. Bench marking and disinfection profiling	N/A	N/A	3	141.172 141.530–141.544.
11. Development of monitoring plan	N/A	N/A	3	141.132(f)
H. Other Treatment Techniques				
1. Acrylamide (TT)	2	141.111	N/A	N/A
2. Epichlorohydrin (TT)	2	141.111	N/A	N/A
II. Unregulated Contaminant Monitoring: [17]				
A. Unregulated contaminants	N/A	N/A	3	141.40
B. Nickel	N/A	N/A	3	141.23(c), (k)
III. Public Notification for Variances and Exemptions:				
A. Operation under a variance or exemption	3	[18] 1415, 1416,	N/A	N/A
B. Violation of conditions of a variance or exemption	2	1415, 1416, [19] 142.307	N/A	N/A
IV. Other Situations Requiring Public Notification:				
A. Fluoride secondary maximum contaminant level (SMCL) exceedance	3	143.3	N/A	N/A
B. Exceedance of nitrate MCL for non-community systems, as allowed by primacy agency	1	141.11(d)	N/A	N/A
C. Availability of unregulated contaminant monitoring data	3	141.40	N/A	N/A
D. Waterborne disease outbreak	1	141.2, 141.71(c)(2)(ii)	N/A	N/A
E. Other waterborne emergency [20]	1	N/A	N/A	N/A
F. Source Water Sample Positive for GWR Fecal indicators: E. coli, enterococci, or coliphage	1	141.402(g)	N/A	N/A
G. Other situations as determined by primacy agency	[21] 1, 2, 3	N/A	N/A	N/A

APPENDIX A—ENDNOTES

† Until March 31, 2016.

‡ Beginning April 1, 2016.

1. Violations and other situations not listed in this table (e.g., failure to prepare Consumer Confidence Reports), do not require notice, unless otherwise determined by the primacy agency. Primacy agencies may, at their option, also require a more stringent public notice tier (e.g., Tier 1 instead of Tier 2 or Tier 2 instead of Tier 3) for specific violations and situations listed in this Appendix, as authorized under §141.202(a) and §141.203(a).

2. MCL—Maximum contaminant level, MRDL—Maximum residual disinfectant level, TT—Treatment technique

3. The term Violations of National Primary Drinking Water Regulations (NPDWR) is used here to include violations of MCL, MRDL, treatment technique, monitoring, and testing procedure requirements.

4. Failure to test for fecal coliform or E. coli is a Tier 1 violation if testing is not done after any repeat sample tests positive for coliform. All other total coliform monitoring and testing procedure violations are Tier 3.

5. Systems that violate the turbidity MCL of 5 NTU based on an average of measurements over two consecutive days must consult with the primacy agency within 24 hours after learning of the violation. Based on this consultation, the primacy agency may subsequently decide to elevate the violation to Tier 1. If a system is unable to make contact with the primacy agency in the 24-hour period, the violation is automatically elevated to Tier 1.

6. Systems with treatment technique violations involving a single exceedance of a maximum turbidity limit under the Surface Water Treatment Rule (SWTR), the Interim Enhanced Surface Water Treatment Rule (IESWTR), or the Long Term 1 Enhanced Surface Water Treatment Rule (LT1ESWTR) are required to consult with the primacy agency within 24 hours after learning of the violation. Based on this consultation, the primacy agency may subsequently decide to elevate the violation to Tier 1. If a system is unable to make contact with the primacy agency in the 24-hourperiod, the violation is automatically elevated to Tier 1.

7. Most of the requirements of the Interim Enhanced Surface Water Treatment Rule (63 *FR* 69477) (§§141.170–141.171, 141.173–141.174) become effective January 1, 2002 for Subpart H systems (surface water systems and ground water systems under the direct influence of surface water) serving at least 10,000 persons. However, §141.172 has some requirements that become effective as early as April 16, 1999. The Surface Water Treatment Rule remains in effect for systems serving at least 10,000 persons even after 2002; the Interim Enhanced Surface Water Treatment Rule adds additional requirements and does not in many cases supercede the SWTR.

8. The arsenic MCL citations are effective January 23, 2006. Until then, the citations are §141.11(b) and §141.23(n).

9. The uranium MCL Tier 2 violation citations are effective December 8, 2003 for all community water systems.

10. The uranium Tier 3 violation citations are effective December 8, 2000 for all community water systems.

11. The arsenic Tier 3 violation MCL citations are effective January 23, 2006. Until then, the citations are §141.23(a), (I).

12. Failure to take a confirmation sample within 24 hours for nitrate or nitrite after an initial sample exceeds the MCL is a Tier 1 violation. Other monitoring violations for nitrate are Tier 3.

13. Subpart H community and non-transient non-communitysystems serving ≥10,000 must comply with new DBP MCLs, disinfectant MRDLs, and related monitoring requirements beginning January 1, 2002. All other community and non-transient non-community systems must meet the MCLs and MRDLs beginning January 1, 2004. Subpart H transient non-community systems serving 10,000 or more persons and using chlorine dioxide as a disinfectant or oxidant must comply with the chlorine dioxide MRDL beginning January 1, 2002. Subpart H transient non-community systems serving fewer than 10,000 persons and using only ground water not under the direct influence of surface water and using chlorine dioxide as a disinfectant or oxidant must comply with the chlorine dioxide MRDL beginning January 1, 2004.

14. §§141.64(b)(1) 141.132(a)–(b) apply until §§141.620–141.630 take effect under the schedule in §141.620(c).

15. Failure to monitor for chlorine dioxide at the entrance to the distribution system the day after exceeding the MRDL at the entrance to the distribution system is a Tier 2 violation.

16. If any daily sample taken at the entrance to the distribution system exceeds the MRDL for chlorine dioxide and one or more samples taken in the distribution system the next day exceed the MRDL, Tier 1 notification is required. Failure to take the required samples in the distribution system after the MRDL is exceeded at the entry point also triggers Tier 1 notification.

17. Some water systems must monitor for certain unregulated contaminants listed in §141.40.

18. This citation refers to §§1415 and 1416 of the Safe Drinking Water Act. §§1415 and 1416 require that "a schedule prescribed. . . for a public water system granted a variance [or exemption] shall require compliance by the system. . ."

19. In addition to §§1415 and 1416 of the Safe Drinking Water Act, 40 CFR 142.307 specifies the items and schedule milestones that must be included in a variance for small systems.

20. Other waterborne emergencies require a Tier 1 public notice under §141.202(a) for situations that do not meet the definition of a waterborne disease outbreak given in 40 CFR 141.2 but that still have the potential to have serious adverse effects on health as a result of short-term exposure. These could include outbreaks not related to treatment deficiencies, as well as situations that have the potential to cause outbreaks, such as failures or significant interruption in water treatment processes, natural disasters that disrupt the water supply or distribution system, chemical spills, or unexpected loading of possible pathogens into the source water.

21. Primacy agencies may place other situations in any tier they believe appropriate, based on threat to public health.

22. Failure to collect three or more samples for *Cryptosporidium* analysis is a Tier 2 violation requiring special notice as specified in §141.211. All other monitoring and testing procedure violations are Tier 3.

[65 FR 26035, May 4, 2000, as amended at 65 FR 76750, Dec. 7, 2000; 66 FR 7065, Jan. 22, 2001; 66 FR 31104, June 8, 2001; 67 FR 1836, Jan. 14, 2002; 69 FR 38856, June 29, 2004; 71 FR 483, Jan. 4, 2006; 71 FR 768, Jan. 5, 2006; 71 FR 65652, Nov. 8, 2006; 78 FR 10350, Feb. 13, 2013; 79 FR 10669, Feb. 26, 2014]

APPENDIX B TO SUBPART Q OF PART 141—STANDARD HEALTH EFFECTS LANGUAGE FOR PUBLIC NOTIFICATION

Contaminant	MCLG[1] mg/L	MCL[2] mg/L	Standard health effects language for public notification
National Primary Drinking Water Regulations (NPDWR) A. Microbiological Contaminants			
1a. Total coliform †	Zero	See footnote [3]	Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially-harmful, bacteria may be present. Coliforms were found in more samples than allowed and this was a warning of potential problems.
1b. Fecal coliform/*E. coli* †	Zero	Zero	Fecal coliforms and *E. coli* are bacteria whose presence indicates that the water may be contaminated with human or animal wastes. Microbes in these wastes can cause short-term effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a special health risk for infants, young children, some of the elderly, and people with severely compromised immune systems.
1c. Fecal indicators (GWR):	Zero	TT	Fecal indicators are microbes whose presence indicates that the water may be contaminated with human or animal wastes. Microbes in these wastes can cause short-term health effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a special health risk for infants, young children, some of the elderly, and people with severely compromised immune systems.
i. E. coli	None	TT	
ii. enterococci	None	TT	
iii. coliphage			
1d. Ground Water Rule (GWR) TT violations	None	TT	Inadequately treated or inadequately protected water may contain disease-causing organisms. These organisms can cause symptoms such as diarrhea, nausea, cramps, and associated headaches.
1e. Subpart Y Coliform Assessment and/or Corrective Action Violations ‡.	N/A	TT	Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially harmful, waterborne pathogens may be present or that a potential pathway exists through which contamination may enter the drinking water distribution system. We found coliforms indicating the need to look for potential problems in water treatment or distribution. When this occurs, we are required to conduct assessments to identify problems and to correct any problems that are found. [THE SYSTEM MUST USE THE FOLLOWING APPLICABLE SENTENCES.] We failed to conduct the required assessment. We failed to correct all identified sanitary defects that were found during the assessment(s).
1f. Subpart Y *E.coli* Assessment and/or Corrective Action Violations ‡.	N/A	TT	*E. coli* are bacteria whose presence indicates that the water may be contaminated with human or animal wastes. Human pathogens in these wastes can cause short-term effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a greater health risk for infants, young children, the elderly, and people with severely compromised immune systems. We violated the standard for *E. coli,* indicating the need to look for potential problems in water treatment or distribution. When this occurs, we are required to conduct a detailed assessment to identify problems and to correct any problems that are found. [THE SYSTEM MUST USE THE FOLLOWING APPLICABLE SENTENCES.] We failed to conduct the required assessment. We failed to correct all identified sanitary defects that were found during the assessment that we conducted.

Contaminant	MCLG[1] mg/L	MCL[2] mg/L	Standard health effects language for public notification
1g. *E. coli* ‡	Zero	In compliance unless one of the following conditions occurs: (1) The system has an *E. coli*-positive repeat sample following a total coliform-positive routine sample. (2) The system has a total coliform-positive repeat sample following an *E. coli*-positive routine sample. (3) The system fails to take all required repeat samples following an *E. coli*-positive routine sample. (4) The system fails to test for *E. coli* when any repeat sample tests positive for total coliform.	*E. coli* are bacteria whose presence indicates that the water may be contaminated with human or animal wastes. Human pathogens in these wastes can cause short-term effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a greater health risk for infants, young children, the elderly, and people with severely compromised immune systems.
1h. Subpart Y Seasonal System TT Violations ‡	N/A	TT	When this violation includes the failure to monitor for total coliforms or *E. coli* prior to serving water to the public, the mandatory language found at 141.205(d)(2) must be used. When this violation includes failure to complete other actions, the appropriate elements found in 141.205(a) to describe the violation must be used.
2a. Turbidity (MCL)[4]	None	1 NTU[5]/5 NTU	Turbidity has no health effects. However, turbidity can interfere with disinfection and provide a medium for microbial growth. Turbidity may indicate the presence of disease-causing organisms. These organisms include bacteria, viruses, and parasites that can cause symptoms such as nausea, cramps, diarrhea and associated headaches.
2b. Turbidity (SWTR TT)[6]	None	TT[7]	Turbidity has no health effects. However, turbidity can interfere with disinfection and provide a medium for microbial growth. Turbidity may indicate the presence of disease-causing organisms. These organisms include bacteria, viruses, and parasites that can cause symptoms such as nausea, cramps, diarrhea and associated headaches.

2c. Turbidity (IESWTR TT and LT1ESWTR TT)[8]	None	TT	Turbidity has no health effects. However, turbidity can interfere with disinfection and provide a medium for microbial growth. Turbidity may indicate the presence of disease- causing organisms. These organisms include bacteria, viruses, and parasites that can cause symptoms such as nausea, cramps, diarrhea and associated headaches.
B. Surface Water Treatment Rule (SWTR), Interim Enhanced Surface Water Treatment Rule (IESWTR), Long Term 1 Enhanced Surface Water Treatment Rule (LT1ESWTR) and the Filter Backwash Recycling Rule (FBRR) violations			
3. Giardia lamblia (SWTR/IESWTR/LT1ESWTR) 4. Viruses (SWTR/IESWTR/LT1ESWTR). 5. Heterotrophic plate count (HPC) bacteria[9] (SWTR/IESWTR/LT1ESWTR). 6. Legionella (SWTR/IESWTR/LT1ESWTR). 7. Cryptosporidium (IESWTR/FBRR/LT1ESWTR).	Zero	TT[10]	Inadequately treated water may contain disease- causing organisms. These organisms include bacteria, viruses, and parasites which can cause symptoms such as nausea, cramps, diarrhea, and associated headaches.
C. Inorganic Chemicals (IOCs)			
8. Antimony	0.006	0.006	Some people who drink water containing antimony well in excess of the MCL over many years could experience increases in blood cholesterol and decreases in blood sugar.
9. Arsenic[11]	0	0.010	Some people who drink water containing arsenic in excess of the MCL over many years could experience skin damage or problems with their circulatory system, and may have an increased risk of getting cancer.
10. Asbestos (10 µm)	7 MFL[12]	7 MFL	Some people who drink water containing asbestos in excess of the MCL over many years may have an increased risk of developing benign intestinal polyps.
11. Barium	2	2	Some people who drink water containing barium in excess of the MCL over many years could experience an increase in their blood pressure.
12. Beryllium	0.004	0.004	Some people who drink water containing beryllium well in excess of the MCL over many years could develop intestinal lesions.
13. Cadmium	0.005	0.005	Some people who drink water containing cadmium in excess of the MCL over many years could experience kidney damage.
14. Chromium (total)	0.1	0.1	Some people who use water containing chromium well in excess of the MCL over many years could experience allergic dermatitis.
15. Cyanide	0.2	0.2	Some people who drink water containing cyanide well in excess of the MCL over many years could experience nerve damage or problems with their thyroid.
16. Fluoride	4.0	4.0	Some people who drink water containing fluoride in excess of the MCL over many years could get bone disease, including pain and tenderness of the bones. Fluoride in drinking water at half the MCL or more may cause mottling of children's teeth, usually in children less than nine years old. Mottling, also known as dental fluorosis, may include brown staining and/or pitting of the teeth, and occurs only in developing teeth before they erupt from the gums.
17. Mercury (inorganic)	0.002	0.002	Some people who drink water containing inorganic mercury well in excess of the MCL over many years could experience kidney damage.
18. Nitrate	10	10	Infants below the age of six months who drink water containing nitrate in excess of the MCL could become seriously ill and, if untreated, may die. Symptoms include shortness of breath and blue baby syndrome.
19. Nitrite	1	1	Infants below the age of six months who drink water containing nitrite in excess of the MCL could become seriously ill and, if untreated, may die. Symptoms include shortness of breath and blue baby syndrome.

Contaminant	MCLG[1] mg/L	MCL[2] mg/L	Standard health effects language for public notification
20. Total Nitrate and Nitrite	10	10	Infants below the age of six months who drink water containing nitrate and nitrite in excess of the MCL could become seriously ill and, if untreated, may die. Symptoms include shortness of breath and blue baby syndrome.
21. Selenium	0.05	0.05	Selenium is an essential nutrient. However, some people who drink water containing selenium in excess of the MCL over many years could experience hair or fingernail losses, numbness in fingers or toes, or problems with their circulation.
22. Thallium	0.0005	0.002	Some people who drink water containing thallium in excess of the MCL over many years could experience hair loss, changes in their blood, or problems with their kidneys, intestines, or liver.
D. Lead and Copper Rule			
23. Lead	Zero	TT[13]	Infants and children who drink water containing lead in excess of the action level could experience delays in their physical or mental development. Children could show slight deficits in attention span and learning abilities. Adults who drink this water over many years could develop kidney problems or high blood pressure.
24. Copper	1.3	TT[14]	Copper is an essential nutrient, but some people who drink water containing copper in excess of the action level over a relatively short amount of time could experience gastrointestinal distress. Some people who drink water containing copper in excess of the action level over many years could suffer liver or kidney damage. People with Wilson's Disease should consult their personal doctor.
E. Synthetic Organic Chemicals (SOCs)			
25. 2,4–D	0.07	0.07	Some people who drink water containing the weed killer 2,4–D well in excess of the MCL over many years could experience problems with their kidneys, liver, or adrenal glands.
26. 2,4,5–TP (Silvex)	0.05	0.05	Some people who drink water containing silvex in excess of the MCL over many years could experience liver problems.
27. Alachlor	Zero	0.002	Some people who drink water containing alachlor in excess of the MCL over many years could have problems with their eyes, liver, kidneys, or spleen, or experience anemia, and may have an increased risk of getting cancer.
28. Atrazine	0.003	0.003	Some people who drink water containing atrazine well in excess of the MCL over many years could experience problems with their cardiovascular system or reproductive difficulties.
29. Benzo(a)pyrene (PAHs)	Zero	0.0002	Some people who drink water containing benzo(a)pyrene in excess of the MCL over many years may experience reproductive difficulties and may have an increased risk of getting cancer.
30. Carbofuran	0.04	0.04	Some people who drink water containing carbofuran in excess of the MCL over many years could experience problems with their blood, or nervous or reproductive systems.
31. Chlordane	Zero	0.002	Some people who drink water containing chlordane in excess of the MCL over many years could experience problems with their liver or nervous system, and may have an increased risk of getting cancer.
32. Dalapon	0.2	0.2	Some people who drink water containing dalapon well in excess of the MCL over many years could experience minor kidney changes.
33. Di(2-ethylhexyl) adipate	0.4	0.4	Some people who drink water containing di(2-ethylhexyl) adipate well in excess of the MCL over many years could experience toxic effects such as weight loss, liver enlargement or possible reproductive difficulties.

34. Di(2- ethylhexyl) phthalate	Zero	0.006	Some people who drink water containing di(2- ethylhexyl) phthalate well in excess of the MCL over many years may have problems with their liver, or experience reproductive difficulties, and may have an increased risk of getting cancer.
35. Dibromochloropropane (DBCP)	Zero	0.0002	Some people who drink water containing DBCP in excess of the MCL over many years could experience reproductive difficulties and may have an increased risk of getting cancer.
36. Dinoseb	0.007	0.007	Some people who drink water containing dinoseb well in excess of the MCL over many years could experience reproductive difficulties.
37. Dioxin (2,3,7,8- TCDD)	Zero	3×10¥8	Some people who drink water containing dioxin in excess of the MCL over many years could experience reproductive difficulties and may have an increased risk of getting cancer.
38. Diquat	0.02	0.02	Some people who drink water containing diquat in excess of the MCL over many years could get cataracts.
39. Endothall	0.1	0.1	Some people who drink water containing endothall in excess of the MCL over many years could experience problems with their stomach or intestines.
40. Endrin	0.002	0.002	Some people who drink water containing endrin in excess of the MCL over many years could experience liver problems.
41. Ethylene dibromide	Zero	0.00005	Some people who drink water containing ethylene dibromide in excess of the MCL over many years could experience problems with their liver, stomach, reproductive system, or kidneys, and may have an increased risk of getting cancer.
42. Glyphosate	0.7	0.7	Some people who drink water containing glyphosate in excess of the MCL over many years could experience problems with their kidneys or reproductive difficulties.
43. Heptachlor	Zero	0.0004	Some people who drink water containing heptachlor in excess of the MCL over many years could experience liver damage and may have an increased risk of getting cancer.
44. Heptachlor epoxide	Zero	0.0002	Some people who drink water containing heptachlor epoxide in excess of the MCL over many years could experience liver damage, and may have an increased risk of getting cancer.
45. Hexachlorobenzene	Zero	0.001	Some people who drink water containing hexachlorobenzene in excess of the MCL over many years could experience problems with their liver or kidneys, or adverse reproductive effects, and may have an increased risk of getting cancer.
46. Hexachlorocyclo- pentadiene	0.05	0.05	Some people who drink water containing hexachlorocyclopentadiene well in excess of the MCL over many years could experience problems with their kidneys or stomach.
47. Lindane	0.0002	0.0002	Some people who drink water containing lindane in excess of the MCL over many years could experience problems with their kidneys or liver.
48. Methoxychlor	0.04	0.04	Some people who drink water containing methoxychlor in excess of the MCL over many years could experience reproductive difficulties.
49. Oxamyl (Vydate)	0.2	0.2	Some people who drink water containing oxamyl in excess of the MCL over many years could experience slight nervous system effects.
50. Pentachlorophenol	Zero	0.001	Some people who drink water containing pentachlorophenol in excess of the MCL over many years could experience problems with their liver or kidneys, and may have an increased risk of getting cancer.
51. Picloram	0.5	0.5	Some people who drink water containing picloram in excess of the MCL over many years could experience problems with their liver.
52. Polychlorinated biphenyls (PCBs)	Zero	0.0005	Some people who drink water containing PCBs in excess of the MCL over many years could experience changes in their skin, problems with their thymus gland, immune deficiencies, or reproductive or nervous system difficulties, and may have an increased risk of getting cancer.
53. Simazine	0.004	0.004	Some people who drink water containing simazine in excess of the MCL over many years could experience problems with their blood.
54. Toxaphene	Zero	0.003	Some people who drink water containing toxaphene in excess of the MCL over many years could have problems with their kidneys, liver, or thyroid, and may have an increased risk of getting cancer.

Contaminant	MCLG[1] mg/L	MCL[2] mg/L	Standard health effects language for public notification
F. Volatile Organic Chemicals (VOCs)			
55. Benzene	Zero	0.005	Some people who drink water containing benzene in excess of the MCL over many years could experience anemia or a decrease in blood platelets, and may have an increased risk of getting cancer.
56. Carbon tetrachloride	Zero	0.005	Some people who drink water containing carbon tetrachloride in excess of the MCL over many years could experience problems with their liver and may have an increased risk of getting cancer.
57. Chlorobenzene (monochloro-benzene)	0.1	0.1	Some people who drink water containing chlorobenzene in excess of the MCL over many years could experience problems with their liver or kidneys.
58. *o*-Dichlorobenzene	0.6	0.6	Some people who drink water containing o-dichlorobenzene well in excess of the MCL over many years could experience problems with their liver, kidneys, or circulatory systems.
59. *p*-Dichlorobenzene	0.075	0.075	Some people who drink water containing p-dichlorobenzene in excess of the MCL over many years could experience anemia, damage to their liver, kidneys, or spleen, or changes in their blood.
60. 1,2-Dichloroethane	Zero	0.005	Some people who drink water containing 1,2-dichloroethane in excess of the MCL over many years may have an increased risk of getting cancer.
61. 1,1-Dichloroethylene	0.007	0.007	Some people who drink water containing 1,1-dichloroethylene in excess of the MCL over many years could experience problems with their liver.
62. *cis*-1,2-Dichloroethylene	0.07	0.07	Some people who drink water containing cis-1,2-dichloroethylenein excess of the MCL over many years could experience problems with their liver.
63. *trans*-1,2-Dichloroethylene	0.1	0.1	Some people who drink water containing trans-1,2-dichloroethylenewell in excess of the MCL over many years could experience problems with their liver.
64. Dichloromethane	Zero	0.005	Some people who drink water containing dichloromethane in excess of the MCL over many years could have liver problems and may have an increased risk of getting cancer.
65. 1,2-Dichloropropane	Zero	0.005	Some people who drink water containing 1,2-dichloropropane in excess of the MCL over many years may have an increased risk of getting cancer.
66. Ethylbenzene	0.7	0.7	Some people who drink water containing ethylbenzene well in excess of the MCL over many years could experience problems with their liver or kidneys.
67. Styrene	0.1	0.1	Some people who drink water containing styrene well in excess of the MCL over many years could have problems with their liver, kidneys, or circulatory system.
68. Tetrachloroethylene	Zero	0.005	Some people who drink water containing tetrachloroethylene in excess of the MCL over many years could have problems with their liver, and may have an increased risk of getting cancer.
69. Toluene	1	1	Some people who drink water containing toluene well in excess of the MCL over many years could have problems with their nervous system, kidneys, or liver.
70. 1,2,4-Trichlorobenzene	0.07	0.07	Some people who drink water containing 1,2,4-trichlorobenzene well in excess of the MCL over many years could experience changes in their adrenal glands.
71. 1,1,1-Trichloroethane	0.2	0.2	Some people who drink water containing 1,1,1-trichloroethane in excess of the MCL over many years could experience problems with their liver, nervous system, or circulatory system.
72. 1,1,2-Trichloroethane	0.003	0.005	Some people who drink water containing 1,1,2-trichloroethane well in excess of the MCL over many years could have problems with their liver, kidneys, or immune systems.
73. Trichloroethylene	Zero	0.005	Some people who drink water containing trichloroethylene in excess of the MCL over many years could experience problems with their liver and may have an increased risk of getting cancer.
74. Vinyl chloride	Zero	0.002	Some people who drink water containing vinyl chloride in excess of the MCL over many years may have an increased risk of getting cancer.

75. Xylenes (total)	10	10	Some people who drink water containing xylenes in excess of the MCL over many years could experience damage to their nervous system.
G. Radioactive Contaminants			
76. Beta/photon emitters	Zero	4 mrem/yr[15]	Certain minerals are radioactive and may emit forms of radiation known as photons and beta radiation. Some people who drink water containing beta and photon emitters in excess of the MCL over many years may have an increased risk of getting cancer.
77. Alpha emitters	Zero	17 pCi/L[17]	Certain minerals are radioactive and may emit a form of radiation known as alpha radiation. Some people who drink water containing alpha emitters in excess of the MCL over many years may have an increased risk of getting cancer.
78. Combined radium (226 & 228)	Zero	5 pCi/L	Some people who drink water containing radium 226 or 228 in excess of the MCL over many years may have an increased risk of getting cancer.
79. Uranium[16]	Zero	30 µg/L	Some people who drink water containing uranium in excess of the MCL over many years may have an increased risk of getting cancer and kidney toxicity.
H. Disinfection Byproducts (DBPs), Byproduct Precursors, and Disinfectant Residuals: Where disinfection is used in the treatment of drinking water, disinfectants combine with organic and inorganic matter present in water to form chemicals called disinfection byproducts (DBPs). EPA sets standards for controlling the levels of disinfectants and DBPs in drinking water, including trihalomethanes (THMs) and haloacetic acids (HAAs)[18]			
80. Total trihalomethanes (TTHMs)	N/A	0.080[19][20]	Some people who drink water containing trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous system, and may have an increased risk of getting cancer.
81. Haloacetic Acids (HAA)	N/A	0.060[21]	Some people who drink water containing haloacetic acids in excess of the MCL over many years may have an increased risk of getting cancer.
82. Bromate	Zero	0.010	Some people who drink water containing bromate in excess of the MCL over many years may have an increased risk of getting cancer.
83. Chlorite	0.08	1.0	Some infants and young children who drink water containing chlorite in excess of the MCL could experience nervous system effects. Similar effects may occur in fetuses of pregnant women who drink water containing chlorite in excess of the MCL. Some people may experience anemia.
84. Chlorine	4 (MRDLG)[22]	4.0 (MRDL)[23]	Some people who use water containing chlorine well in excess of the MRDL could experience irritating effects to their eyes and nose. Some people who drink water containing chlorine well in excess of the MRDL could experience stomach discomfort.
85. Chloramines	4 (MRDLG)	4.0 (MRDL)	Some people who use water containing chloramines well in excess of the MRDL could experience irritating effects to their eyes and nose. Some people who drink water containing chloramines well in excess of the MRDL could experience stomach discomfort or anemia.
86a. Chlorine dioxide, where any 2 consecutive daily samples taken at the entrance to the distribution system are above the MRDL.	0.8 (MRDLG)	0.8 (MRDL)	Some infants and young children who drink water containing chlorine dioxide in excess of the MRDL could experience nervous system effects. Similar effects may occur in fetuses of pregnant women who drink water containing chlorine dioxide in excess of the MRDL. Some people may experience anemia. *Add for public notification only:* The chlorine dioxide violations reported today are the result of exceedances at the treatment facility only, not within the distribution system which delivers water to consumers. Continued compliance with chlorine dioxide levels within the distribution system minimizes the potential risk of these violations to consumers.
86b. Chlorine dioxide, where one or more distribution system samples are above the MRDL.	0.8 (MRDLG)	0.8 (MRDL)	Some infants and young children who drink water containing chlorine dioxide in excess of the MRDL could experience nervous system effects. Similar effects may occur in fetuses of pregnant women who drink water containing chlorine dioxide in excess of the MRDL. Some people may experience anemia.

Contaminant	MCLG [1] mg/L	MCL [2] mg/L	Standard health effects language for public notification
			Add for public notification only: The chlorine dioxide violations reported today include exceedances of the EPA standard within the distribution system which delivers water to consumers. Violations of the chlorine dioxide standard within the distribution system may harm human health based on short-term exposures. Certain groups, including fetuses, infants, and young children, may be especially susceptible to nervous system effects from excessive chlorine dioxide exposure.
87. Control of DBP precursors (TOC)	None	TT	Total organic carbon (TOC) has no health effects. However, total organic carbon provides a medium for the formation of disinfection byproducts. These byproducts include trihalomethanes (THMs) and haloacetic acids (HAAs). Drinking water containing these byproducts in excess of the MCL may lead to adverse health effects, liver or kidney problems, or nervous system effects, and may lead to an increased risk of getting cancer.
I. Other Treatment Techniques			
88. Acrylamide	Zero	TT	Some people who drink water containing high levels of acrylamide over a long period of time could have problems with their nervous system or blood, and may have an increased risk of getting cancer.
89. Epichlorohydrin	Zero	TT	Some people who drink water containing high levels of epichlorohydrin over a long period of time could experience stomach problems, and may have an increased risk of getting cancer.

APPENDIX B—ENDNOTES

† Until March 31, 2016.

‡ Beginning April 1, 2016.

1. MCLG—Maximum contaminant level goal
2. MCL—Maximum contaminant level
3. For water systems analyzing at least 40 samples per month, no more than 5.0 percent of the monthly samples may be positive for total coliforms. For systems analyzing fewer than 40 samples per month, no more than one sample per month may be positive for total coliforms.
4. There are various regulations that set turbidity standards for different types of systems, including 40 CFR 141.13, and the 1989 Surface Water Treatment Rule, the 1998 Interim Enhanced Surface Water Treatment Rule and the 2002 Long Term 1 Enhanced Surface Water Treatment Rule. The MCL for the monthly turbidity average is 1 NTU; the MCL for the 2-day average is 5 NTU for systems that are required to filter but have not yet installed filtration (40 CFR 141.13).
5. NTU—Nephelometric turbidity unit
6. There are various regulations that set turbidity standards for different types of systems, including 40 CFR 141.13, and the 1989 Surface Water Treatment Rule, the 1998 Interim Enhanced Surface Water Treatment Rule and the 2001 Long Term 1 Enhanced Surface Water Treatment Rule. Systems subject to the Surface Water Treatment Rule (both filtered and unfiltered) may not exceed 5 NTU. In addition, in filtered systems, 95 percent of samples each month must not exceed 0.5 NTU in systems using conventional or direct filtration and must not exceed 1 NTU in systems using slow sand or diatomaceous earth filtration or other filtration technologies approved by the primacy agency.
7. TT—Treatment technique
8. There are various regulations that set turbidity standards for different types of systems, including 40 CFR 141.13, the 1989 Surface Water Treatment Rule (SWTR), the 1998 Interim Enhanced Surface Water Treatment Rule (IESWTR) and the 2002 Long Term 1 Enhanced Surface Water Treatment Rule (LT1ESWTR). For systems subject to the IESWTR (systems serving at least 10,000 people, using surface water or ground water under the direct influence of surface water), that use conventional filtration or direct filtration, after January 1, 2002, the turbidity level of a system's combined filter effluent may not exceed 0.3 NTU in at least 95 percent of monthly measurements, and the turbidity level of a system's combined filter effluent must not exceed 1 NTU at any time. Systems subject to the IESWTR using technologies other than conventional, direct, slow sand, or diatomaceous earth filtration must meet turbidity limits set by the primacy agency. For systems subject to the LT1ESWTR (systems serving fewer than 10,000 people, using surface water or ground water under the direct influence of surface water) that use conventional filtration or direct filtration, after January 1, 2005, the turbidity level of a system's combined filter effluent may not exceed 0.3 NTU in at least 95 percent of monthly measurements, and the turbidity level of a system's combined filter effluent must not exceed 1 NTU at any time. Systems subject to the LT1ESWTR using technologies other than conventional, direct, slow sand, or diatomaceous earth filtration must meet turbidity limits set by the primacy agency.
9. The bacteria detected by heterotrophic plate count (HPC) are not necessarily harmful. HPC is simply an alternative method of determining disinfectant residual levels. The number of such bacteria is an indicator of whether there is enough disinfectant in the distribution system.
10. SWTR, IESWTR, and LT1ESWTR treatment technique violations that involve turbidity exceedances may use the health effects language for turbidity instead.
11. These arsenic values are effective January 23, 2006. Until then, the MCL is 0.05 mg/L and there is no MCLG.
12. Millions fibers per liter.
13. Action Level = 0.015 mg/L
14. Action Level = 1.3 mg/L
15. Millirems per years
16. The uranium MCL is effective December 8, 2003 for all community water systems.
17. Picocuries per liter
18. Surface water systems and ground water systems under the direct influence of surface water are regulated under subpart H of 40 CFR 141. Subpart H community and non-transient non-community systems serving ≥10,000 must comply with subpart L DBP MCLs and disinfectant maximum residual disinfectant levels (MRDLs) beginning January 1, 2002. All other community and non-transient non-community systems must comply with subpart L DBP MCLs and disinfectant MRDLs beginning January 1, 2004. Subpart H transient non-communitysystems serving ≥10,000 that use chlorine dioxide as a disinfectant or oxidant must comply with the chlorine dioxide MRDL beginning January 1, 2002. All other transient non-community systems that use chlorine dioxide as a disinfectant or oxidant must comply with the chlorine dioxide MRDL beginning January 1, 2004.
19. Community and non-transientnon-community systems must comply with subpart V TTHM and HAA5 MCLs of 0.080 mg/L and 0.060 mg/L, respectively (with compliance calculated as a locational running annual average) on the schedule in §141.620.
20. The MCL for total trihalomethanes is the sum of the concentrations of the individual trihalomethanes.

21. The MCL for haloacetic acids is the sum of the concentrations of the individual haloacetic acids.

22. MRDLG—Maximum residual disinfectant level goal.

23. MRDL—Maximum residual disinfectant level.

[65 FR 26043, May 4, 2000; 65 FR 38629, June 21, 2000; 65 FR 40521, 40522, June 30, 2000, as amended at 65 FR 76751, Dec. 7, 2000; 66 FR 7065, Jan. 22, 2001; 66 FR 31104, June 8, 2001; 67 FR 1838, Jan. 14, 2002; 67 FR 70857, Nov. 27, 2002; 68 FR 14507, Mar. 25, 2003; 69 FR 38856, June 29, 2004; 71 FR 483, Jan. 4, 2006; 71 FR 65653, Nov. 8, 2006; 78 FR 10351, Feb. 13, 2013]

APPENDIX C TO SUBPART Q OF PART 141—LIST OF ACRONYMS USED IN PUBLIC NOTIFICATION REGULATION

CCR	Consumer Confidence Report
CWS	Community Water System
DBP	Disinfection Byproduct
EPA	Environmental Protection Agency
GWR	Ground Water Rule
HPC	Heterotrophic Plate Count
IESWTR	Interim Enhanced Surface Water Treatment Rule
IOC	Inorganic Chemical
LCR	Lead and Copper Rule
MCL	Maximum Contaminant Level
MCLG	Maximum Contaminant Level Goal
MRDL	Maximum Residual Disinfectant Level
MRDLG	Maximum Residual Disinfectant Level Goal
NCWS	Non-CommunityWater System
NPDWR	National Primary Drinking Water Regulation
NTNCWS	Non-Transient Non-Community Water System
NTU	Nephelometric Turbidity Unit
OGWDW	Office of Ground Water and Drinking Water
OW	Office of Water
PN	Public Notification
PWS	Public Water System
SDWA	Safe Drinking Water Act
SMCL	Secondary Maximum Contaminant Level
SOC	Synthetic Organic Chemical
SWTR	Surface Water Treatment Rule
TCR	Total Coliform Rule
TT	Treatment Technique
TWS	Transient Non-CommunityWater System
VOC	Volatile Organic Chemical

[65 FR 26035, May 4, 2000, as amended at 71 FR 65653, Nov. 8, 2006]

Subpart R [Reserved]

Subpart S—Ground Water Rule

SOURCE: 71 FR 65653, Nov. 8, 2006, unless otherwise noted.

§141.400 General requirements and applicability.

(a) *Scope of this subpart.* The requirements of this subpart S constitute National Primary Drinking Water Regulations.

(b) *Applicability.* This subpart applies to all public water systems that use ground water except that it does not apply to public water systems that combine all of their ground water with surface water or with ground water under the direct influence of surface water prior to treatment under subpart H. For the purposes of this subpart, ''ground water system'' is defined as any public water system meeting this applicability statement, including consecutive systems receiving finished ground water.

(c) *General requirements.* Systems subject to this subpart must comply with the following requirements:

(1) Sanitary survey information requirements for all ground water systems as described in §141.401.

(2) Microbial source water monitoring requirements for ground water systems that do not treat all of their ground water to at least 99.99 percent (4-log) treatment of viruses (using inactivation, removal, or a State-approved combination of 4-logvirus inactivation and removal) before or at the first customer as described in §141.402.

(3) Treatment technique requirements, described in §141.403, that apply to ground water systems that have fecally contaminated source waters, as determined by source water monitoring conducted under §141.402, or that have significant deficiencies that are identified by the State or that are identified by EPA under SDWA section 1445. A ground water system with fecally contaminated source water or with significant deficiencies subject to the treatment technique requirements of this subpart must implement one or more of the following corrective action options: correct all significant deficiencies; provide an alternate source of water; eliminate the source of contamination; or provide treatment that

reliably achieves at least 4-log treatment of viruses (using inactivation, removal, or a State-approved combination of 4-log virus inactivation and removal) before or at the first customer.

(4) Ground water systems that provide at least 4-log treatment of viruses (using inactivation, removal, or a State-approved combination of 4-log virus inactivation and removal) before or at the first customer are required to conduct compliance monitoring to demonstrate treatment effectiveness, as described in §141.403(b).

(5) If requested by the State, ground water systems must provide the State with any existing information that will enable the State to perform a hydrogeologic sensitivity assessment. For the purposes of this subpart, ''hydrogeologic sensitivity assessment'' is a determination of whether ground water systems obtain water from hydrogeologically sensitive settings.

(d) *Compliance date*. Ground water systems must comply, unless otherwise noted, with the requirements of this subpart beginning December 1, 2009.

§141.401 Sanitary surveys for ground water systems.

(a) Ground water systems must provide the State, at the State's request, any existing information that will enable the State to conduct a sanitary survey.

(b) For the purposes of this subpart, a ''sanitary survey,'' as conducted by the State, includes but is not limited to, an onsite review of the water source(s) (identifying sources of contamination by using results of source water assessments or other relevant information where available), facilities, equipment, operation, maintenance, and monitoring compliance of a public water system to evaluate the adequacy of the system, its sources and operations and the distribution of safe drinking water.

(c) The sanitary survey must include an evaluation of the applicable components listed in paragraphs (c)(1) through (8) of this section:

(1) Source,

(2) Treatment,

(3) Distribution system,

(4) Finished water storage,

(5) Pumps, pump facilities, and controls,

(6) Monitoring, reporting, and data verification,

(7) System management and operation, and

(8) Operator compliance with State requirements.

§141.402 Ground water source microbial monitoring and analytical methods.

(a) *Triggered source water monitoring*—

(1) *General requirements*. A ground water system must conduct triggered source water monitoring if the conditions identified in paragraphs (a)(1)(i) and either (a)(1)(ii) or (a)(1)(iii) of this section exist.

(i) The system does not provide at least 4-log treatment of viruses (using inactivation, removal, or a State-approved combination of 4-log virus inactivation and removal) before or at the first customer for each ground water source; and either

(ii) The system is notified that a sample collected under §141.21(a) is total coliform-positive and the sample is not invalidated under §141.21(c) until March 31, 2016, or

(iii) The system is notified that a sample collected under §§141.854 through 141.857 is total coliform-positive and the sample is not invalidated under §141.853(c) beginning April 1, 2016.

(2) *Sampling requirements*. A ground water system must collect, within 24 hours of notification of the total coliform-positive sample, at least one ground water source sample from each ground water source in use at the time the total coliform-positive sample was collected under §141.21(a) until March 31, 2016, or collected under §§141.854 through 141.857 beginning April 1, 2016, except as provided in paragraph (a)(2)(ii) of this section.

(i) The State may extend the 24-hour time limit on a case-by-case basis if the system cannot collect the ground water source water sample within 24 hours due to circumstances beyond its control. In the case of an extension, the State must specify how much time the system has to collect the sample.

(ii) If approved by the State, systems with more than one ground water source may meet the requirements of this paragraph (a)(2) by sampling a representative ground water source or sources. If directed by the State, systems must submit for State approval a triggered source water monitoring plan that identifies one or more ground water sources that are representative of each monitoring site in the system's sample siting plan under §141.21(a) until March 31, 2016, or under §141.853 beginning April 1, 2016, and that the system intends to use for representative sampling under this paragraph.

(iii) Until March 31, 2016, a ground water system serving 1,000 or fewer people may use a repeat sample collected from a ground water source to meet both the requirements of §141.21(b) and to satisfy the monitoring requirements of paragraph (a)(2) of this section for that ground water source only if the State approves the use of *E. coli* as a fecal indicator for source water monitoring under this paragraph (a). If the repeat sample collected from the ground water source is *E. coli*-positive, the system must comply with paragraph (a)(3) of this section.

(iv) Beginning April 1, 2016, a ground water system serving 1,000 or fewer people may use a repeat sample collected from a ground water source to meet both the requirements of subpart Y and to satisfy the monitoring requirements of paragraph (a)(2) of this section for that ground water source only if the State approves the use of *E. coli* as a fecal indicator for source water monitoring under this paragraph (a) and approves the use of a single sample for meeting both the triggered source water monitoring requirements in this paragraph (a) and the repeat monitoring requirements in §141.858. If the repeat sample collected from the ground water source is *E. coli*- positive, the system must comply with paragraph (a)(3) of this section.

(3) *Additional requirements.* If the State does not require corrective action under §141.403(a)(2) for a fecal indicator-positivesource water sample collected under paragraph (a)(2) of this section that is not invalidated under paragraph (d) of this section, the system must collect five additional source water samples from the same source within 24 hours of being notified of the fecal indicator-positivesample.

(4) *Consecutive and wholesale systems.* (i) In addition to the other requirements of this paragraph (a), a consecutive ground water system that has a total coliform-positive sample collected under §141.21(a) until March 31, 2016, or under §§141.854 through 141.857 beginning April 1, 2016, must notify the wholesale system(s) within 24 hours of being notified of the total coliform-positive sample.

(ii) In addition to the other requirements of this paragraph (a), a wholesale ground water system must comply with paragraphs (a)(4)(ii)(A) and (a)(4)(ii)(B) of this section.

(A) A wholesale ground water system that receives notice from a consecutive system it serves that a sample collected under §141.21(a) until March 31, 2016, or collected under §§141.854 through 141.857 beginning April 1, 2016, is total coliform-positive must, within 24 hours of being notified, collect a sample from its ground water source(s) under paragraph (a)(2) of this section and analyze it for a fecal indicator under paragraph (c) of this section.

(B) If the sample collected under paragraph (a)(4)(ii)(A) of this section is fecal indicator-positive, the wholesale ground water system must notify all consecutive systems served by that ground water source of the fecal indicator source water positive within 24 hours of being notified of the ground water source sample monitoring result and must meet the requirements of paragraph (a)(3) of this section.

(5) *Exceptions to the triggered source water monitoring requirements.* A ground water system is not required to comply with the source water monitoring requirements of paragraph (a) of this section if either of the following conditions exists:

(i) The State determines, and documents in writing, that the total coliform-positive sample collected under §141.21(a) until March 31, 2016, or under §§141.854 through 141.857 beginning April 1, 2016, is caused by a distribution system deficiency; or

(ii) The total coliform-positive sample collected under §141.21(a) until March 31, 2016, or under §§141.854 through 141.857 beginning April 1, 2016, is collected at a location that meets State criteria for distribution system conditions that will cause total coliform-positive samples.

(b) *Assessment source water monitoring.* If directed by the State, ground water systems must conduct assessment source water monitoring that meets State-determined requirements for such monitoring. A ground water system conducting assessment source water monitoring may use a triggered source water sample collected under paragraph (a)(2) of this section to meet the requirements of paragraph (b) of this section. State-determined assessment source water monitoring requirements may include:

(1) Collection of a total of 12 ground water source samples that represent each month the system provides ground water to the public,

(2) Collection of samples from each well unless the system obtains written State approval to conduct monitoring at one or more wells within the ground water system that are representative of multiple wells used by that system and that draw water from the same hydrogeologic setting,

(3) Collection of a standard sample volume of at least 100 mL for fecal indicator analysis regardless of the fecal indicator or analytical method used,

(4) Analysis of all ground water source samples using one of the analytical methods listed in the in paragraph (c)(2) of this section for the presence of *E. coli*, enterococci, or coliphage,

(5) Collection of ground water source samples at a location prior to any treatment of the ground water source unless the State approves a sampling location after treatment, and

(6) Collection of ground water source samples at the well itself unless the system's configuration does not allow for sampling at the well itself and the State approves an alternate sampling location that is representative of the water quality of that well.

(c) *Analytical methods.* (1) A ground water system subject to the source water monitoring requirements of paragraph (a) of this section must collect a standard sample volume of at least 100 mL for fecal indicator analysis regardless of the fecal indicator or analytical method used.

(2) A ground water system must analyze all ground water source samples collected under paragraph (a) of this section using one of the analytical methods listed in the following table in paragraph (c)(2) of this section or one of the alternative methods listed in appendix A to subpart C of this part for the presence of *E. coli*, enterococci, or coliphage:

ANALYTICAL METHODS FOR SOURCE WATER MONITORING

Fecal indicator [1]	Methodology	Method citation
E. coli	Colilert [3]	9223 B.[2]
	Colisure [3]	9223 B.[2]
	Membrane Filter Method with MI Agar	EPA Method 1604.[4]
	m-ColiBlue24 Test [5]	
	E*Colite Test [6]	
	EC–MUG [7]	9221 F.[2]
	NA–MUG [7]	9222 G.[2]
Enterococci	Multiple-Tube Technique	9230B.[2]
	Membrane Filter Technique	9230C.[2]
	Membrane Filter Technique	EPA Method 1600.[8]
	Enterolert [9]	
Coliphage	Two-Step Enrichment Presence-Absence Procedure.	EPA Method 1601.[10]
	Single Agar Layer Procedure	EPA Method 1602.[11]

Analyses must be conducted in accordance with the documents listed below. The Director of the Federal Register approves the incorporation by reference of the documents listed in footnotes 2–11 in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. Copies of the documents may be obtained from the sources listed below. Copies may be inspected at EPA's Drinking Water Docket, EPA West, 1301 Constitution Avenue, NW., EPA West, Room B102, Washington DC 20460 (Telephone: 202–566–2426); or at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202–741–6030, or go to: *http://www.archives.gov/federal* | *register/code* | *of* | *federal* | *regulations/ibr* | *locations.html.*

[1] The time from sample collection to initiation of analysis may not exceed 30 hours. The ground water system is encouraged but is not required to hold samples below 10 °C during transit.

[2] Methods are described in Standard Methods for the Examination of Water and Wastewater 20th edition (1998) and copies may be obtained from the American Public Health Association, 1015 Fifteenth Street, NW., Washington, DC 20005–2605.

[3] Medium is available through IDEXX Laboratories, Inc., One IDEXX Drive, Westbrook, Maine 04092.

[4] EPA Method 1604: Total Coliforms and *Escherichia coli* in Water by Membrane Filtration Using a Simultaneous Detection Technique (MI Medium); September 2002, EPA 821–R–02–024. Method is available at *http://www.epa.gov/nerlcwww/1604sp02.pdf* or from EPA's Water Resource Center (RC–4100T), 1200 Pennsylvania Avenue, NW., Washington, DC 20460.

[5] A description of the m-ColiBlue24 Test, ''Total Coliforms and *E. coli* Membrane Filtration Method with m-ColiBlue24® Broth,'' Method No. 10029 Revision 2, August 17, 1999, is available from Hach Company, 100 Dayton Ave., Ames, IA 50010 or from EPA's Water Resource Center (RC–4100T), 1200 Pennsylvania Avenue, NW., Washington, DC 20460.

[6] A description of the E*Colite Test, ''Charm E*Colite Presence/Absence Test for Detection and Identification of Coliform Bacteria and *Escherichia coli* in Drinking Water, January 9, 1998, is available from Charm Sciences, Inc., 659 Andover St., Lawrence, MA 01843–1032 or from EPA's Water Resource Center (RC–4100T), 1200 Pennsylvania Avenue, NW., Washington, DC 20460.

[7] EC–MUG (Method 9221F) or NA–MUG (Method 9222G) can be used for *E. coli* testing step as described in §141.21(f)(6)(i) or (ii) after use of Standard Methods 9221 B, 9221 D, 9222 B, or 9222 C.

[8] EPA Method 1600: Enterococci in Water by Membrane Filtration Using membrane-Enterococcus Indoxyl–b–D–Glucoside Agar (mEI) EPA 821–R–02–022 (September 2002) is an approved variation of Standard Method 9230C. The method is available at *http://www.epa.gov/nerlcwww/1600sp02.pdf* or from EPA's Water Resource Center (RC–4100T), 1200 Pennsylvania Avenue, NW., Washington, DC 20460. The holding time and temperature for ground water samples are specified in footnote 1 above, rather than as specified in Section 8 of EPA Method 1600.

[9] Medium is available through IDEXX Laboratories, Inc., One IDEXX Drive, Westbrook, Maine 04092. Preparation and use of the medium is set forth in the article ''Evaluation of Enterolert for Enumeration of Enterococci in Recreational Waters,'' by Budnick, G.E., Howard, R.T., and Mayo, D.R., 1996, Applied and Environmental Microbiology, 62:3881–3884.

[10] EPA Method 1601: Male-specific (F+) and Somatic Coliphage in Water by Two-step Enrichment Procedure; April 2001, EPA 821–R–01–030. Method is available at *http://www.epa.gov/nerlcwww/1601ap01.pdf* or from EPA's Water Resource Center (RC–4100T), 1200 Pennsylvania Avenue, NW., Washington, DC 20460.

[11] EPA Method 1602: Male-specific (F+) and Somatic Coliphage in Water by Single Agar Layer (SAL) Procedure; April 2001, EPA 821–R–01–029. Method is available at *http://www.epa.gov/nerlcwww/1602ap01.pdf* or from EPA's Water Resource Center (RC–4100T), 1200 Pennsylvania Avenue, NW., Washington, DC 20460.

(d) *Invalidation of a fecal indicator-positive ground water source sample.* (1) A ground water system may obtain State invalidation of a fecal indicator-positive ground water source sample collected under paragraph (a) of this section only under the conditions specified in paragraphs (d)(1)(i) and (ii) of this section.

(i) The system provides the State with written notice from the laboratory that improper sample analysis occurred; or

(ii) The State determines and documents in writing that there is substantial evidence that a fecal indicator-positive ground water source sample is not related to source water quality.

(2) If the State invalidates a fecal indicator-positive ground water source sample, the ground water system must collect another source water sample under paragraph (a) of this section within 24 hours of being notified by the State of its invalidation decision and have it analyzed for the same fecal indicator using the analytical methods in paragraph (c) of this section. The State may extend the 24-hour time limit on a case-by-case basis if the system cannot collect the source water sample within 24 hours due to circumstances beyond its control. In the case of an extension, the State must specify how much time the system has to collect the sample.

(e) *Sampling location.* (1) Any ground water source sample required under paragraph (a) of this section must be collected at a location prior to any treatment of the ground water source unless the State approves a sampling location after treatment.

(2) If the system's configuration does not allow for sampling at the well itself, the system may collect a sample at a State-approved location to meet the requirements of paragraph (a) of this section if the sample is representative of the water quality of that well.

(f) *New sources.* If directed by the State, a ground water system that places a new ground water source into service after November 30, 2009, must conduct assessment source water monitoring under paragraph (b) of this section. If directed by the State, the system must begin monitoring before the ground water source is used to provide water to the public.

(g) *Public notification.* A ground water system with a ground water source sample collected under paragraph (a) or (b) of this section that is fecal indicator-positive and that is not invalidated under paragraph (d) of this section, including consecutive systems served by the ground water source, must conduct public notification under §141.202.

(h) *Monitoring violations.* Failure to meet the requirements of paragraphs (a)–(f) of this section is a monitoring violation and requires the ground water system to provide public notification under §141.204.

[71 FR 65653, Nov. 8, 2006; 71 FR 67427, Nov. 21, 2006, as amended at 74 FR 30958, June 29, 2009; 78 FR 10353, Feb. 13, 2013]

§141.403 Treatment technique requirements for ground water systems.

(a) *Ground water systems with significant deficiencies or source water fecal contamination.* (1) The treatment technique requirements of this section must be met by ground water systems when a significant deficiency is identified or when a ground water source sample collected under §141.402(a)(3) is fecal indicator-positive.

(2) If directed by the State, a ground water system with a ground water source sample collected under §141.402(a)(2), §141.402(a)(4), or §141.402(b) that is fecal indicator-positive must comply with the treatment technique requirements of this section.

(3) When a significant deficiency is identified at a Subpart H public water system that uses both ground water and surface water or ground water under the direct influence of surface water, the system must comply with provisions of this paragraph except in cases where the State determines that the significant deficiency is in a portion of the distribution system that is served solely by surface water or ground water under the direct influence of surface water.

(4) Unless the State directs the ground water system to implement a specific corrective action, the ground water system must consult with the State regarding the appropriate corrective action within 30 days of receiving written notice from the State of a significant deficiency, written notice from a laboratory that a ground water source sample collected under §141.402(a)(3) was found to be fecal indicator-positive, or direction from the State that a fecal indicator'positive collected under §141.402(a)(2), §141.402(a)(4), or §141.402(b) requires corrective action. For the purposes of this subpart, significant deficiencies include, but are not limited to, defects in design, operation, or maintenance, or a failure or malfunction of the sources, treatment, storage, or distribution system that the State determines to be causing, or have potential for causing, the introduction of contamination into the water delivered to consumers.

(5) Within 120 days (or earlier if directed by the State) of receiving written notification from the State of a significant deficiency, written notice from a laboratory that a ground water source sample collected under §141.402(a)(3) was found to be fecal indicator-positive, or direction from the State that a fecal indicator-positive sample collected under §141.402(a)(2), §141.402(a)(4), or §141.402(b) requires corrective action, the ground water system must either:

(i) Have completed corrective action in accordance with applicable State plan review processes or other State guidance or direction, if any, including State-specifiedinterim measures; or

(ii) Be in compliance with a State-approved corrective action plan and schedule subject to the conditions specified in paragraphs (a)(5)(ii)(A) and (a)(5)(ii)(B) of this section.

(A) Any subsequent modifications to a State-approved corrective action plan and schedule must also be approved by the State.

(B) If the State specifies interim measures for protection of the public health pending State approval of the corrective action plan and schedule or pending completion of the corrective action plan, the system must comply with these interim measures as well as with any schedule specified by the State.

(6) *Corrective action alternatives.* Ground water systems that meet the conditions of paragraph (a)(1) or (a)(2) of this section must implement one or more of the following corrective action alternatives:

(i) Correct all significant deficiencies;

(ii) Provide an alternate source of water;

(iii) Eliminate the source of contamination; or

(iv) Provide treatment that reliably achieves at least 4-log treatment of viruses (using inactivation, removal, or a State-approved combination of 4-log virus inactivation and removal) before or at the first customer for the ground water source.

(7) *Special notice to the public of significant deficiencies or source water fecal contamination.* (i) In addition to the applicable public notification requirements of §141.202, a community ground water system that receives notice from

the State of a significant deficiency or notification of a fecal indicator-positive ground water source sample that is not invalidated by the State under §141.402(d) must inform the public served by the water system under §141.153(h)(6) of the fecal indicator-positive source sample or of any significant deficiency that has not been corrected. The system must continue to inform the public annually until the significant deficiency is corrected or the fecal contamination in the ground water source is determined by the State to be corrected under paragraph (a)(5) of this section.

(ii) In addition to the applicable public notification requirements of §141.202, a non-community ground water system that receives notice from the State of a significant deficiency must inform the public served by the water system in a manner approved by the State of any significant deficiency that has not been corrected within 12 months of being notified by the State, or earlier if directed by the State. The system must continue to inform the public annually until the significant deficiency is corrected. The information must include:

(A) The nature of the significant deficiency and the date the significant deficiency was identified by the State;

(B) The State-approved plan and schedule for correction of the significant deficiency, including interim measures, progress to date, and any interim measures completed; and

(C) For systems with a large proportion of non-English speaking consumers, as determined by the State, information in the appropriate language(s) regarding the importance of the notice or a telephone number or address where consumers may contact the system to obtain a translated copy of the notice or assistance in the appropriate language.

(iii) If directed by the State, a non-community water system with significant deficiencies that have been corrected must inform its customers of the significant deficiencies, how the deficiencies were corrected, and the dates of correction under paragraph (a)(7)(ii) of this section.

(b) *Compliance monitoring*—(1) *Existing ground water sources.* A ground water system that is not required to meet the source water monitoring requirements of this subpart for any ground water source because it provides at least 4-log treatment of viruses (using inactivation, removal, or a State-approved combination of 4-log virus inactivation and removal) before or at the first customer for any ground water source before December 1, 2009, must notify the State in writing that it provides at least 4-log treatment of viruses (using inactivation, removal, or a State-approved combination of 4-log virus inactivation and removal) before or at the first customer for the specified ground water source and begin compliance monitoring in accordance with paragraph (b)(3) of this section by December 1, 2009. Notification to the State must include engineering, operational, or other information that the State requests to evaluate the submission. If the system subsequently discontinues 4-log treatment of viruses (using inactivation, removal, or a State-approved combination of 4-log virus inactivation and removal) before or at the first customer for a ground water source, the system must conduct ground water source monitoring as required under §141.402.

(2) *New ground water sources.* A ground water system that places a ground water source in service after November 30, 2009, that is not required to meet the source water monitoring requirements of this subpart because the system provides at least 4-log treatment of viruses (using inactivation, removal, or a State-approved combination of 4-log virus inactivation and removal) before or at the first customer for the ground water source must comply with the requirements of paragraphs (b)(2)(i), (b)(2)(ii) and (b)(2)(iii) of this section.

(i) The system must notify the State in writing that it provides at least 4-log treatment of viruses (using inactivation, removal, or a State-approved combination of 4-log virus inactivation and removal) before or at the first customer for the ground water source. Notification to the State must include engineering, operational, or other information that the State requests to evaluate the submission.

(ii) The system must conduct compliance monitoring as required under §141.403(b)(3) of this subpart within 30 days of placing the source in service.

(iii) The system must conduct ground water source monitoring under §141.402 if the system subsequently discontinues 4-log treatment of viruses (using inactivation, removal, or a State-approved combination of 4-log virus inactivation and removal) before or at the first customer for the ground water source.

(3) *Monitoring requirements.* A ground water system subject to the requirements of paragraphs (a), (b)(1) or (b)(2) of this section must monitor the effectiveness and reliability of treatment for that ground water source before or at the first customer as follows:

(i) *Chemical disinfection*—(A) *Ground water systems serving greater than 3,300 people.* A ground water system that serves greater than 3,300 people must continuously monitor the residual disinfectant concentration using analytical methods specified in §141.74(a)(2) at a location approved by the State and must record the lowest residual disinfectant concentration each day that water from the ground water source is served to the public. The ground water system must maintain the State-determined residual disinfectant concentration every day the ground water system serves water from the ground water source to the public. If there is a failure in the continuous monitoring equipment, the ground water system must conduct grab sampling every four hours until the continuous monitoring equipment is returned to service. The system must resume continuous residual disinfectant monitoring within 14 days.

(B) *Ground water systems serving 3,300 or fewer people.* A ground water system that serves 3,300 or fewer people must monitor the residual disinfectant concentration using analytical methods specified in §141.74(a)(2) at a location approved by the State and record the residual disinfection concentration each day that water from the ground water source is served to the public. The ground water system must maintain the State-determined residual disinfectant concentration every day the ground water system serves water from the ground water source to the public. The ground water system must take a daily grab sample during the hour of peak flow or at another time specified by the State. If any daily grab sample measurement falls below the State-determined residual disinfectant concentration, the ground water system must take follow-up samples every four hours until the residual disinfectant concentration is restored to the State-determined level. Alternatively, a ground water system that serves 3,300 or fewer people may monitor continuously and meet the requirements of paragraph (b)(3)(i)(A) of this section.

(ii) *Membrane filtration.* A ground water system that uses membrane filtration to meet the requirements of this subpart must monitor the membrane filtration process in accordance with all State-specified monitoring requirements and must operate the membrane filtration in accordance with all State-specified compliance requirements. A ground water system that uses membrane filtration is in compliance with the requirement to achieve at least 4-log removal of viruses when:

(A) The membrane has an absolute molecular weight cut-off (MWCO), or an alternate parameter that describes the exclusion characteristics of the membrane, that can reliably achieve at least 4-log removal of viruses;

(B) The membrane process is operated in accordance with State-specified compliance requirements; and

(C) The integrity of the membrane is intact.

(iii) *Alternative treatment.* A ground water system that uses a State-approved alternative treatment to meet the requirements of this subpart by providing at least 4-log treatment of viruses (using inactivation, removal, or a State-approved combination of 4-log virus inactivation and removal) before or at the first customer must:

(A) Monitor the alternative treatment in accordance with all State-specified monitoring requirements; and

(B) Operate the alternative treatment in accordance with all compliance requirements that the State determines to be necessary to achieve at least 4-log treatment of viruses.

(c) *Discontinuing treatment.* A ground water system may discontinue 4-log treatment of viruses (using inactivation, removal, or a State-approved combination of 4-log virus inactivation and removal) before or at the first customer for a ground water source if the State determines and documents in writing that 4-log treatment of viruses is no longer necessary for that ground water source. A system that discontinues 4-log treatment of viruses is subject to the source water monitoring and analytical methods requirements of §141.402 of this subpart.

(d) Failure to meet the monitoring requirements of paragraph (b) of this section is a monitoring violation and requires the ground water system to provide public notification under §141.204.

§141.404 Treatment technique violations for ground water systems.

(a) A ground water system with a significant deficiency is in violation of the treatment technique requirement if, within 120 days (or earlier if directed by the State) of receiving written notice from the State of the significant deficiency, the system:

(1) Does not complete corrective action in accordance with any applicable State plan review processes or other State guidance and direction, including State specified interim actions and measures, or

(2) Is not in compliance with a State-approved corrective action plan and schedule.

(b) Unless the State invalidates a fecal indicator-positive ground water source sample under §141.402(d), a ground water system is in violation of the treatment technique requirement if, within 120 days (or earlier if directed by the State) of meeting the conditions of §141.403(a)(1) or §141.403(a)(2), the system:

(1) Does not complete corrective action in accordance with any applicable State plan review processes or other State guidance and direction, including State-specified interim measures, or

(2) Is not in compliance with a State-approved corrective action plan and schedule.

(c) A ground water system subject to the requirements of §141.403(b)(3) that fails to maintain at least 4-log treatment of viruses (using inactivation, removal, or a State-approved combination of 4-log virus inactivation and removal) before or at the first customer for a ground water source is in violation of the treatment technique requirement if the failure is not corrected within four hours of determining the system is not maintaining at least 4-log treatment of viruses before or at the first customer.

(d) Ground water system must give public notification under §141.203 for the treatment technique violations specified in paragraphs (a), (b) and (c) of this section.

§141.405 Reporting and recordkeeping for ground water systems.

(a) *Reporting.* In addition to the requirements of §141.31, a ground water system regulated under this subpart must provide the following information to the State:

(1) A ground water system conducting compliance monitoring under §141.403(b) must notify the State any time the system fails to meet any State-specified requirements including, but not limited to, minimum residual disinfectant concentration, membrane operating criteria or membrane integrity, and alternative treatment operating criteria, if operation in accordance with the criteria or requirements is not restored within four hours. The ground water system must notify the State as soon as possible, but in no case later than the end of the next business day.

(2) After completing any corrective action under §141.403(a), a ground water system must notify the State within 30 days of completion of the corrective action.

(3) If a ground water system subject to the requirements of §141.402(a) does not conduct source water monitoring under §141.402(a)(5)(ii), the system must provide documentation to the State within 30 days of the total coliform positive sample that it met the State criteria.

(b) *Recordkeeping.* In addition to the requirements of §141.33, a ground water system regulated under this subpart must maintain the following information in its records:

(1) Documentation of corrective actions. Documentation shall be kept for a period of not less than ten years.

(2) Documentation of notice to the public as required under §141.403(a)(7). Documentation shall be kept for a period of not less than three years.

(3) Records of decisions under §141.402(a)(5)(ii) and records of invalidation of fecal indicator-positive ground water source samples under §141.402(d). Documentation shall be kept for a period of not less than five years.

(4) For consecutive systems, documentation of notification to the wholesale system(s) of total coliform-positive samples that are not invalidated under §141.21(c) until March 31, 2016, or under §141.853 beginning April 1, 2016. Documentation shall be kept for a period of not less than five years.

(5) For systems, including wholesale systems, that are required to perform compliance monitoring under §141.403(b):

(i) Records of the State-specified minimum disinfectant residual. Documentation shall be kept for a period of not less than ten years.

(ii) Records of the lowest daily residual disinfectant concentration and records of the date and duration of any failure to maintain the State-prescribed minimum residual disinfectant concentration for a period of more than four hours. Documentation shall be kept for a period of not less than five years.

(iii) Records of State-specified compliance requirements for membrane filtration and of parameters specified by the State for State-approved alternative treatment and records of the date and duration of any failure to meet the membrane operating, membrane integrity, or alternative treatment operating requirements for more than four hours. Documentation shall be kept for a period of not less than five years.

[71 FR 65653, Nov. 8, 2006, as amended at 78 FR 10353, Feb. 13, 2013]

Subpart T—Enhanced Filtration and Disinfection—Systems Serving Fewer Than 10,000 People

SOURCE: 67 FR 1839, Jan. 14, 2002, unless otherwise noted.

GENERAL REQUIREMENTS

§141.500 General requirements.

The requirements of this subpart constitute national primary drinking water regulations. These regulations establish requirements for filtration and disinfection that are in addition to criteria under which filtration and disinfection are required under subpart H of this part. The regulations in this subpart establish or extend treatment technique requirements in lieu of maximum contaminant levels for the following contaminants: *Giardia lamblia*, viruses, heterotrophic plate count bacteria, *Legionella*, *Cryptosporidium* and turbidity. The treatment technique requirements consist of installing and properly operating water treatment processes which reliably achieve:

(a) At least 99 percent (2 log) removal of *Cryptosporidium* between a point where the raw water is not subject to recontamination by surface water runoff and a point downstream before or at the first customer for filtered systems, or *Cryptosporidium* control under the watershed control plan for unfiltered systems; and

(b) Compliance with the profiling and benchmark requirements in §§141.530 through 141.544.

§141.501 Who is subject to the requirements of subpart T?

You are subject to these requirements if your system:

(a) Is a public water system;

(b) Uses surface water or GWUDI as a source; and

(c) Serves fewer than 10,000 persons.

§141.502 When must my system comply with these requirements?

You must comply with these requirements in this subpart beginning January 1, 2005, except where otherwise noted.

[69 FR 38856, June 29, 2004]

§141.503 What does subpart T require?

There are seven requirements of this subpart, and you must comply with all requirements that are applicable to your system. These requirements are:

(a) You must cover any finished water reservoir that you began to construct on or after March 15, 2002 as described in §§141.510 and 141.511;

(b) If your system is an unfiltered system, you must comply with the updated watershed control requirements described in §§141.520–141.522;

(c) If your system is a community or non-transient non-community water systems you must develop a disinfection profile as described in §§141.530–141.536;

(d) If your system is considering making a significant change to its disinfection practices, you must develop a disinfection benchmark and consult with the State for approval of the change as described in §§141.540–141.544;

(e) If your system is a filtered system, you must comply with the combined filter effluent requirements as described in §§141.550–141.553;

(f) If your system is a filtered system that uses conventional or direct filtration, you must comply with the individual filter turbidity requirements as described in §§141.560–141.564; and

(g) You must comply with the applicable reporting and recordkeeping requirements as described in §§141.570 and 141.571.

FINISHED WATER RESERVOIRS

§141.510 Is my system subject to the new finished water reservoir requirements?

All subpart H systems which serve fewer than 10,000 are subject to this requirement.

§141.511 What is required of new finished water reservoirs?

If your system begins construction of a finished water reservoir on or after March 15, 2002 the reservoir must be covered. Finished water reservoirs for which your system began construction prior to March 15, 2002 are not subject to this requirement.

ADDITIONAL WATERSHED CONTROL REQUIREMENTS FOR UNFILTERED SYSTEMS

§141.520 Is my system subject to the updated watershed control requirements?

If you are a subpart H system serving fewer than 10,000 persons which does not provide filtration, you must continue to comply with all of the filtration avoidance criteria in §141.71, as well as the additional watershed control requirements in §141.521.

§141.521 What updated watershed control requirements must my unfiltered system implement to continue to avoid filtration?

Your system must take any additional steps necessary to minimize the potential for contamination by *Cryptosporidium* oocysts in the source water. Your system's watershed control program must, for *Cryptosporidium*:

(a) Identify watershed characteristics and activities which may have an adverse effect on source water quality; and

(b) Monitor the occurrence of activities which may have an adverse effect on source water quality.

§141.522 How does the State determine whether my system's watershed control requirements are adequate?

During an onsite inspection conducted under the provisions of §141.71(b)(3), the State must determine whether your watershed control program is adequate to limit potential contamination by *Cryptosporidium* oocysts. The adequacy of the program must be based on the comprehensiveness of the watershed review; the effectiveness of your program to monitor and control detrimental activities occurring in the watershed; and the extent to which your system has maximized land ownership and/or controlled land use within the watershed.

DISINFECTION PROFILE

§141.530 What is a disinfection profile and who must develop one?

A disinfection profile is a graphical representation of your system's level of *Giardia lamblia* or virus inactivation measured during the course of a year. If you are a subpart H community or non-transient non-community water system which serves fewer than 10,000 persons, your system must develop a disinfection profile unless your State determines that your system's profile is unnecessary. Your State may approve the use of a more representative data set for disinfection profiling than the data set required under §§141.532–141.536.

[67 FR 1839, Jan. 14, 2002, as amended at 69 FR 38856, June 29, 2004]

§141.531 What criteria must a State use to determine that a profile is unnecessary?

States may only determine that a system's profile is unnecessary if a system's TTHM and HAA5 levels are below 0.064 mg/L and 0.048 mg/L, respectively. To determine these levels, TTHM and HAA5 samples must be collected after January 1, 1998, during the month with the warmest water temperature, and at the point of maximum residence time in your distribution system. Your State may approve a more representative TTHM and HAA5 data set to determine these levels.

[67 FR 1839, Jan. 14, 2002, as amended at 69 FR 38856, June 29, 2004]

§141.532 How does my system develop a disinfection profile and when must it begin?

A disinfection profile consists of three steps:

(a) First, your system must collect data for several parameters from the plant as discussed in §141.533 over the course of 12 months. If your system serves between 500 and 9,999 persons you must begin to collect data no later than July 1, 2003. If your system serves fewer than 500 persons you must begin to collect data no later than January 1, 2004.

(b) Second, your system must use this data to calculate weekly log inactivation as discussed in §§141.534 and 141.535; and

(c) Third, your system must use these weekly log inactivations to develop a disinfection profile as specified in §141.536.

§141.533 What data must my system collect to calculate a disinfection profile?

Your system must monitor the following parameters to determine the total log inactivation using the analytical methods in §141.74 (a), once per week on the same calendar day, over 12 consecutive months:

(a) The temperature of the disinfected water at each residual disinfectant concentration sampling point during peak hourly flow;

(b) If your system uses chlorine, the pH of the disinfected water at each residual disinfectant concentration sampling point during peak hourly flow;

(c) The disinfectant contact time(s) (''T'') during peak hourly flow; and

(d) The residual disinfectant concentration(s) (''C'') of the water before or at the first customer and prior to each additional point of disinfection during peak hourly flow.

§141.534 How does my system use this data to calculate an inactivation ratio?

Use the tables in §141.74(b)(3)(v) to determine the appropriate CT99.9 value. Calculate the total inactivation ratio as follows, and multiply the value by 3.0 to determine log inactivation of *Giardia lamblia:*

If your system * * *	Your system must determine * * *
(a) Uses only one point of disinfectant application.	(1) One inactivation ratio ($CTcalc/CT_{99.9}$) before or at the first customer during peak hourly flow or (2) Successive $CTcalc/CT_{99.9}$ values, representing sequential inactivation ratios, between the point of disinfectant application and a point before or at the first customer during peak hourly flow. Under this alternative, your system must calculate the total inactivation ratio by determining ($CTcalc/CT_{99.9}$) for each sequence and then adding the ($CTcalc/CT_{99.9}$) values together to determine ($SCTcalc/CT_{99.9}$).
(b) Uses more than one point of disinfectant application before the first customer.	The ($CTcalc/CT_{99.9}$) value of each disinfection segment immediately prior to the next point of disinfectant application, or for the final segment, before or at the first customer, during peak hourly flow using the procedure specified in paragraph (a)(2) of this section.

[67 FR 1839, Jan. 14, 2002, as amended at 69 FR 38856, June 29, 2004]

§141.535 What if my system uses chloramines, ozone, or chlorine dioxide for primary disinfection?

If your system uses chloramines, ozone, or chlorine dioxide for primary disinfection, you must also calculate the logs of inactivation for viruses and develop an additional disinfection profile for viruses using methods approved by the State.

§141.536 My system has developed an inactivation ratio; what must we do now?

Each log inactivation serves as a data point in your disinfection profile. Your system will have obtained 52 measurements (one for every week of the year). This will allow your system and the State the opportunity to evaluate how microbial inactivation varied over the course of the year by looking at all 52 measurements (your Disinfection Profile). Your system must retain the Disinfection Profile data in graphic form, such as a spreadsheet, which must be available for review by the State as part of a sanitary survey. Your system must use this data to calculate a benchmark if you are considering changes to disinfection practices.

DISINFECTION BENCHMARK

§141.540 Who has to develop a disinfection benchmark?

If you are a subpart H system required to develop a disinfection profile under §§141.530 through 141.536, your system must develop a Disinfection Benchmark if you decide to make a significant change to your disinfection practice. Your system must consult with the State for approval before you can implement a significant disinfection practice change.

§141.541 What are significant changes to disinfection practice?

Significant changes to disinfection practice include:

(a) Changes to the point of disinfection;

(b) Changes to the disinfectant(s) used in the treatment plant;

(c) Changes to the disinfection process; or

(d) Any other modification identified by the State.

§141.542 What must my system do if we are considering a significant change to disinfection practices?

If your system is considering a significant change to its disinfection practice, your system must calculate a disinfection benchmark(s) as described in §§141.543 and 141.544 and provide the benchmark(s) to your State. Your system may only make a significant disinfection practice change after consulting with the State for approval. Your system must submit the following information to the State as part of the consultation and approval process:

(a) A description of the proposed change;

(b) The disinfection profile for *Giardia lamblia* (and, if necessary, viruses) and disinfection benchmark;

(c) An analysis of how the proposed change will affect the current levels of disinfection; and

(d) Any additional information requested by the State.

§141.543 How is the disinfection benchmark calculated?

If your system is making a significant change to its disinfection practice, it must calculate a disinfection benchmark using the procedure specified in the following table.

To calculate a disinfection benchmark your system must perform the following steps
Step 1: Using the data your system collected to develop the Disinfection Profile, determine the average *Giardia lamblia* inactivation for each calendar month by dividing the sum of all *Giardia lamblia* inactivations for that month by the number of values calculated for that month.
Step 2: Determine the lowest monthly average value out of the twelve values. This value becomes the disinfection benchmark.

§141.544 What if my system uses chloramines, ozone, or chlorine dioxide for primary disinfection?

If your system uses chloramines, ozone or chlorine dioxide for primary disinfection your system must calculate the disinfection benchmark from the data your system collected for viruses to develop the disinfection profile in addition to the *Giardia lamblia* disinfection benchmark calculated under §141.543. This viral benchmark must be calculated in the same manner used to calculate the *Giardia lamblia* disinfection benchmark in §141.543.

COMBINED FILTER EFFLUENT REQUIREMENTS

§141.550 Is my system required to meet subpart T combined filter effluent turbidity limits?

All subpart H systems which serve populations fewer than 10,000, are required to filter, and utilize filtration other than slow sand filtration or diatomaceous earth filtration must meet the combined filter effluent turbidity requirements of §§141.551–141.553 . If your system uses slow sand or diatomaceous earth filtration you are not required to meet the combined filter effluent turbidity limits of subpart T, but you must continue to meet the combined filter effluent turbidity limits in §141.73.

§141.551 What strengthened combined filter effluent turbidity limits must my system meet?

Your system must meet two strengthened combined filter effluent turbidity limits.

(a) The first combined filter effluent turbidity limit is a ''95th percentile'' turbidity limit that your system must meet in at least 95 percent of the turbidity measurements taken each month. Measurements must continue to be taken as described in §141.74(a) and (c). Monthly reporting must be completed according to §141.570. The following table describes the required limits for specific filtration technologies.

If your system consists of * * *	Your 95th percentile turbidity value is * * *
(1) Conventional Filtration or Direct Filtration.	0.3 NTU.
(2) All other ''Alternative'' Filtration	A value determined by the State (not to exceed 1 NTU) based on the demonstration described in §141.552.

(b) The second combined filter effluent turbidity limit is a ''maximum'' turbidity limit which your system may at no time exceed during the month. Measurements must continue to be taken as described in §141.74(a) and (c). Monthly reporting must be completed according to §141.570. The following table describes the required limits for specific filtration technologies.

If your system consists of * * *	Your maximum turbidity value is * * *
(1) Conventional Filtration or Direct Filtration.	1 NTU.
(2) All other ''Alternative Filtration''	A value determined by the State (not to exceed 5 NTU) based on the demonstration as described in §141.552.

[67 FR 1839, Jan. 14, 2002, as amended at 69 FR 38856, June 29, 2004]

§141.552 My system consists of "alternative filtration" and is required to conduct a demonstration—what is required of my system and how does the State establish my turbidity limits?

(a) If your system consists of alternative filtration(filtration other than slow sand filtration, diatomaceous earth filtration, conventional filtration, or direct filtration) you are required to conduct a demonstration (see tables in §141.551). Your system must demonstrate to the State, using pilot plant studies or other means, that your system's filtration, in combination with disinfection treatment, consistently achieves:

(1) 99 percent removal of *Cryptosporidium* oocysts;

(2) 99.9 percent removal and/or inactivation of *Giardia lamblia* cysts; and

(3) 99.99 percent removal and/or inactivation of viruses.

(b) [Reserved]

§141.553 My system practices lime softening—is there any special provision regarding my combined filter effluent?

If your system practices lime softening, you may acidify representative combined filter effluent turbidity samples prior to analysis using a protocol approved by the State.

INDIVIDUAL FILTER TURBIDITY REQUIREMENTS

§141.560 Is my system subject to individual filter turbidity requirements?

If your system is a subpart H system serving fewer than 10,000 people and utilizing conventional filtration or direct filtration, you must conduct continuous monitoring of turbidity for each individual filter at your system. The following requirements apply to continuous turbidity monitoring:

(a) Monitoring must be conducted using an approved method in §141.74(a);

(b) Calibration of turbidimeters must be conducted using procedures specified by the manufacturer;

(c) Results of turbidity monitoring must be recorded at least every 15 minutes;

(d) Monthly reporting must be completed according to §141.570; and

(e) Records must be maintained according to §141.571.

§141.561 What happens if my system's turbidity monitoring equipment fails?

If there is a failure in the continuous turbidity monitoring equipment, your system must conduct grab sampling every four hours in lieu of continuous monitoring until the turbidimeter is back on-line. Your system has 14 days to resume continuous monitoring before a violation is incurred.

§141.562 My system only has two or fewer filters—is there any special provision regarding individual filter turbidity monitoring?

Yes, if your system only consists of two or fewer filters, you may conduct continuous monitoring of combined filter effluent turbidity in lieu of individual filter effluent turbidity monitoring. Continuous monitoring must meet the same requirements set forth in §141.560(a) through (d) and §141.561.

§141.563 What follow-up action is my system required to take based on continuous turbidity monitoring?

Follow-up action is required according to the following tables:

If * * *	Your system must * * *
(a) The turbidity of an individual filter (or the turbidity of combined filter effluent (CFE) for systems with 2 filters that monitor CFE in lieu of individual filters) exceeds 1.0 NTU in two consecutive recordings 15 minutes apart.	Report to the State by the 10th of the following month and include the filter number(s), corresponding date(s), turbidity value(s) which exceeded 1.0 NTU, and the cause (if known) for the exceedance(s).

If a system was required to report to the State * * *	Your system must * * *
(b) For three months in a row and turbidity exceeded 1.0 NTU in two consecutive recordings 15 minutes apart at the same filter (or CFE for systems with 2 filters that monitor CFE in lieu of individual filters).	Conduct a self-assessment of the filter(s) within 14 days of the day the filter exceeded 1.0 NTU in two consecutive measurements for the third straight month unless a CPE as specified in paragraph (c) of this section was required. Systems with 2 filters that monitor CFE in lieu of individual filters must conduct a self assessment on both filters. The self-assessment must consist of at least the following components: assessment of filter performance; development of a filter profile; identification and prioritization of factors limiting filter performance; assessment of the applicability of corrections; and preparation of a filter self-assessment report.
(c) For two months in a row and turbidity exceeded 2.0 NTU in 2 consecutive recordings 15 minutes apart at the same filter (or CFE for systems with 2 filters that monitor CFE in lieu of individual filters).	Arrange to have a comprehensive performance evaluation (CPE) conducted by the State or a third party approved by the State not later than 60 days following the day the filter exceeded 2.0 NTU in two consecutive measurements for the second straight month. If a CPE has been completed by the State or a third party approved by the State within the 12 prior months or the system and State are jointly participating in an ongoing Comprehensive Technical Assistance (CTA) project at the system, a new CPE is not required. If conducted, a CPE must be completed and submitted to the State no later than 120 days following the day the filter exceeded 2.0 NTU in two consecutive measurements for the second straight month.

[67 FR 1839, Jan. 14, 2002, as amended at 69 FR 38856, June 29, 2004]

§141.564 My system practices lime softening—is there any special provision regarding my individual filter turbidity monitoring?

If your system utilizes lime softening, you may apply to the State for alternative turbidity exceedance levels for the levels specified in the table in §141.563. You must be able to demonstrate to the State that higher turbidity levels are due to lime carryover only, and not due to degraded filter performance.

REPORTING AND RECORDKEEPING REQUIREMENTS

§141.570 What does subpart T require that my system report to the State?

This subpart T requires your system to report several items to the State. The following table describes the items which must be reported and the frequency of reporting. Your system is required to report the information described in the following table, if it is subject to the specific requirement shown in the first column.

Corresponding requirement	Description of information to report	Frequency
(a) Combined Filter Effluent Requirements. (§§141.550–141.553)	(1) The total number of filtered water turbidity measurements taken during the month.	By the 10th of the following month.
	(2) The number and percentage of filtered water turbidity measurements taken during the month which are less than or equal to your system's required 95th percentile limit.	By the 10th of the following month.
	(3) The date and value of any turbidity measurements taken during the month which exceed the maximum turbidity value for your filtration system.	By the 10th of the following month.
(b) Individual Turbidity Requirements. (§§141.560–141.564)	(1) That your system conducted individual filter turbidity monitoring during the month.	By the 10th of the following month.
	(2) The filter number(s), corresponding date(s), and the turbidity value(s) which exceeded 1.0 NTU during the month, and the cause (if known) for the exceedance(s), but only if 2 consecutive measurements exceeded 1.0 NTU.	By the 10th of the following month.
	(3) If a self-assessment is required, the date that it was triggered and the date that it was completed.	By the 10th of the following month (or 14 days after the self-assessment was triggered only if the self-assessment was triggered during the last four days of the month)
	(4) If a CPE is required, that the CPE is required and the date that it was triggered.	By the 10th of the following month.
	(5) Copy of completed CPE report	Within 120 days after the CPE was triggered.
(c) Disinfection Profiling (§§141.530–141.536)	(1) Results of optional monitoring which show TTHM levels <0.064 mg/l and HAA5 levels <0.048 mg/l (Only if your system wishes to forgo profiling) or that your system has begun disinfection profiling.	(i) For systems serving 500–9,999 by July 1, 2003; (ii) For systems serving fewer than 500 by January 1, 2004.
(d) Disinfection Benchmarking. (§§141.540–141.544)	(1) A description of the proposed change in disinfection, your system's disinfection profile for Giardia lamblia (and, if necessary, viruses) and disinfection benchmark, and an analysis of how the proposed change will affect the current levels of disinfection.	Anytime your system is considering a significant change to its disinfection practice.

[67 FR 1839, Jan. 14, 2002, as amended at 69 FR 38857, June 29, 2004]

§141.571 What records does subpart T require my system to keep?

Your system must keep several types of records based on the requirements of subpart T, in addition to recordkeeping requirements under §141.75. The following table describes the necessary records, the length of time these records must be kept, and for which requirement the records pertain. Your system is required to maintain records described in this table, if it is subject to the specific requirement shown in the first column.

Corresponding requirement	Description of necessary records	Duration of time records must be kept
(a) Individual Filter Turbidity Requirements (§§141.560–141.564)	Results of individual filter monitoring	At least 3 years.
(b) Disinfection Profiling (§§141.530–141.536)	Results of Profile (including raw data and analysis)	Indefinitely.
(c) Disinfection Benchmarking (§§141.540–141.544)	Benchmark (including raw data and analysis)	Indefinitely.

Subpart U—Initial Distribution System Evaluations

SOURCE: 71 FR 483, Jan. 4, 2006, unless otherwise noted.

§141.600 General requirements.

(a) The requirements of subpart U of this part constitute national primary drinking water regulations. The regulations in this subpart establish monitoring and other requirements for identifying subpart V compliance monitoring locations for determining compliance with maximum contaminant levels for total trihalomethanes (TTHM) and haloacetic acids (five)(HAA5). You must use an Initial Distribution System Evaluation (IDSE) to determine locations with representative high TTHM and HAA5 concentrations throughout your distribution system. IDSEs are used in conjunction with, but separate from, subpart L compliance monitoring, to identify and select subpart V compliance monitoring locations.

(b) *Applicability.* You are subject to these requirements if your system is a community water system that uses a primary or residual disinfectant other than ultraviolet light or delivers water that has been treated with a primary or residual disinfectant other than ultraviolet light; or if your system is a nontransient noncommunity water system that serves at least 10,000 people and uses a primary or residual disinfectant other than ultraviolet light or delivers water that has been treated with a primary or residual disinfectant other than ultraviolet light.

(c) *Schedule.* (1) You must comply with the requirements of this subpart on the schedule in the table in this paragraph (c)(1).

If you serve this population	You must submit your standard monitoring plan or system specific study plan [1] or 40/30 certification [2] to the State by or receive very small system waiver from State	You must complete your standard monitoring or system specific study by	You must submit your IDSE report to the State by [3]
Systems that are not part of a combined distribution system and systems that serve the largest population in the combined distribution system			
(i) ≥100,000	October 1, 2006	September 30, 2008	January 1, 2009.
(ii) 50,000–99,999	April 1, 2007	March 31, 2009	July 1, 2009.
(iii) 10,000–49,999.	October 1, 2007	September 30, 2009	January 1, 2010.
(iv) <10,000 (CWS Only).	April 1, 2008	March 31, 2010	July 1, 2010.
Other systems that are part of a combined distribution system			
(v) Wholesale system or consecutive system.	—at the same time as the system with the earliest compliance date in the combined distribution system.	—at the same time as the system with the earliest compliance date in the combined distribution system.	—at the same time as the system with the earliest compliance date in the combined distribution system.

[1] If, within 12 months after the date identified in this column, the State does not approve your plan or notify you that it has not yet completed its review, you may consider the plan that you submitted as approved. You must implement that plan and you must complete standard monitoring or a system specific study no later than the date identified in the third column.

[2] You must submit your 40/30 certification under §141.603 by the date indicated.

[3] If, within three months after the date identified in this column (nine months after the date identified in this column if you must comply on the schedule in paragraph (c)(1)(iii) of this section), the State does not approve your IDSE report or notify you that it has not yet completed its review, you may consider the report that you submitted as approved and you must implement the recommended subpart V monitoring as required.

(2) For the purpose of the schedule in paragraph (c)(1) of this section, the State may determine that the combined distribution system does not include certain consecutive systems based on factors such as receiving water from a wholesale system only on an emergency basis or receiving only a small percentage and small volume of water from a wholesale system. The State may also determine that the combined distribution system does not include certain wholesale systems based on factors such as delivering water to a consecutive system only on an emergency basis or delivering only a small percentage and small volume of water to a consecutive system.

(d) You must conduct standard monitoring that meets the requirements in §141.601, or a system specific study that meets the requirements in §141.602, or certify to the State that you meet 40/30 certification criteria under §141.603, or qualify for a very small system waiver under §141.604.

(1) You must have taken the full complement of routine TTHM and HAA5 compliance samples required of a system with your population and source water under subpart L of this part (or you must have taken the full complement of reduced TTHM and HAA5 compliance samples required of a system with your population and source water under subpart L if you meet reduced monitoring criteria under subpart L of this part) during the period specified in §141.603(a) to meet the 40/30 certification criteria in §141.603. You must have taken TTHM and HAA5 samples under §§141.131 and 141.132 to be eligible for the very small system waiver in §141.604.

(2) If you have not taken the required samples, you must conduct standard monitoring that meets the requirements in §141.601, or a system specific study that meets the requirements in §141.602.

(e) You must use only the analytical methods specified in §141.131, or otherwise approved by EPA for monitoring under this subpart, to demonstrate compliance with the requirements of this subpart.

(f) IDSE results will not be used for the purpose of determining compliance with MCLs in §141.64.

§141.601 Standard monitoring.

(a) *Standard monitoring plan.* Your standard monitoring plan must comply with paragraphs (a)(1) through (a)(4) of this section. You must prepare and submit your standard monitoring plan to the State according to the schedule in §141.600(c).

(1) Your standard monitoring plan must include a schematic of your distribution system (including distribution system entry points and their sources, and storage facilities), with notes indicating locations and dates of all projected standard monitoring, and all projected subpart L compliance monitoring.

(2) Your standard monitoring plan must include justification of standard monitoring location selection and a summary of data you relied on to justify standard monitoring location selection.

(3) Your standard monitoring plan must specify the population served and system type (subpart H or ground water).

(4) You must retain a complete copy of your standard monitoring plan submitted under this paragraph (a), including any State modification of your standard monitoring plan, for as long as you are required to retain your IDSE report under paragraph (c)(4) of this section.

(b) *Standard monitoring.* (1) You must monitor as indicated in the table in this paragraph (b)(1). You must collect dual sample sets at each monitoring location. One sample in the dual sample set must be analyzed for TTHM. The other sample in the dual sample set must be analyzed for HAA5. You must conduct one monitoring period during the peak historical month for TTHM levels or HAA5 levels or the month of warmest water temperature. You must review available compliance, study, or operational data to determine the peak historical month for TTHM or HAA5 levels or warmest water temperature.

Source water type	Population size category	Monitoring periods and frequency of sampling	Distribution system monitoring locations [1]				
			Total per monitoring period	Near entry points	Average residence time	High TTHM locations	High HAA5 locations
Subpart H							
	<500 consecutive systems.	one (during peak historical month)[2].	2	1	....	1	
	<500 non-consecutive systems.	....	2	....	....	1	1
	500–3,300 consecutive systems.	four (every 90 days)	2	1	....	1	
	500–3,300 non-consecutive systems.	....	2	....	....	1	1
	3,301–9,999	....	4	....	1	2	1
	10,000–49,999	six (every 60 days)	8	1	2	3	2
	50,000–249,999	....	16	3	4	5	4
	250,000–999,999	....	24	4	6	8	6
	1,000,000–4,999,999	....	32	6	8	10	8
	≥5,000,000	....	40	8	10	12	10
Ground Water							
	<500 consecutive systems.	one (during peak historical month)[2].	2	1	....	1	
	<500 non-consecutive systems.	....	2	....	....	1	1
	500–9,999	four (every 90 days)	2	....	....	1	1
	10,000–99,999	....	6	1	1	2	2
	100,000–499,999	....	8	1	1	3	3
	≥500,000	....	12	2	2	4	4

[1] A dual sample set (*i.e.*, a TTHM and an HAA5 sample) must be taken at each monitoring location during each monitoring period.

[2] The peak historical month is the month with the highest TTHM or HAA5 levels or the warmest water temperature.

(2) You must take samples at locations other than the existing subpart L monitoring locations. Monitoring locations must be distributed throughout the distribution system.

(3) If the number of entry points to the distribution system is fewer than the specified number of entry point monitoring locations, excess entry point samples must be replaced equally at high TTHM and HAA5 locations. If there is an odd extra location number, you must take a sample at a high TTHM location. If the number of entry points to the distribution system is more than the specified number of entry point monitoring locations, you must take samples at entry points to the distribution system having the highest annual water flows.

(4) Your monitoring under this paragraph (b) may not be reduced under the provisions of §141.29 and the State may not reduce your monitoring using the provisions of §142.16(m).

(c) *IDSE report.* Your IDSE report must include the elements required in paragraphs (c)(1) through (c)(4) of this section. You must submit your IDSE report to the State according to the schedule in §141.600(c).

(1) Your IDSE report must include all TTHM and HAA5 analytical results from subpart L compliance monitoring and all standard monitoring conducted during the period of the IDSE as individual analytical results and LRAAs presented in a tabular or spreadsheet format acceptable to the State. If changed from your standard monitoring plan submitted under paragraph (a) of this section, your report must also include a schematic of your distribution system, the population served, and system type (subpart H or ground water).

(2) Your IDSE report must include an explanation of any deviations from your approved standard monitoring plan.

(3) You must recommend and justify subpart V compliance monitoring locations and timing based on the protocol in §141.605.

(4) You must retain a complete copy of your IDSE report submitted under this section for 10 years after the date that you submitted your report. If the

State modifies the subpart V monitoring requirements that you recommended in your IDSE report or if the State approves alternative monitoring locations, you must keep a copy of the State's notification on file for 10 years after the date of the State's notification. You must make the IDSE report and any State notification available for review by the State or the public.

§141.602 System specific studies.

(a) *System specific study plan.* Your system specific study plan must be based on either existing monitoring results as required under paragraph (a)(1) of this section or modeling as required under paragraph (a)(2) of this section. You must prepare and submit your system specific study plan to the State according to the schedule in §141.600(c).

(1) *Existing monitoring results.* You may comply by submitting monitoring results collected before you are required to begin monitoring under §141.600(c). The monitoring results and analysis must meet the criteria in paragraphs (a)(1)(i) and (a)(1)(ii) of this section.

(i) *Minimum requirements.* (A) TTHM and HAA5 results must be based on samples collected and analyzed in accordance with §141.131. Samples must be collected no earlier than five years prior to the study plan submission date.

(B) The monitoring locations and frequency must meet the conditions identified in this paragraph (a)(1)(i)(B). Each location must be sampled once during the peak historical month for TTHM levels or HAA5 levels or the month of warmest water temperature for every 12 months of data submitted for that location. Monitoring results must include all subpart L compliance monitoring results plus additional monitoring results as necessary to meet minimum sample requirements.

System Type	Population size category	Number of monitoring locations	Number of samples	
			TTHM	HAA5
Subpart H:				
	<500	3	3	3
	500–3,300	3	9	9
	3,301–9,999	6	36	36
	10,000–49,999	12	72	72
	50,000–249,999	24	144	144
	250,000–999,999	36	216	216
	1,000,000–4,999,999	48	288	288
	≥5,000,000	60	360	360
Ground Water:				
	<500	3	3	3
	500–9,999	3	9	9
	10,000–99,999	12	48	48
	100,000–499,999	18	72	72
	≥500,000	24	96	96

(ii) *Reporting monitoring results.* You must report the information in this paragraph (a)(1)(ii).

(A) You must report previously collected monitoring results and certify that the reported monitoring results include all compliance and non-compliance results generated during the time period beginning with the first reported result and ending with the most recent subpart L results.

(B) You must certify that the samples were representative of the entire distribution system and that treatment, and distribution system have not changed significantly since the samples were collected.

(C) Your study monitoring plan must include a schematic of your distribution system (including distribution system entry points and their sources, and storage facilities), with notes indicating the locations and dates of all completed or planned system specific study monitoring.

(D) Your system specific study plan must specify the population served and system type (subpart H or ground water).

(E) You must retain a complete copy of your system specific study plan submitted under this paragraph (a)(1), including any State modification of your system specific study plan, for as long as you are required to retain your IDSE report under paragraph (b)(5) of this section.

(F) If you submit previously collected data that fully meet the number of samples required under paragraph (a)(1)(i)(B) of this section and the State rejects some of the data, you must either conduct additional monitoring to replace rejected data on a schedule the State approves or conduct standard monitoring under §141.601.

(2) *Modeling.* You may comply through analysis of an extended period simulation hydraulic model. The extended period simulation hydraulic model and analysis must meet the criteria in this paragraph (a)(2).

(i) *Minimum requirements.* (A) The model must simulate 24 hour variation in demand and show a consistently repeating 24 hour pattern of residence time.

(B) The model must represent the criteria listed in paragraphs (a)(2)(i)(B)(1) through (9) of this section.

(1) 75% of pipe volume;

(2) 50% of pipe length;

(3) All pressure zones;

(4) All 12-inch diameter and larger pipes;

(5) All 8-inch and larger pipes that connect pressure zones, influence zones from different sources, storage facilities, major demand areas, pumps, and control valves, or are known or expected to be significant conveyors of water;

(6) All 6-inch and larger pipes that connect remote areas of a distribution system to the main portion of the system;

(7) All storage facilities with standard operations represented in the model; and

(8) All active pump stations with controls represented in the model; and

(9) All active control valves.

(C) The model must be calibrated, or have calibration plans, for the current configuration of the distribution system during the period of high TTHM formation potential. All storage facilities must be evaluated as part of the calibration process. All required calibration must be completed no later than 12 months after plan submission.

(ii) *Reporting modeling.* Your system specific study plan must include the information in this paragraph (a)(2)(ii).

(A) Tabular or spreadsheet data demonstrating that the model meets requirements in paragraph (a)(2)(i)(B) of this section.

(B) A description of all calibration activities undertaken, and if calibration is complete, a graph of predicted tank levels versus measured tank levels for the storage facility with the highest residence time in each pressure zone, and a time series graph of the residence time at the longest residence time storage facility in the distribution system showing the predictions for the entire simulation period (*i.e.*, from time zero until the time it takes to for the model to reach a consistently repeating pattern of residence time).

(C) Model output showing preliminary 24 hour average residence time predictions throughout the distribution system.

(D) Timing and number of samples representative of the distribution system planned for at least one monitoring period of TTHM and HAA5 dual sample monitoring at a number of locations no less than would be required for the system under standard monitoring in §141.601 during the historical month of high TTHM. These samples must be taken at locations other than existing subpart L compliance monitoring locations.

(E) Description of how all requirements will be completed no later than 12 months after you submit your system specific study plan.

(F) Schematic of your distribution system (including distribution system entry points and their sources, and storage facilities), with notes indicating the locations and dates of all completed system specific study monitoring (if calibration is complete) and all subpart L compliance monitoring.

(G) Population served and system type (subpart H or ground water).

(H) You must retain a complete copy of your system specific study plan submitted under this paragraph (a)(2), including any State modification of your system specific study plan, for as long as you are required to retain your IDSE report under paragraph (b)(7) of this section.

(iii) If you submit a model that does not fully meet the requirements under paragraph (a)(2) of this section, you must correct the deficiencies and respond to State inquiries concerning the model. If you fail to correct deficiencies or respond to inquiries to the State's satisfaction, you must conduct standard monitoring under §141.601.

(b) *IDSE report.* Your IDSE report must include the elements required in paragraphs (b)(1) through (b)(6) of this section. You must submit your IDSE report according to the schedule in §141.600(c).

(1) Your IDSE report must include all TTHM and HAA5 analytical results from subpart L compliance monitoring and all system specific study monitoring conducted during the period of the system specific study presented in a tabular or spreadsheet format acceptable to the State. If changed from your system specific study plan submitted under paragraph (a) of this section, your IDSE report must also include a schematic of your distribution system, the population served, and system type (subpart H or ground water).

(2) If you used the modeling provision under paragraph (a)(2) of this section, you must include final information for the elements described in paragraph (a)(2)(ii) of this section, and a 24-hour time series graph of residence time for each subpart V compliance monitoring location selected.

(3) You must recommend and justify subpart V compliance monitoring locations and timing based on the protocol in §141.605.

(4) Your IDSE report must include an explanation of any deviations from your approved system specific study plan.

(5) Your IDSE report must include the basis (analytical and modeling results) and justification you used to select the recommended subpart V monitoring locations.

(6) You may submit your IDSE report in lieu of your system specific study plan on the schedule identified in §141.600(c) for submission of the system specific study plan if you believe that you have the necessary information by the time that the system specific study plan is due. If you elect this approach, your IDSE report must also include all information required under paragraph (a) of this section.

(7) You must retain a complete copy of your IDSE report submitted under this section for 10 years after the date that you submitted your IDSE report. If the State modifies the subpart V monitoring requirements that you recommended in your IDSE report or if the State approves alternative monitoring locations, you must keep a copy of the State's notification on file for 10 years after the date of the State's notification. You must make the IDSE report and any State notification available for review by the State or the public.

§141.603 40/30 certification.

(a) *Eligibility.* You are eligible for 40/30 certification if you had no TTHM or HAA5 monitoring violations under subpart L of this part and no individual sample exceeded 0.040 mg/L for TTHM or 0.030 mg/L for HAA5 during an eight consecutive calendar quarter period beginning no earlier than the date specified in this paragraph (a).

If your 40/30 certification is due	Then your eligibility for 40/30 certification is based on eight consecutive calendar quarters of subpart L compliance monitoring results beginning no earlier than [1]
(1) October 1, 2006	January 2004.
(2) April 1, 2007	January 2004.
(3) October 1, 2007	January 2005.
(4) April 1, 2008	January 2005.

[1] Unless you are on reduced monitoring under subpart L of this part and were not required to monitor during the specified period. If you did not monitor during the specified period, you must base your eligibility on compliance samples taken during the 12 months preceding the specified period.

(b) *40/30 certification.* (1) You must certify to your State that every individual compliance sample taken under subpart L of this part during the periods specified in paragraph (a) of this section were ≤0.040 mg/L for TTHM and ≤0.030 mg/L for HAA5, and that you have not had any TTHM or HAA5 monitoring violations during the period specified in paragraph (a) of this section.

(2) The State may require you to submit compliance monitoring results, distribution system schematics, and/or recommended subpart V compliance monitoring locations in addition to your certification. If you fail to submit the requested information, the State may require standard monitoring under §141.601 or a system specific study under §141.602.

(3) The State may still require standard monitoring under §141.601 or a system specific study under §141.602 even if you meet the criteria in paragraph (a) of this section.

(4) You must retain a complete copy of your certification submitted under this section for 10 years after the date that you submitted your certification. You must make the certification, all data upon which the certification is based, and any State notification available for review by the State or the public.

§141.604 Very small system waivers.

(a) If you serve fewer than 500 people and you have taken TTHM and HAA5 samples under subpart L of this part, you are not required to comply with this subpart unless the State notifies you that you must conduct standard monitoring under §141.601 or a system specific study under §141.602.

(b) If you have not taken TTHM and HAA5 samples under subpart L of this part or if the State notifies you that you must comply with this subpart, you must conduct standard monitoring under §141.601 or a system specific study under §141.602.

§141.605 Subpart V compliance monitoring location recommendations.

(a) Your IDSE report must include your recommendations and justification for where and during what month(s) TTHM and HAA5 monitoring for subpart V of this part should be conducted. You must base your recommendations on the criteria in paragraphs (b) through (e) of this section.

(b) You must select the number of monitoring locations specified in the table in this paragraph (b). You will use these recommended locations as subpart V routine compliance monitoring locations, unless State requires different or additional locations. You should distribute locations throughout the distribution system to the extent possible.

Source water type	Population size category	Monitoring frequency [1]	Distribution system monitoring location			
			Total per monitoring period [2]	Highest TTHM locations	Highest HAA5 locations	Existing subpart L compliance locations
Subpart H:						
	<500	per year	2	1	1	....
	500–3,300	per quarter	2	1	1	
	3,301–9,999	per quarter	2	1	1	....
	10,000–49,999	per quarter	4	2	1	1
	50,000–249,999	per quarter	8	3	3	2
	250,000–999,999	per quarter	12	5	4	3
	1,000,000–4,999,999	per quarter	16	6	6	4
	≥5,000,000	per quarter	20	8	7	5
Ground water:						
	<500	per year	2	1	1	
	500–9,999	per year	2	1	1	
	10,000–99,999	per quarter	4	2	1	1
	100,000–499,999	per quarter	6	3	2	1
	≥500,000	per quarter	8	3	3	2

[1] All systems must monitor during month of highest DBP concentrations.

[2] Systems on quarterly monitoring must take dual sample sets every 90 days at each monitoring location, except for subpart H systems serving 500–3,300. Ground water systems serving 500–9,999 on annual monitoring must take dual sample sets at each monitoring location. All other systems on annual monitoring and subpart H systems serving 500–3,300 are required to take individual TTHM and HAA5 samples (instead of a dual sample set) at the locations with the highest TTHM and HAA5 concentrations, respectively. For systems serving fewer than 500 people, only one location with a dual sample set per monitoring period is needed if the highest TTHM and HAA5 concentrations occur at the same location and month.

(c) You must recommend subpart V compliance monitoring locations based on standard monitoring results, system specific study results, and subpart L compliance monitoring results. You must follow the protocol in paragraphs (c)(1) through (c)(8) of this section. If required to monitor at more than eight locations, you must repeat the protocol as necessary. If you do not have existing subpart L compliance monitoring results or if you do not have enough existing subpart L compliance monitoring results, you must repeat the protocol, skipping the provisions of paragraphs (c)(3) and (c)(7) of this section as necessary, until you have identified the required total number of monitoring locations.

(1) Location with the highest TTHM LRAA not previously selected as a subpart V monitoring location.

(2) Location with the highest HAA5 LRAA not previously selected as a subpart V monitoring location.

(3) Existing subpart L average residence time compliance monitoring location (maximum residence time compliance monitoring location for ground water systems) with the highest HAA5 LRAA not previously selected as a subpart V monitoring location.

(4) Location with the highest TTHM LRAA not previously selected as a subpart V monitoring location.

(5) Location with the highest TTHM LRAA not previously selected as a subpart V monitoring location.

(6) Location with the highest HAA5 LRAA not previously selected as a subpart V monitoring location.

(7) Existing subpart L average residence time compliance monitoring location (maximum residence time compliance monitoring location for ground water systems) with the highest TTHM LRAA not previously selected as a subpart V monitoring location.

(8) Location with the highest HAA5 LRAA not previously selected as a subpart V monitoring location.

(d) You may recommend locations other than those specified in paragraph (c) of this section if you include a rationale for selecting other locations. If the State approves the alternate locations, you must monitor at these locations to determine compliance under subpart V of this part.

(e) Your recommended schedule must include subpart V monitoring during the peak historical month for TTHM and HAA5 concentration, unless the State approves another month. Once you have identified the peak historical month, and if you are required to conduct routine monitoring at least quarterly, you must schedule subpart V compliance monitoring at a regular frequency of every 90 days or fewer.

[71 FR 483, Jan. 4, 2006, as amended at 74 FR 30958, June 29, 2009]

Subpart V—Stage 2 Disinfection Byproducts Requirements

SOURCE: 71 FR 488, Jan. 4, 2006, unless otherwise noted.

§141.620 General requirements.

(a) *General.* The requirements of subpart V of this part constitute national primary drinking water regulations. The regulations in this subpart establish monitoring and other requirements for achieving compliance with maximum contaminant levels based on locational running annual averages (LRAA) for total trihalomethanes (TTHM) and haloacetic acids (five)(HAA5), and for achieving compliance with maximum residual disinfectant residuals for chlorine and chloramine for certain consecutive systems.

(b) *Applicability.* You are subject to these requirements if your system is a community water system or a nontransient noncommunity water system that uses a primary or residual disinfectant other than ultraviolet light or delivers water that has been treated with a primary or residual disinfectant other than ultraviolet light.

(c) *Schedule.* You must comply with the requirements in this subpart on the schedule in the following table based on your system type.

If you are this type of system	You must comply with subpart V monitoring by:[1]
Systems that are not part of a combined distribution system and systems that serve the largest population in the combined distribution system	
(1) System serving ≥100,000	April 1, 2012.
(2) System serving 50,000–99,999	October 1, 2012.
(3) System serving 10,000–49,999	October 1, 2013.
(4) System serving <10,000	October 1, 2013 if no *Cryptosporidium* monitoring is required under §141.701(a)(4) or October 1, 2014 if *Cryptosporidium* monitoring is required under §141.701(a)(4) or (a)(6)
Other systems that are part of a combined distribution system	
(5) Consecutive system or wholesale system	—at the same time as the system with the earliest compliance date in the combined distribution system.

[1] The State may grant up to an additional 24 months for compliance with MCLs and operational evaluation levels if you require capital improvements to comply with an MCL.

(6) Your monitoring frequency is specified in §141.621(a)(2).

(i) If you are required to conduct quarterly monitoring, you must begin monitoring in the first full calendar quarter that includes the compliance date in the table in this paragraph (c).

(ii) If you are required to conduct monitoring at a frequency that is less than quarterly, you must begin monitoring in the calendar month recommended in the IDSE report prepared under §141.601 or §141.602 or the calendar month identified in the subpart V monitoring plan developed under §141.622 no later than 12 months after the compliance date in this table.

(7) If you are required to conduct quarterly monitoring, you must make compliance calculations at the end of the fourth calendar quarter that follows the compliance date and at the end of each subsequent quarter (or earlier if the LRAA calculated based on fewer than four quarters of data would cause the MCL to be exceeded regardless of the monitoring results of subsequent quarters). If you are required to conduct monitoring at a frequency that is less than quarterly, you must make compliance calculations beginning with the first compliance sample taken after the compliance date.

(8) For the purpose of the schedule in this paragraph (c), the State may determine that the combined distribution system does not include certain consecutive systems based on factors such as receiving water from a wholesale system only on an emergency basis or receiving only a small percentage and small volume of water from a wholesale system. The State may also determine that the combined distribution system does not include certain wholesale systems based on factors such as delivering water to a consecutive system only on an emergency basis or delivering only a small percentage and small volume of water to a consecutive system.

(d) *Monitoring and compliance*—(1) *Systems required to monitor quarterly*. To comply with subpart V MCLs in §141.64(b)(2), you must calculate LRAAs for TTHM and HAA5 using monitoring results collected under this subpart and determine that each LRAA does not exceed the MCL. If you fail to complete four consecutive quarters of monitoring, you must calculate compliance with the MCL based on the average of the available data from the most recent four quarters. If you take more than one sample per quarter at a monitoring location, you must average all samples taken in the quarter at that location to determine a quarterly average to be used in the LRAA calculation.

(2) *Systems required to monitor yearly or less frequently*. To determine compliance with subpart V MCLs in §141.64(b)(2), you must determine that each sample taken is less than the MCL. If any sample exceeds the MCL, you must comply with the requirements of §141.625. If no sample exceeds the MCL, the sample result for each monitoring location is considered the LRAA for that monitoring location.

(e) *Violation*. You are in violation of the monitoring requirements for each quarter that a monitoring result would be used in calculating an LRAA if you fail to monitor.

[71 FR 488, Jan. 4, 2006; 71 FR 4645, Jan. 27, 2006]

§141.621 Routine monitoring.

(a) *Monitoring.* (1) If you submitted an IDSE report, you must begin monitoring at the locations and months you have recommended in your IDSE report submitted under §141.605 following the schedule in §141.620(c), unless the State requires other locations or additional locations after its review. If you submitted a 40/30 certification under §141.603 or you qualified for a very small system waiver under §141.604 or you are a nontransient noncommunity water system serving <10,000, you must monitor at the location(s) and dates identified in your monitoring plan in §141.132(f), updated as required by §141.622.

(2) You must monitor at no fewer than the number of locations identified in this paragraph (a)(2).

Source water type	Population size category	Monitoring Frequency[1]	Distribution system monitoring location total per monitoring period[2]
Subpart H:			
	<500	per year	2
	500–3,300	per quarter	2
	3,301–9,999	per quarter	2
	10,000–49,999	per quarter	4
	50,000–249,999	per quarter	8
	250,000–999,999	per quarter	12
	1,000,000–4,999,999	per quarter	16
	≥5,000,000	per quarter	20
Ground Water:			
	<500	per year	2
	500–9,999	per year	2
	10,000–99,999	per quarter	4
	100,000–499,999	per quarter	6
	≥500,000	per quarter	8

[1] All systems must monitor during month of highest DBP concentrations.

[2] Systems on quarterly monitoring must take dual sample sets every 90 days at each monitoring location, except for subpart H systems serving 500–3,300. Ground water systems serving 500–9,999 on annual monitoring must take dual sample sets at each monitoring location. All other systems on annual monitoring and subpart H systems serving 500–3,300 are required to take individual TTHM and HAA5 samples (instead of a dual sample set) at the locations with the highest TTHM and HAA5 concentrations, respectively. For systems serving fewer than 500 people, only one location with a dual sample set per monitoring period is needed if the highest TTHM and HAA5 concentrations occur at the same location and month.

(3) If you are an undisinfected system that begins using a disinfectant other than UV light after the dates in subpart U of this part for complying with the Initial Distribution System Evaluation requirements, you must consult with the State to identify compliance monitoring locations for this subpart. You must then develop a monitoring plan under §141.622 that includes those monitoring locations.

(b) *Analytical methods.* You must use an approved method listed in §141.131 for TTHM and HAA5 analyses in this subpart. Analyses must be conducted by laboratories that have received certification by EPA or the State as specified in §141.131.

[71 FR 488, Jan. 4, 2006, as amended at 74 FR 30958, June 29, 2009]

§141.622 Subpart V monitoring plan.

(a)(1) You must develop and implement a monitoring plan to be kept on file for State and public review. The monitoring plan must contain the elements in paragraphs (a)(1)(i) through (a)(1)(iv) of this section and be complete no later than the date you conduct your initial monitoring under this subpart.

(i) Monitoring locations;

(ii) Monitoring dates;

(iii) Compliance calculation procedures; and

(iv) Monitoring plans for any other systems in the combined distribution system if the State has reduced monitoring requirements under the State authority in §142.16(m).

(2) If you were not required to submit an IDSE report under either §141.601 or

§141.602, and you do not have sufficient subpart L monitoring locations to identify the required number of subpart V compliance monitoring locations indicated in §141.605(b), you must identify additional locations by alternating selection of locations representing high TTHM levels and high HAA5 levels until the required number of compliance monitoring locations have been identified. You must also provide the rationale for identifying the locations as having high levels of TTHM or HAA5. If you have more subpart L monitoring locations than required for subpart V compliance monitoring in §141.605(b), you must identify which locations you will use for subpart V compliance monitoring by alternating selection of locations representing high TTHM levels and high HAA5 levels until the required number of subpart V compliance monitoring locations have been identified.

(b) If you are a subpart H system serving >3,300 people, you must submit a copy of your monitoring plan to the State prior to the date you conduct your initial monitoring under this subpart, unless your IDSE report submitted under subpart U of this part contains all the information required by this section.

(c) You may revise your monitoring plan to reflect changes in treatment, distribution system operations and layout (including new service areas), or other factors that may affect TTHM or HAA5 formation, or for State-approved reasons, after consultation with the State regarding the need for changes and the appropriateness of changes. If you change monitoring locations, you must replace existing compliance monitoring locations with the lowest LRAA with new locations that reflect the current distribution system locations with expected high TTHM or HAA5 levels. The State may also require modifications in your monitoring plan. If you are a subpart H system serving >3,300 people, you must submit a copy of your modified monitoring plan to the State prior to the date you are required to comply with the revised monitoring plan.

§141.623 Reduced monitoring.

(a) You may reduce monitoring to the level specified in the table in this paragraph (a) any time the LRAA is ≤0.040 mg/L for TTHM and ≤0.030 mg/L for HAA5 at all monitoring locations. You may only use data collected under the provisions of this subpart or subpart L of this part to qualify for reduced monitoring. In addition, the source water annual average TOC level, before any treatment, must be ≤4.0 mg/L at each treatment plant treating surface water or ground water under the direct influence of surface water, based on monitoring conducted under either §141.132(b)(1)(iii) or §141.132(d).

Source water type	Population size category	Monitoring frequency[1]	Distribution system monitoring location per monitoring period
Subpart H:			
	<500	....	monitoring may not be reduced.
	500–3,300	per year	1 TTHM and 1 HAA5 sample: one at the location and during the quarter with the highest TTHM single measurement, one at the location and during the quarter with the highest HAA5 single measurement; 1 dual sample set per year if the highest TTHM and HAA5 measurements occurred at the same location and quarter.
	3,301–9,999	per year	2 dual sample sets: one at the location and during the quarter with the highest TTHM single measurement, one at the location and during the quarter with the highest HAA5 single measurement.
	10,000–49,999	per quarter	2 dual sample sets at the locations with the highest TTHM and highest HAA5 LRAAs.
	50,000–249,999	per quarter	4 dual sample sets—at the locations with the two highest TTHM and two highest HAA5 LRAAs.
	250,000–999,999	per quarter	6 dual sample sets—at the locations with the three highest TTHM and three highest HAA5 LRAAs.

Source water type	Population size category	Monitoring frequency [1]	Distribution system monitoring location per monitoring period
	1,000,000–4,999,999	per quarter	8 dual sample sets—at the locations with the four highest TTHM and four highest HAA5 LRAAs.
	≥5,000,000	per quarter	10 dual sample sets—at the locations with the five highest TTHM and five highest HAA5 LRAAs.
Ground Water:			
	<500	every third year	1 TTHM and 1 HAA5 sample: one at the location and during the quarter with the highest TTHM single measurement, one at the location and during the quarter with the highest HAA5 single measurement; 1 dual sample set per year if the highest TTHM and HAA5 measurements occurred at the same location and quarter.
	500–9,999	per year	1 TTHM and 1 HAA5 sample: one at the location and during the quarter with the highest TTHM single measurement, one at the location and during the quarter with the highest HAA5 single measurement; 1 dual sample set per year if the highest TTHM and HAA5 measurements occurred at the same location and quarter.
	10,000–99,999	per year	2 dual sample sets: one at the location and during the quarter with the highest TTHM single measurement, one at the location and during the quarter with the highest HAA5 single measurement.
	100,000–499,999	per quarter	2 dual sample sets; at the locations with the highest TTHM and highest HAA5 LRAAs.
	≥500,000	per quarter	4 dual sample sets at the locations with the two highest TTHM and two highest HAA5 LRAAs.

[1] Systems on quarterly monitoring must take dual sample sets every 90 days.

(b) You may remain on reduced monitoring as long as the TTHM LRAA ≤0.040 mg/L and the HAA5 LRAA ≤0.030 mg/L at each monitoring location (for systems with quarterly reduced monitoring) or each TTHM sample ≤0.060 mg/L and each HAA5 sample ≤0.045 mg/L (for systems with annual or less frequent monitoring). In addition, the source water annual average TOC level, before any treatment, must be ≤4.0 mg/L at each treatment plant treating surface water or ground water under the direct influence of surface water, based on monitoring conducted under either §141.132(b)(1)(iii) or §141.132(d).

(c) If the LRAA based on quarterly monitoring at any monitoring location exceeds either 0.040 mg/L for TTHM or 0.030 mg/L for HAA5 or if the annual (or less frequent) sample at any location exceeds either 0.060 mg/L for TTHM or 0.045 mg/L for HAA5, or if the source water annual average TOC level, before any treatment, >4.0 mg/L at any treatment plant treating surface water or ground water under the direct influence of surface water, you must resume routine monitoring under §141.621 or begin increased monitoring if §141.625 applies.

(d) The State may return your system to routine monitoring at the State's discretion.

§141.624 Additional requirements for consecutive systems.

If you are a consecutive system that does not add a disinfectant but delivers water that has been treated with a primary or residual disinfectant other than ultraviolet light, you must comply with analytical and monitoring requirements for chlorine and chloramines in §141.131 (c) and §141.132(c)(1) and the compliance requirements in §141.133(c)(1) beginning April 1, 2009, unless required earlier by the State, and report monitoring results under §141.134(c).

§141.625 Conditions requiring increased monitoring.

(a) If you are required to monitor at a particular location annually or less frequently than annually under §141.621

or §141.623, you must increase monitoring to dual sample sets once per quarter (taken every 90 days) at all locations if a TTHM sample is >0.080 mg/L or a HAA5 sample is >0.060 mg/L at any location.

(b) You are in violation of the MCL when the LRAA exceeds the subpart V MCLs in §141.64(b)(2), calculated based on four consecutive quarters of monitoring (or the LRAA calculated based on fewer than four quarters of data if the MCL would be exceeded regardless of the monitoring results of subsequent quarters). You are in violation of the monitoring requirements for each quarter that a monitoring result would be used in calculating an LRAA if you fail to monitor.

(c) You may return to routine monitoring once you have conducted increased monitoring for at least four consecutive quarters and the LRAA for every monitoring location is ≤0.060 mg/L for TTHM and ≤0.045 mg/L for HAA5.

§141.626 Operational evaluation levels.

(a) You have exceeded the operational evaluation level at any monitoring location where the sum of the two previous quarters' TTHM results plus twice the current quarter's TTHM result, divided by 4 to determine an average, exceeds 0.080 mg/L, or where the sum of the two previous quarters' HAA5 results plus twice the current quarter's HAA5 result, divided by 4 to determine an average, exceeds 0.060 mg/L.

(b)(1) If you exceed the operational evaluation level, you must conduct an operational evaluation and submit a written report of the evaluation to the State no later than 90 days after being notified of the analytical result that causes you to exceed the operational evaluation level. The written report must be made available to the public upon request.

(2) Your operational evaluation must include an examination of system treatment and distribution operational practices, including storage tank operations, excess storage capacity, distribution system flushing, changes in sources or source water quality, and treatment changes or problems that may contribute to TTHM and HAA5 formation and what steps could be considered to minimize future exceedences.

(i) You may request and the State may allow you to limit the scope of your evaluation if you are able to identify the cause of the operational evaluation level exceedance.

(ii) Your request to limit the scope of the evaluation does not extend the schedule in paragraph (b)(1) of this section for submitting the written report. The State must approve this limited scope of evaluation in writing and you must keep that approval with the completed report.

§141.627 Requirements for remaining on reduced TTHM and HAA5 monitoring based on subpart L results.

You may remain on reduced monitoring after the dates identified in §141.620(c) for compliance with this subpart only if you qualify for a 40/30 certification under §141.603 or have received a very small system waiver under §141.604, plus you meet the reduced monitoring criteria in §141.623(a), and you do not change or add monitoring locations from those used for compliance monitoring under subpart L of this part. If your monitoring locations under this subpart differ from your monitoring locations under subpart L of this part, you may not remain on reduced monitoring after the dates identified in §141.620(c) for compliance with this subpart.

§141.628 Requirements for remaining on increased TTHM and HAA5 monitoring based on subpart L results.

If you were on increased monitoring under §141.132(b)(1), you must remain on increased monitoring until you qualify for a return to routine monitoring under §141.625(c). You must conduct increased monitoring under §141.625 at the monitoring locations in the monitoring plan developed under §141.622 beginning at the date identified in §141.620(c) for compliance with this subpart and remain on increased monitoring until you qualify for a return to routine monitoring under §141.625(c).

§141.629 Reporting and recordkeeping requirements.

(a) *Reporting.* (1) You must report the following information for each monitoring location to the State within 10 days of the end of any quarter in which monitoring is required:

(i) Number of samples taken during the last quarter.

(ii) Date and results of each sample taken during the last quarter.

(iii) Arithmetic average of quarterly results for the last four quarters for each monitoring location (LRAA), beginning at the end of the fourth calendar quarter that follows the compliance date and at the end of each subsequent quarter. If the LRAA calculated based on fewer than four quarters of data would cause the MCL to be exceeded regardless of the monitoring results of subsequent quarters, you must report this information to the State as part of the first report due following the compliance date or anytime thereafter that this determination is made. If you are required to conduct monitoring at a frequency that is less than quarterly, you must make compliance calculations beginning with the first compliance sample taken after the compliance date, unless you are required to conduct increased monitoring under §141.625.

(iv) Whether, based on §141.64(b)(2) and this subpart, the MCL was violated at any monitoring location.

(v) Any operational evaluation levels that were exceeded during the quarter and, if so, the location and date, and the calculated TTHM and HAA5 levels.

(2) If you are a subpart H system seeking to qualify for or remain on reduced TTHM/HAA5 monitoring, you must report the following source water TOC information for each treatment plant that treats surface water or ground water under the direct influence of surface water to the State within 10 days of the end of any quarter in which monitoring is required:

(i) The number of source water TOC samples taken each month during last quarter.

(ii) The date and result of each sample taken during last quarter.

(iii) The quarterly average of monthly samples taken during last quarter or the result of the quarterly sample.

(iv) The running annual average (RAA) of quarterly averages from the past four quarters.

(v) Whether the RAA exceeded 4.0 mg/L.

(3) The State may choose to perform calculations and determine whether the MCL was exceeded or the system is eligible for reduced monitoring in lieu of having the system report that information

(b) *Recordkeeping.* You must retain any subpart V monitoring plans and your subpart V monitoring results as required by §141.33.

Subpart W—Enhanced Treatment for *Cryptosporidium*

SOURCE: 71 FR 769, Jan. 5, 2006, unless otherwise noted.

GENERAL REQUIREMENTS

§141.700 General requirements.

(a) The requirements of this subpart W are national primary drinking water regulations. The regulations in this subpart establish or extend treatment technique requirements in lieu of maximum contaminant levels for *Cryptosporidium*. These requirements are in addition to requirements for filtration and disinfection in subparts H, P, and T of this part.

(b) *Applicability.* The requirements of this subpart apply to all subpart H systems, which are public water systems supplied by a surface water source and public water systems supplied by a ground water source under the direct influence of surface water.

(1) Wholesale systems, as defined in §141.2, must comply with the requirements of this subpart based on the population of the largest system in the combined distribution system.

(2) The requirements of this subpart for filtered systems apply to systems required by National Primary Drinking Water Regulations to provide filtration treatment, whether or not the system is currently operating a filtration system.

(3) The requirements of this subpart for unfiltered systems apply only to unfiltered systems that timely met and

continue to meet the filtration avoidance criteria in subparts H, P, and T of this part, as applicable.

(c) *Requirements.* Systems subject to this subpart must comply with the following requirements:

(1) Systems must conduct an initial and a second round of source water monitoring for each plant that treats a surface water or GWUDI source. This monitoring may include sampling for *Cryptosporidium, E. coli,* and turbidity as described in §§141.701 through 141.706, to determine what level, if any, of additional *Cryptosporidium* treatment they must provide.

(2) Systems that plan to make a significant change to their disinfection practice must develop disinfection profiles and calculate disinfection benchmarks, as described in §§141.708 through 141.709.

(3) Filtered systems must determine their *Cryptosporidium* treatment bin classification as described in §141.710 and provide additional treatment for *Cryptosporidium,* if required, as described in §141.711. All unfiltered systems must provide treatment for *Cryptosporidium* as described in §141.712. Filtered and unfiltered systems must implement *Cryptosporidium* treatment according to the schedule in §141.713.

(4) Systems with uncovered finished water storage facilities must comply with the requirements to cover the facility or treat the discharge from the facility as described in §141.714.

(5) Systems required to provide additional treatment for *Cryptosporidium* must implement microbial toolbox options that are designed and operated as described in §§141.715 through 141.720.

(6) Systems must comply with the applicable recordkeeping and reporting requirements described in §§141.721 through 141.722.

(7) Systems must address significant deficiencies identified in sanitary surveys performed by EPA as described in §141.723.

SOURCE WATER MONITORING REQUIREMENTS

§141.701 Source water monitoring.

(a) *Initial round of source water monitoring.* Systems must conduct the following monitoring on the schedule in paragraph (c) of this section unless they meet the monitoring exemption criteria in paragraph (d) of this section.

(1) Filtered systems serving at least 10,000 people must sample their source water for *Cryptosporidium, E. coli,* and turbidity at least monthly for 24 months.

(2) Unfiltered systems serving at least 10,000 people must sample their source water for *Cryptosporidium* at least monthly for 24 months.

(3)(i) Filtered systems serving fewer than 10,000 people must sample their source water for *E. coli* at least once every two weeks for 12 months.

(ii) A filtered system serving fewer than 10,000 people may avoid *E. coli* monitoring if the system notifies the State that it will monitor for *Cryptosporidium* as described in paragraph (a)(4) of this section. The system must notify the State no later than 3 months prior to the date the system is otherwise required to start *E. coli* monitoring under §141.701(c).

(4) Filtered systems serving fewer than 10,000 people must sample their source water for *Cryptosporidium* at least twice per month for 12 months or at least monthly for 24 months if they meet one of the following, based on monitoring conducted under paragraph (a)(3) of this section:

(i) For systems using lake/reservoir sources, the annual mean *E. coli* concentration is greater than 10 *E. coli*/100 mL.

(ii) For systems using flowing stream sources, the annual mean *E. coli* concentration is greater than 50 *E. coli*/100 mL.

(iii) The system does not conduct *E. coli* monitoring as described in paragraph (a)(3) of this section.

(iv) Systems using ground water under the direct influence of surface water (GWUDI) must comply with the requirements of paragraph (a)(4) of this section based on the *E. coli* level that applies to the nearest surface water body. If no surface water body is nearby, the system must comply based on the requirements that apply to systems using lake/reservoir sources.

(5) For filtered systems serving fewer than 10,000 people, the State may approve monitoring for an indicator

other than *E. coli* under paragraph (a)(3) of this section. The State also may approve an alternative to the *E. coli* concentration in paragraph (a)(4)(i), (ii) or (iv) of this section to trigger *Cryptosporidium* monitoring. This approval by the State must be provided to the system in writing and must include the basis for the State's determination that the alternative indicator and/or trigger level will provide a more accurate identification of whether a system will exceed the Bin 1 *Cryptosporidium* level in §141.710.

(6) Unfiltered systems serving fewer than 10,000 people must sample their source water for *Cryptosporidium* at least twice per month for 12 months or at least monthly for 24 months.

(7) Systems may sample more frequently than required under this section if the sampling frequency is evenly spaced throughout the monitoring period.

(b) *Second round of source water monitoring.* Systems must conduct a second round of source water monitoring that meets the requirements for monitoring parameters, frequency, and duration described in paragraph (a) of this section, unless they meet the monitoring exemption criteria in paragraph (d) of this section. Systems must conduct this monitoring on the schedule in paragraph (c) of this section.

(c) *Monitoring schedule.* Systems must begin the monitoring required in paragraphs (a) and (b) of this section no later than the month beginning with the date listed in this table:

SOURCE WATER MONITORING STARTING DATES TABLE

Systems that serve . . .	Must begin the first round of source water monitoring no later than the month beginning . . .	And must begin the second round of source water monitoring no later than the month beginning . . .
(1) At least 100,000 people	(i) October 1, 2006	(ii) April 1, 2015.
(2) From 50,000 to 99,999 people	(i) April 1, 2007	(ii) October 1, 2015.
(3) From 10,000 to 49,999 people	(i) April 1, 2008	(ii) October 1, 2016.
(4) Fewer than 10,000 and monitor for *E. coli* [a].	(i) October 1, 2008	(ii) October 1, 2017.
(5) Fewer than 10,000 and monitor for *Cryptosporidium* [b].	(i) April 1, 2010	(ii) April 1, 2019.

[a] Applies only to filtered systems.
[b] Applies to filtered systems that meet the conditions of paragraph (a)(4) of this section and unfiltered systems.

(d) *Monitoring avoidance.* (1) Filtered systems are not required to conduct source water monitoring under this subpart if the system will provide a total of at least 5.5-logof treatment for *Cryptosporidium,* equivalent to meeting the treatment requirements of Bin 4 in §141.711.

(2) Unfiltered systems are not required to conduct source water monitoring under this subpart if the system will provide a total of at least 3-log *Cryptosporidium* inactivation, equivalent to meeting the treatment requirements for unfiltered systems with a mean *Cryptosporidium* concentration of greater than 0.01 oocysts/L in §141.712.

(3) If a system chooses to provide the level of treatment in paragraph (d)(1) or (2) of this section, as applicable, rather than start source water monitoring, the system must notify the State in writing no later than the date the system is otherwise required to submit a sampling schedule for monitoring under §141.702. Alternatively, a system may choose to stop sampling at any point after it has initiated monitoring if it notifies the State in writing that it will provide this level of treatment. Systems must install and operate technologies to provide this level of treatment by the applicable treatment compliance date in §141.713.

(e) *Plants operating only part of the year.* Systems with subpart H plants that operate for only part of the year must conduct source water monitoring in accordance with this subpart, but with the following modifications:

(1) Systems must sample their source water only during the months that the plant operates unless the State specifies another monitoring period based on plant operating practices.

(2) Systems with plants that operate less than six months per year and that

monitor for *Cryptosporidium* must collect at least six *Cryptosporidium* samples per year during each of two years of monitoring. Samples must be evenly spaced throughout the period the plant operates.

(f)(1) *New sources.* A system that begins using a new source of surface water or GWUDI after the system is required to begin monitoring under paragraph (c) of this section must monitor the new source on a schedule the State approves. Source water monitoring must meet the requirements of this subpart. The system must also meet the bin classification and *Cryptosporidium* treatment requirements of §§141.710 and 141.711 or §141.712, as applicable, for the new source on a schedule the State approves.

(2) The requirements of §141.701(f) apply to subpart H systems that begin operation after the monitoring start date applicable to the system's size under paragraph (c) of this section.

(3) The system must begin a second round of source water monitoring no later than 6 years following initial bin classification under §141.710 or determination of the mean *Cryptosporidium* level under §141.712, as applicable.

(g) Failure to collect any source water sample required under this section in accordance with the sampling schedule, sampling location, analytical method, approved laboratory, and reporting requirements of §§141.702 through 141.706 is a monitoring violation.

(h) *Grandfathering monitoring data.* Systems may use (grandfather) monitoring data collected prior to the applicable monitoring start date in paragraph (c) of this section to meet the initial source water monitoring requirements in paragraph (a) of this section. Grandfathered data may substitute for an equivalent number of months at the end of the monitoring period. All data submitted under this paragraph must meet the requirements in §141.707.

§141.702 Sampling schedules.

(a) Systems required to conduct source water monitoring under §141.701 must submit a sampling schedule that specifies the calendar dates when the system will collect each required sample.

(1) Systems must submit sampling schedules no later than 3 months prior to the applicable date listed in §141.701(c) for each round of required monitoring.

(2)(i) Systems serving at least 10,000 people must submit their sampling schedule for the initial round of source water monitoring under §141.701(a) to EPA electronically at *https://intranet.epa.gov/lt2/.*

(ii) If a system is unable to submit the sampling schedule electronically, the system may use an alternative approach for submitting the sampling schedule that EPA approves.

(3) Systems serving fewer than 10,000 people must submit their sampling schedules for the initial round of source water monitoring §141.701(a) to the State.

(4) Systems must submit sampling schedules for the second round of source water monitoring §141.701(b) to the State.

(5) If EPA or the State does not respond to a system regarding its sampling schedule, the system must sample at the reported schedule.

(b) Systems must collect samples within two days before or two days after the dates indicated in their sampling schedule (*i.e.*, within a five-day period around the schedule date) unless one of the conditions of paragraph (b)(1) or (2) of this section applies.

(1) If an extreme condition or situation exists that may pose danger to the sample collector, or that cannot be avoided and causes the system to be unable to sample in the scheduled five-day period, the system must sample as close to the scheduled date as is feasible unless the State approves an alternative sampling date. The system must submit an explanation for the delayed sampling date to the State concurrent with the shipment of the sample to the laboratory.

(2)(i) If a system is unable to report a valid analytical result for a scheduled sampling date due to equipment failure, loss of or damage to the sample, failure to comply with the analytical method requirements, including the quality control requirements in §141.704, or the failure of an approved laboratory to analyze the sample, then the system must collect a replacement sample.

(ii) The system must collect the replacement sample not later than 21 days after receiving information that an analytical result cannot be reported for the scheduled date unless the system demonstrates that collecting a replacement sample within this time frame is not feasible or the State approves an alternative resampling date. The system must submit an explanation for the delayed sampling date to the State concurrent with the shipment of the sample to the laboratory.

(c) Systems that fail to meet the criteria of paragraph (b) of this section for any source water sample required under §141.701 must revise their sampling schedules to add dates for collecting all missed samples. Systems must submit the revised schedule to the State for approval prior to when the system begins collecting the missed samples.

§141.703 Sampling locations.

(a) Systems required to conduct source water monitoring under §141.701 must collect samples for each plant that treats a surface water or GWUDI source. Where multiple plants draw water from the same influent, such as the same pipe or intake, the State may approve one set of monitoring results to be used to satisfy the requirements of §141.701 for all plants.

(b)(1) Systems must collect source water samples prior to chemical treatment, such as coagulants, oxidants and disinfectants, unless the system meets the condition of paragraph (b)(2) of this section.

(2) The State may approve a system to collect a source water sample after chemical treatment. To grant this approval, the State must determine that collecting a sample prior to chemical treatment is not feasible for the system and that the chemical treatment is unlikely to have a significant adverse effect on the analysis of the sample.

(c) Systems that recycle filter backwash water must collect source water samples prior to the point of filter backwash water addition.

(d) *Bank filtration.* (1) Systems that receive *Cryptosporidium* treatment credit for bank filtration under §141.173(b) or §141.552(a), as applicable, must collect source water samples in the surface water prior to bank filtration.

(2) Systems that use bank filtration as pretreatment to a filtration plant must collect source water samples from the well (*i.e.*, after bank filtration). Use of bank filtration during monitoring must be consistent with routine operational practice. Systems collecting samples after a bank filtration process may not receive treatment credit for the bank filtration under §141.717(c).

(e) *Multiple sources.* Systems with plants that use multiple water sources, including multiple surface water sources and blended surface water and ground water sources, must collect samples as specified in paragraph (e)(1) or (2) of this section. The use of multiple sources during monitoring must be consistent with routine operational practice.

(1) If a sampling tap is available where the sources are combined prior to treatment, systems must collect samples from the tap.

(2) If a sampling tap where the sources are combined prior to treatment is not available, systems must collect samples at each source near the intake on the same day and must follow either paragraph (e)(2)(i) or (ii) of this section for sample analysis.

(i) Systems may composite samples from each source into one sample prior to analysis. The volume of sample from each source must be weighted according to the proportion of the source in the total plant flow at the time the sample is collected.

(ii) Systems may analyze samples from each source separately and calculate a weighted average of the analysis results for each sampling date. The weighted average must be calculated by multiplying the analysis result for each source by the fraction the source contributed to total plant flow at the time the sample was collected and then summing these values.

(f) *Additional Requirements.* Systems must submit a description of their sampling location(s) to the State at the same time as the sampling schedule required under §141.702. This description must address the position of the sampling location in relation to the system's water source(s) and treatment processes, including pretreatment, points of chemical treatment, and filter backwash recycle. If the State does not respond to a system regarding sampling location(s), the system must sample at the reported location(s).

§141.704 Analytical methods.

(a) *Cryptosporidium.* Systems must analyze for *Cryptosporidium* using *Method 1623: Cryptosporidium and Giardia in Water by Filtration/IMS/FA,* 2005, United States Environmental Protection Agency, EPA–815–R–05–002 or *Method 1622: Cryptosporidium in Water by Filtration/IMS/FA,* 2005, United States Environmental Protection Agency, EPA–815–R–05–001, which are incorporated by reference, or alternative methods listed in appendix A to subpart C of this part. The Director of the Federal Register approves this incorporation by reference in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. You may obtain a copy of these methods online from *http://www.epa.gov/safewater/disinfection/lt2* or from the United States Environmental Protection Agency, Office of Ground Water and Drinking Water, 1201 Constitution Ave., NW., Washington, DC 20460 (*Telephone:* 800–426–4791). You may inspect a copy at the Water Docket in the EPA Docket Center, 1301 Constitution Ave., NW., Washington, DC (*Telephone:* 202–566–2426) or at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202–741–6030, or go to: *http://www.archives.gov/federal | register/code | of | federal | regulations/ibr | locations.html.*

(1) Systems must analyze at least a 10 L sample or a packed pellet volume of at least 2 mL as generated by the methods listed in paragraph (a) of this section. Systems unable to process a 10 L sample must analyze as much sample volume as can be filtered by two filters approved by EPA for the methods listed in paragraph (a) of this section, up to a packed pellet volume of at least 2 mL.

(2)(i) Matrix spike (MS) samples, as required by the methods in paragraph (a) of this section, must be spiked and filtered by a laboratory approved for *Cryptosporidium* analysis under §141.705.

(ii) If the volume of the MS sample is greater than 10 L, the system may filter all but 10 L of the MS sample in the field, and ship the filtered sample and the remaining 10 L of source water to the laboratory. In this case, the laboratory must spike the remaining 10 L of water and filter it through the filter used to collect the balance of the sample in the field.

(3) Flow cytometer-counted spiking suspensions must be used for MS samples and ongoing precision and recovery (OPR) samples.

(b) *E. coli.* System must use methods for enumeration of E. coli in source water approved in §136.3(a) of this chapter or alternative methods listed in appendix A to subpart C of this part.

(1) The time from sample collection to initiation of analysis may not exceed 30 hours unless the system meets the condition of paragraph (b)(2) of this section.

(2) The State may approve on a case-by-case basis the holding of an *E. coli* sample for up to 48 hours between sample collection and initiation of analysis if the State determines that analyzing an *E. coli* sample within 30 hours is not feasible. *E. coli* samples held between 30 to 48 hours must be analyzed by the Colilert reagent version of Standard Method 9223B as listed in §136.3(a) of this title.

(3) Systems must maintain samples between 0 °C and 10 °C during storage and transit to the laboratory.

(c) *Turbidity.* Systems must use methods for turbidity measurement approved in §141.74(a)(1).

[71 FR 769, Jan. 5, 2006, as amended at 74 FR 30959, June 29, 2009]

§141.705 Approved laboratories.

(a) *Cryptosporidium.* Systems must have *Cryptosporidium* samples analyzed by a laboratory that is approved under EPA's Laboratory Quality Assurance Evaluation Program for Analysis of *Cryptosporidium* in Water or a laboratory that has been certified for

Cryptosporidium analysis by an equivalent State laboratory certification program.

(b) *E. coli.* Any laboratory certified by the EPA, the National Environmental Laboratory Accreditation Conference or the State for total coliform or fecal coliform analysis under §141.74 is approved for *E. coli* analysis under this subpart when the laboratory uses the same technique for *E. coli* that the laboratory uses for §141.74.

(c) *Turbidity.* Measurements of turbidity must be made by a party approved by the State.

§141.706 Reporting source water monitoring results.

(a) Systems must report results from the source water monitoring required under §141.701 no later than 10 days after the end of the first month following the month when the sample is collected.

(b)(1) All systems serving at least 10,000 people must report the results from the initial source water monitoring required under §141.701(a) to EPA electronically at *https://intranet.epa.gov/lt2/.*

(2) If a system is unable to report monitoring results electronically, the system may use an alternative approach for reporting monitoring results that EPA approves.

(c) Systems serving fewer than 10,000 people must report results from the initial source water monitoring required under §141.701(a) to the State.

(d) All systems must report results from the second round of source water monitoring required under §141.701(b) to the State.

(e) Systems must report the applicable information in paragraphs (e)(1) and (2) of this section for the source water monitoring required under §141.701.

(1) Systems must report the following data elements for each *Cryptosporidium* analysis:

Data element.
1. PWS ID.
2. Facility ID.
3. Sample collection date.
4. Sample type (field or matrix spike).
5. Sample volume filtered (L), to nearest Ú L.
6. Was 100% of filtered volume examined.
7. Number of oocysts counted.

(i) For matrix spike samples, systems must also report the sample volume spiked and estimated number of oocysts spiked. These data are not required for field samples.

(ii) For samples in which less than 10 L is filtered or less than 100% of the sample volume is examined, systems must also report the number of filters used and the packed pellet volume.

(iii) For samples in which less than 100% of sample volume is examined, systems must also report the volume of resuspended concentrate and volume of this resuspension processed through immunomagnetic separation.

(2) Systems must report the following data elements for each *E. coli* analysis:

Data element.
1. PWS ID.
2. Facility ID.
3. Sample collection date.
4. Analytical method number.
5. Method type.
6. Source type (flowing stream, lake/reservoir, GWUDI).
7. *E. coli*/100 mL.
8. Turbidity.[1]

[1] Systems serving fewer than 10,000 people that are not required to monitor for turbidity under §141.701 are not required to report turbidity with their *E. coli* results.

§141.707 Grandfathering previously collected data.

(a)(1) Systems may comply with the initial source water monitoring requirements of §141.701(a) by grandfathering sample results collected before the system is required to begin monitoring (*i.e.*, previously collected data). To be grandfathered, the sample results and analysis must meet the criteria in this section and the State must approve.

(2) A filtered system may grandfather *Cryptosporidium* samples to meet the requirements of §141.701(a) when the system does not have corresponding *E. coli* and turbidity samples. A system that grandfathers *Cryptosporidium* samples without *E. coli* and turbidity samples is not required to collect *E. coli* and turbidity samples when the system completes the requirements for *Cryptosporidium* monitoring under §141.701(a).

(b) *E. coli sample analysis.* The analysis of *E. coli* samples must meet the analytical method and approved laboratory requirements of §§141.704 through 141.705.

(c) *Cryptosporidium sample analysis.* The analysis of *Cryptosporidium* samples must meet the criteria in this paragraph.

(1) Laboratories analyzed *Cryptosporidium* samples using one of the analytical methods in paragraphs (c)(1)(i) through (vi) of this section, which are incorporated by reference. The Director of the Federal Register approves this incorporation by reference in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. You may obtain a copy of these methods on-line from the United States Environmental Protection Agency, Office of Ground Water and Drinking Water, 1201 Constitution Ave, NW, Washington, DC 20460 (Telephone: 800–426–4791). You may inspect a copy at the Water Docket in the EPA Docket Center, 1301 Constitution Ave., NW, Washington, DC, (Telephone: 202–566–2426) or at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202–741–6030, or go to: *http://www.archives.gov/federal | register/code | of | federal | regulations/ibr | locations.html.*

(i) *Method 1623: Cryptosporidium and Giardia in Water by Filtration/IMS/FA,* 2005, United States Environmental Protection Agency, EPA–815–R–05–002.

(ii) *Method 1622: Cryptosporidium in Water by Filtration/IMS/FA,* 2005, United States Environmental Protection Agency, EPA–815–R–05–001.

(iii) *Method 1623: Cryptosporidium and Giardia in Water by Filtration/IMS/FA,* 2001, United States Environmental Protection Agency, EPA–821–R–01–025.

(iv) *Method 1622: Cryptosporidium in Water by Filtration/IMS/FA,* 2001, United States Environmental Protection Agency, EPA–821–-R–01–026.

(v) *Method 1623: Cryptosporidium and Giardia in Water by Filtration/IMS/FA,* 1999, United States Environmental Protection Agency, EPA–821–R–99–006.

(vi) *Method 1622: Cryptosporidium in Water by Filtration/IMS/FA,* 1999, United States Environmental Protection Agency, EPA–821–R–99–001.

(2) For each *Cryptosporidium* sample, the laboratory analyzed at least 10 L of sample or at least 2 mL of packed pellet or as much volume as could be filtered by 2 filters that EPA approved for the methods listed in paragraph (c)(1) of this section.

(d) *Sampling location.* The sampling location must meet the conditions in §141.703.

(e) *Sampling frequency. Cryptosporidium* samples were collected no less frequently than each calendar month on a regular schedule, beginning no earlier than January 1999. Sample collection intervals may vary for the conditions specified in §141.702(b)(1) and (2) if the system provides documentation of the condition when reporting monitoring results.

(1) The State may approve grandfathering of previously collected data where there are time gaps in the sampling frequency if the system conducts additional monitoring the State specifies to ensure that the data used to comply with the initial source water monitoring requirements of §141.701(a) are seasonally representative and unbiased.

(2) Systems may grandfather previously collected data where the sampling frequency within each month varied. If the *Cryptosporidium* sampling frequency varied, systems must follow the monthly averaging procedure in §141.710(b)(5) or §141.712(a)(3), as applicable, when calculating the bin classification for filtered systems or the mean *Cryptosporidium* concentration for unfiltered systems.

(f) *Reporting monitoring results for grandfathering.* Systems that request to grandfather previously collected monitoring results must report the following information by the applicable dates listed in this paragraph. Systems serving at least 10,000 people must report this information to EPA unless the State approves reporting to the State rather than EPA. Systems serving fewer than 10,000 people must report this information to the State.

(1) Systems must report that they intend to submit previously collected monitoring results for grandfathering. This report must specify the number of previously collected results the system will submit, the dates of the first and last sample, and whether a system will

conduct additional source water monitoring to meet the requirements of §141.701(a). Systems must report this information no later than the date the sampling schedule under §141.702 is required.

(2) Systems must report previously collected monitoring results for grandfathering, along with the associated documentation listed in paragraphs (f)(2)(i) through (iv) of this section, no later than two months after the applicable date listed in §141.701(c).

(i) For each sample result, systems must report the applicable data elements in §141.706.

(ii) Systems must certify that the reported monitoring results include all results the system generated during the time period beginning with the first reported result and ending with the final reported result. This applies to samples that were collected from the sampling location specified for source water monitoring under this subpart, not spiked, and analyzed using the laboratory's routine process for the analytical methods listed in this section.

(iii) Systems must certify that the samples were representative of a plant's source water(s) and the source water(s) have not changed. Systems must report a description of the sampling location(s), which must address the position of the sampling location in relation to the system's water source(s) and treatment processes, including points of chemical addition and filter backwash recycle.

(iv) For *Cryptosporidium* samples, the laboratory or laboratories that analyzed the samples must provide a letter certifying that the quality control criteria specified in the methods listed in paragraph (c)(1) of this section were met for each sample batch associated with the reported results. Alternatively, the laboratory may provide bench sheets and sample examination report forms for each field, matrix spike, IPR, OPR, and method blank sample associated with the reported results.

(g) If the State determines that a previously collected data set submitted for grandfathering was generated during source water conditions that were not normal for the system, such as a drought, the State may disapprove the data. Alternatively, the State may approve the previously collected data if the system reports additional source water monitoring data, as determined by the State, to ensure that the data set used under §141.710 or §141.712 represents average source water conditions for the system.

(h) If a system submits previously collected data that fully meet the number of samples required for initial source water monitoring under §141.701(a) and some of the data are rejected due to not meeting the requirements of this section, systems must conduct additional monitoring to replace rejected data on a schedule the State approves. Systems are not required to begin this additional monitoring until two months after notification that data have been rejected and additional monitoring is necessary.

DISINFECTION PROFILING AND BENCHMARKING REQUIREMENTS

§141.708 Requirements when making a significant change in disinfection practice.

(a) Following the completion of initial source water monitoring under §141.701(a), a system that plans to make a significant change to its disinfection practice, as defined in paragraph (b) of this section, must develop disinfection profiles and calculate disinfection benchmarks for *Giardia lamblia* and viruses as described in §141.709. Prior to changing the disinfection practice, the system must notify the State and must include in this notice the information in paragraphs (a)(1) through (3) of this section.

(1) A completed disinfection profile and disinfection benchmark for *Giardia lamblia* and viruses as described in §141.709.

(2) A description of the proposed change in disinfection practice.

(3) An analysis of how the proposed change will affect the current level of disinfection.

(b) Significant changes to disinfection practice are defined as follows:

(1) Changes to the point of disinfection;

(2) Changes to the disinfectant(s) used in the treatment plant;

(3) Changes to the disinfection process; or

(4) Any other modification identified by the State as a significant change to disinfection practice.

§141.709 Developing the disinfection profile and benchmark.

(a) Systems required to develop disinfection profiles under §141.708 must follow the requirements of this section. Systems must monitor at least weekly for a period of 12 consecutive months to determine the total log inactivation for *Giardia lamblia* and viruses. If systems monitor more frequently, the monitoring frequency must be evenly spaced. Systems that operate for fewer than 12 months per year must monitor weekly during the period of operation. Systems must determine log inactivation for *Giardia lamblia* through the entire plant, based on $CT_{99.9}$ values in Tables 1.1 through 1.6, 2.1 and 3.1 of §141.74(b) as applicable. Systems must determine log inactivation for viruses through the entire treatment plant based on a protocol approved by the State.

(b) Systems with a single point of disinfectant application prior to the entrance to the distribution system must conduct the monitoring in paragraphs (b)(1) through (4) of this section. Systems with more than one point of disinfectant application must conduct the monitoring in paragraphs (b)(1) through (4) of this section for each disinfection segment. Systems must monitor the parameters necessary to determine the total inactivation ratio, using analytical methods in §141.74(a).

(1) For systems using a disinfectant other than UV, the temperature of the disinfected water must be measured at each residual disinfectant concentration sampling point during peak hourly flow or at an alternative location approved by the State.

(2) For systems using chlorine, the pH of the disinfected water must be measured at each chlorine residual disinfectant concentration sampling point during peak hourly flow or at an alternative location approved by the State.

(3) The disinfectant contact time(s) (t) must be determined during peak hourly flow.

(4) The residual disinfectant concentration(s) (C) of the water before or at the first customer and prior to each additional point of disinfectant application must be measured during peak hourly flow.

(c) In lieu of conducting new monitoring under paragraph (b) of this section, systems may elect to meet the requirements of paragraphs (c)(1) or (2) of this section.

(1) Systems that have at least one year of existing data that are substantially equivalent to data collected under the provisions of paragraph (b) of this section may use these data to develop disinfection profiles as specified in this section if the system has neither made a significant change to its treatment practice nor changed sources since the data were collected. Systems may develop disinfection profiles using up to three years of existing data.

(2) Systems may use disinfection profile(s) developed under §141.172 or §§141.530 through 141.536 in lieu of developing a new profile if the system has neither made a significant change to its treatment practice nor changed sources since the profile was developed. Systems that have not developed a virus profile under §141.172 or §§141.530 through 141.536 must develop a virus profile using the same monitoring data on which the *Giardia lamblia* profile is based.

(d) Systems must calculate the total inactivation ratio for *Giardia lamblia* as specified in paragraphs (d)(1) through (3) of this section.

(1) Systems using only one point of disinfectant application may determine the total inactivation ratio for the disinfection segment based on either of the methods in paragraph (d)(1)(i) or (ii) of this section.

(i) Determine one inactivation ratio ($CTcalc/CT_{99.9}$) before or at the first customer during peak hourly flow.

(ii) Determine successive $CTcalc/CT_{99.9}$ values, representing sequential inactivation ratios, between the point of disinfectant application and a point before or at the first customer during peak hourly flow. The system must calculate the total inactivation ratio by determining ($CTcalc/CT_{99.9}$) for each sequence and then adding the (CTcalc/

$CT_{99.9}$) values together to determine (S ($CTcalc/CT_{99.9}$)).

(2) Systems using more than one point of disinfectant application before the first customer must determine the CT value of each disinfection segment immediately prior to the next point of disinfectant application, or for the final segment, before or at the first customer, during peak hourly flow. The ($CTcalc/CT_{99.9}$) value of each segment and (S ($CTcalc/CT_{99.9}$)) must be calculated using the method in paragraph (d)(1)(ii) of this section.

(3) The system must determine the total logs of inactivation by multiplying the value calculated in paragraph (d)(1) or (d)(2) of this section by 3.0.

(4) Systems must calculate the log of inactivation for viruses using a protocol approved by the State.

(e) Systems must use the procedures specified in paragraphs (e)(1) and (2) of this section to calculate a disinfection benchmark.

(1) For each year of profiling data collected and calculated under paragraphs (a) through (d) of this section, systems must determine the lowest mean monthly level of both *Giardia lamblia* and virus inactivation. Systems must determine the mean *Giardia lamblia* and virus inactivation for each calendar month for each year of profiling data by dividing the sum of daily or weekly *Giardia lamblia* and virus log inactivation by the number of values calculated for that month.

(2) The disinfection benchmark is the lowest monthly mean value (for systems with one year of profiling data) or the mean of the lowest monthly mean values (for systems with more than one year of profiling data) of *Giardia lamblia* and virus log inactivation in each year of profiling data.

TREATMENT TECHNIQUE REQUIREMENTS

§141.710 Bin classification for filtered systems.

(a) Following completion of the initial round of source water monitoring required under §141.701(a), filtered systems must calculate an initial *Cryptosporidium* bin concentration for each plant for which monitoring was required. Calculation of the bin concentration must use the *Cryptosporidium* results reported under §141.701(a) and must follow the procedures in paragraphs (b)(1) through (5) of this section.

(b)(1) For systems that collect a total of at least 48 samples, the bin concentration is equal to the arithmetic mean of all sample concentrations.

(2) For systems that collect a total of at least 24 samples, but not more than 47 samples, the bin concentration is equal to the highest arithmetic mean of all sample concentrations in any 12 consecutive months during which *Cryptosporidium* samples were collected.

(3) For systems that serve fewer than 10,000 people and monitor for *Cryptosporidium* for only one year (*i.e.*, collect 24 samples in 12 months), the bin concentration is equal to the arithmetic mean of all sample concentrations.

(4) For systems with plants operating only part of the year that monitor fewer than 12 months per year under §141.701(e), the bin concentration is equal to the highest arithmetic mean of all sample concentrations during any year of *Cryptosporidium* monitoring.

(5) If the monthly *Cryptosporidium* sampling frequency varies, systems must first calculate a monthly average for each month of monitoring. Systems must then use these monthly average concentrations, rather than individual sample concentrations, in the applicable calculation for bin classification in paragraphs (b)(1) through (4) of this section.

(c) Filtered systems must determine their initial bin classification from the following table and using the *Cryptosporidium* bin concentration calculated under paragraphs (a)–(b) of this section:

BIN CLASSIFICATION TABLE FOR FILTERED SYSTEMS

For systems that are:	With a *Cryptosporidium* bin concentration of . . .[1]	The bin classification is . . .
. . . required to monitor for *Cryptosporidium* under §141.701.	*Cryptosporidium* $<$0.075 oocyst/L	Bin 1.
	0.075 oocysts/L $\leq$*Cryptosporidium* $<$1.0 oocysts/L.	Bin 2.
	1.0 oocysts/L $\leq$*Cryptosporidium* $<$3.0 oocysts/L.	Bin 3.
	Cryptosporidium $\geq$3.0 oocysts/L	Bin 4.
. . . serving fewer than 10,000 people and NOT required to monitor for *Cryptosporidium* under §141.701(a)(4).	NA	Bin 1.

[1] Based on calculations in paragraph (a) or (d) of this section, as applicable.

(d) Following completion of the second round of source water monitoring required under §141.701(b), filtered systems must recalculate their *Cryptosporidium* bin concentration using the *Cryptosporidium* results reported under §141.701(b) and following the procedures in paragraphs (b)(1) through (4) of this section. Systems must then redetermine their bin classification using this bin concentration and the table in paragraph (c) of this section.

(e)(1) Filtered systems must report their initial bin classification under paragraph (c) of this section to the State for approval no later than 6 months after the system is required to complete initial source water monitoring based on the schedule in §141.701(c).

(2) Systems must report their bin classification under paragraph (d) of this section to the State for approval no later than 6 months after the system is required to complete the second round of source water monitoring based on the schedule in §141.701(c).

(3) The bin classification report to the State must include a summary of source water monitoring data and the calculation procedure used to determine bin classification.

(f) Failure to comply with the conditions of paragraph (e) of this section is a violation of the treatment technique requirement.

§141.711 Filtered system additional *Cryptosporidium* treatment requirements.

(a) Filtered systems must provide the level of additional treatment for *Cryptosporidium* specified in this paragraph based on their bin classification as determined under §141.710 and according to the schedule in §141.713.

If the system bin classification is . . .	And the system uses the following filtration treatment in full compliance with subparts H, P, and T of this part (as applicable), then the additional *Cryptosporidium* treatment requirements are . . .			
	Conventional filtration treatment (including softening)	Direct filtration	Slow sand or diatomaceous earth filtration	Alternative filtration technologies
Bin 1	No additional treatment	No additional treatment	No additional treatment	No additional treatment.
Bin 2	1-log treatment	1.5-log treatment	1-log treatment	(1)
Bin 3	2-log treatment	2.5-log treatment	2-log treatment	(2)
Bin 4	2.5-log treatment	3-log treatment	2.5-log treatment	(3)

[1] As determined by the State such that the total *Cryptosporidium* removal and inactivation is at least 4.0-log.
[2] As determined by the State such that the total *Cryptosporidium* removal and inactivation is at least 5.0-log.
[3] As determined by the State such that the total *Cryptosporidium* removal and inactivation is at least 5.5-log.

(b)(1) Filtered systems must use one or more of the treatment and management options listed in §141.715, termed the microbial toolbox, to comply with the additional *Cryptosporidium* treatment required in paragraph (a) of this section.

(2) Systems classified in Bin 3 and Bin 4 must achieve at least 1-log of the additional *Cryptosporidium* treatment required under paragraph (a) of this section using either one or a combination of the following: bag filters, bank

filtration, cartridge filters, chlorine dioxide, membranes, ozone, or UV, as described in §§141.716 through 141.720.

(c) Failure by a system in any month to achieve treatment credit by meeting criteria in §§141.716 through 141.720 for microbial toolbox options that is at least equal to the level of treatment required in paragraph (a) of this section is a violation of the treatment technique requirement.

(d) If the State determines during a sanitary survey or an equivalent source water assessment that after a system completed the monitoring conducted under §141.701(a) or §141.701(b), significant changes occurred in the system's watershed that could lead to increased contamination of the source water by *Cryptosporidium*, the system must take actions specified by the State to address the contamination. These actions may include additional source water monitoring and/or implementing microbial toolbox options listed in §141.715.

§141.712 Unfiltered system *Cryptosporidium* treatment requirements.

(a) *Determination of mean Cryptosporidium level.* (1) Following completion of the initial source water monitoring required under §141.701(a), unfiltered systems must calculate the arithmetic mean of all *Cryptosporidium* sample concentrations reported under §141.701(a). Systems must report this value to the State for approval no later than 6 months after the month the system is required to complete initial source water monitoring based on the schedule in §141.701(c).

(2) Following completion of the second round of source water monitoring required under §141.701(b), unfiltered systems must calculate the arithmetic mean of all *Cryptosporidium* sample concentrations reported under §141.701(b). Systems must report this value to the State for approval no later than 6 months after the month the system is required to complete the second round of source water monitoring based on the schedule in §141.701(c).

(3) If the monthly *Cryptosporidium* sampling frequency varies, systems must first calculate a monthly average for each month of monitoring. Systems must then use these monthly average concentrations, rather than individual sample concentrations, in the calculation of the mean *Cryptosporidium* level in paragraphs (a)(1) or (2) of this section.

(4) The report to the State of the mean *Cryptosporidium* levels calculated under paragraphs (a)(1) and (2) of this section must include a summary of the source water monitoring data used for the calculation.

(5) Failure to comply with the conditions of paragraph (a) of this section is a violation of the treatment technique requirement.

(b) *Cryptosporidium inactivation requirements.* Unfiltered systems must provide the level of inactivation for *Cryptosporidium* specified in this paragraph, based on their mean *Cryptosporidium* levels as determined under paragraph (a) of this section and according to the schedule in §141.713.

(1) Unfiltered systems with a mean *Cryptosporidium* level of 0.01 oocysts/L or less must provide at least 2-log *Cryptosporidium* inactivation.

(2) Unfiltered systems with a mean *Cryptosporidium* level of greater than 0.01 oocysts/L must provide at least 3-log *Cryptosporidium* inactivation.

(c) *Inactivation treatment technology requirements.* Unfiltered systems must use chlorine dioxide, ozone, or UV as described in §141.720 to meet the *Cryptosporidium* inactivation requirements of this section.

(1) Systems that use chlorine dioxide or ozone and fail to achieve the *Cryptosporidium* inactivation required in paragraph (b) of this section on more than one day in the calendar month are in violation of the treatment technique requirement.

(2) Systems that use UV light and fail to achieve the *Cryptosporidium* inactivation required in paragraph (b) of this section by meeting the criteria in §141.720(d)(3)(ii) are in violation of the treatment technique requirement.

(d) *Use of two disinfectants.* Unfiltered systems must meet the combined *Cryptosporidium* inactivation requirements of this section and *Giardia lamblia* and virus inactivation requirements of §141.72(a) using a minimum of two disinfectants, and each of two disinfectants must separately achieve the total inactivation required for either *Cryptosporidium, Giardia lamblia,* or viruses.

§141.713 Schedule for compliance with *Cryptosporidium* treatment requirements.

(a) Following initial bin classification under §141.710(c), filtered systems must provide the level of treatment for *Cryptosporidium* required under §141.711 according to the schedule in paragraph (c) of this section.

(b) Following initial determination of the mean *Cryptosporidium* level under §141.712(a)(1), unfiltered systems must provide the level of treatment for *Cryptosporidium* required under §141.712 according to the schedule in paragraph (c) of this section.

(c) *Cryptosporidium treatment compliance dates.*

CRYPTOSPORIDIUM TREATMENT COMPLIANCE DATES TABLE

Systems that serve . . .	Must comply with Cryptosporidium treatment requirements no later than . . .[a]
(1) At least 100,000 people ...	(i) April 1, 2012.
(2) From 50,000 to 99,999 people.	(i) October 1, 2012.
(3) From 10,000 to 49,999 people.	(i) October 1, 2013.
(4) Fewer than 10,000 people	(i) October 1, 2014.

[a] States may allow up to an additional two years for complying with the treatment requirement for systems making capital improvements.

(d) If the bin classification for a filtered system changes following the second round of source water monitoring, as determined under §141.710(d), the system must provide the level of treatment for *Cryptosporidium* required under §141.711 on a schedule the State approves.

(e) If the mean *Cryptosporidium* level for an unfiltered system changes following the second round of monitoring, as determined under §141.712(a)(2), and if the system must provide a different level of *Cryptosporidium* treatment under §141.712 due to this change, the system must meet this treatment requirement on a schedule the State approves.

§141.714 Requirements for uncovered finished water storage facilities.

(a) Systems using uncovered finished water storage facilities must comply with the conditions of this section.

(b) Systems must notify the State of the use of each uncovered finished water storage facility no later than April 1, 2008.

(c) Systems must meet the conditions of paragraph (c)(1) or (2) of this section for each uncovered finished water storage facility or be in compliance with a State-approved schedule to meet these conditions no later than April 1, 2009.

(1) Systems must cover any uncovered finished water storage facility.

(2) Systems must treat the discharge from the uncovered finished water storage facility to the distribution system to achieve inactivation and/or removal of at least 4-log virus, 3-log *Giardia lamblia,* and 2-log *Cryptosporidium* using a protocol approved by the State.

(d) Failure to comply with the requirements of this section is a violation of the treatment technique requirement.

REQUIREMENTS FOR MICROBIAL TOOLBOX COMPONENTS

§141.715 Microbial toolbox options for meeting *Cryptosporidium* treatment requirements.

(a)(1) Systems receive the treatment credits listed in the table in paragraph (b) of this section by meeting the conditions for microbial toolbox options described in §§141.716 through 141.720. Systems apply these treatment credits to meet the treatment requirements in §141.711 or §141.712, as applicable.

(2) Unfiltered systems are eligible for treatment credits for the microbial toolbox options described in §141.720 only.

(b) The following table summarizes options in the microbial toolbox:

MICROBIAL TOOLBOX SUMMARY TABLE: OPTIONS, TREATMENT CREDITS AND CRITERIA

Toolbox Option	*Cryptosporidium* treatment credit with design and implementation criteria
Source Protection and Management Toolbox Options	
(1) Watershed control program	0.5-log credit for State-approved program comprising required elements, annual program status report to State, and regular watershed survey. Unfiltered systems are not eligible for credit. Specific criteria are in §141.716(a).
(2) Alternative source/intake management	No prescribed credit. Systems may conduct simultaneous monitoring for treatment bin classification at alternative intake locations or under alternative intake management strategies. Specific criteria are in §141.716(b).
Pre Filtration Toolbox Options	
(3) Presedimentation basin with coagulation.	0.5-log credit during any month that presedimentation basins achieve a monthly mean reduction of 0.5-log or greater in turbidity or alternative State-approved performance criteria. To be eligible, basins must be operated continuously with coagulant addition and all plant flow must pass through basins. Specific criteria are in §141.717(a).
(4) Two-stage lime softening	0.5-log credit for two-stage softening where chemical addition and hardness precipitation occur in both stages. All plant flow must pass through both stages. Single-stage softening is credited as equivalent to conventional treatment. Specific criteria are in §141.717(b).
(5) Bank filtration	0.5-log credit for 25-foot setback; 1.0-log credit for 50-foot setback; aquifer must be unconsolidated sand containing at least 10 percent fines; average turbidity in wells must be less than 1 NTU. Systems using wells followed by filtration when conducting source water monitoring must sample the well to determine bin classification and are not eligible for additional credit. Specific criteria are in §141.717(c).
Treatment Performance Toolbox Options	
(6) Combined filter performance	0.5-log credit for combined filter effluent turbidity less than or equal to 0.15 NTU in at least 95 percent of measurements each month. Specific criteria are in §141.718(a).
(7) Individual filter performance	0.5-log credit (in addition to 0.5-log combined filter performance credit) if individual filter effluent turbidity is less than or equal to 0.15 NTU in at least 95 percent of samples each month in each filter and is never greater than 0.3 NTU in two consecutive measurements in any filter. Specific criteria are in §141.718(b).
(8) Demonstration of performance	Credit awarded to unit process or treatment train based on a demonstration to the State with a State-approved protocol. Specific criteria are in §141.718(c).
Additional Filtration Toolbox Options	
(9) Bag or cartridge filters (individual filters)	Up to 2-log credit based on the removal efficiency demonstrated during challenge testing with a 1.0-log factor of safety. Specific criteria are in §141.719(a).
(10) Bag or cartridge filters (in series)	Up to 2.5-log credit based on the removal efficiency demonstrated during challenge testing with a 0.5-log factor of safety. Specific criteria are in §141.719(a).
(11) Membrane filtration	Log credit equivalent to removal efficiency demonstrated in challenge test for device if supported by direct integrity testing. Specific criteria are in §141.719(b).
(12) Second stage filtration	0.5-log credit for second separate granular media filtration stage if treatment train includes coagulation prior to first filter. Specific criteria are in §141.719(c)
(13) Slow sand filters	2.5-log credit as a secondary filtration step; 3.0-log credit as a primary filtration process. No prior chlorination for either option. Specific criteria are in §141.719(d).
Inactivation Toolbox Options	
(14) Chlorine dioxide	Log credit based on measured CT in relation to CT table. Specific criteria in §141.720(b)
(15) Ozone	Log credit based on measured CT in relation to CT table. Specific criteria in §141.720(b).
(16) UV	Log credit based on validated UV dose in relation to UV dose table; reactor validation testing required to establish UV dose and associated operating conditions. Specific criteria in §141.720(d).

§141.716 Source toolbox components.

(a) *Watershed control program.* Systems receive 0.5-log *Cryptosporidium* treatment credit for implementing a watershed control program that meets the requirements of this section.

(1) Systems that intend to apply for the watershed control program credit must notify the State of this intent no

later than two years prior to the treatment compliance date applicable to the system in §141.713.

(2) Systems must submit to the State a proposed watershed control plan no later than one year before the applicable treatment compliance date in §141.713. The State must approve the watershed control plan for the system to receive watershed control program treatment credit. The watershed control plan must include the elements in paragraphs (a)(2)(i) through (iv) of this section.

(i) Identification of an ''area of influence'' outside of which the likelihood of *Cryptosporidium* or fecal contamination affecting the treatment plant intake is not significant. This is the area to be evaluated in future watershed surveys under paragraph (a)(5)(ii) of this section.

(ii) Identification of both potential and actual sources of *Cryptosporidium* contamination and an assessment of the relative impact of these sources on the system's source water quality.

(iii) An analysis of the effectiveness and feasibility of control measures that could reduce *Cryptosporidium* loading from sources of contamination to the system's source water.

(iv) A statement of goals and specific actions the system will undertake to reduce source water *Cryptosporidium* levels. The plan must explain how the actions are expected to contribute to specific goals, identify watershed partners and their roles, identify resource requirements and commitments, and include a schedule for plan implementation with deadlines for completing specific actions identified in the plan.

(3) Systems with existing watershed control programs (*i.e.*, programs in place on January 5, 2006) are eligible to seek this credit. Their watershed control plans must meet the criteria in paragraph (a)(2) of this section and must specify ongoing and future actions that will reduce source water *Cryptosporidium* levels.

(4) If the State does not respond to a system regarding approval of a watershed control plan submitted under this section and the system meets the other requirements of this section, the watershed control program will be considered approved and 0.5 log *Cryptosporidium* treatment credit will be awarded unless and until the State subsequently withdraws such approval.

(5) Systems must complete the actions in paragraphs (a)(5)(i) through (iii) of this section to maintain the 0.5-log credit.

(i) Submit an annual watershed control program status report to the State. The annual watershed control program status report must describe the system's implementation of the approved plan and assess the adequacy of the plan to meet its goals. It must explain how the system is addressing any shortcomings in plan implementation, including those previously identified by the State or as the result of the watershed survey conducted under paragraph (a)(5)(ii) of this section. It must also describe any significant changes that have occurred in the watershed since the last watershed sanitary survey. If a system determines during implementation that making a significant change to its approved watershed control program is necessary, the system must notify the State prior to making any such changes. If any change is likely to reduce the level of source water protection, the system must also list in its notification the actions the system will take to mitigate this effect.

(ii) Undergo a watershed sanitary survey every three years for community water systems and every five years for noncommunity water systems and submit the survey report to the State. The survey must be conducted according to State guidelines and by persons the State approves.

(A) The watershed sanitary survey must meet the following criteria: encompass the region identified in the State-approved watershed control plan as the area of influence; assess the implementation of actions to reduce source water *Cryptosporidium* levels; and identify any significant new sources of *Cryptosporidium.*

(B) If the State determines that significant changes may have occurred in the watershed since the previous watershed sanitary survey, systems must undergo another watershed sanitary survey by a date the State requires, which may be earlier than the regular date in paragraph (a)(5)(ii) of this section.

(iii) The system must make the watershed control plan, annual status reports, and watershed sanitary survey reports available to the public upon request. These documents must be in a plain language style and include criteria by which to evaluate the success of the program in achieving plan goals. The State may approve systems to withhold from the public portions of the annual status report, watershed control plan, and watershed sanitary survey based on water supply security considerations.

(6) If the State determines that a system is not carrying out the approved watershed control plan, the State may withdraw the watershed control program treatment credit.

(b) *Alternative source.* (1) A system may conduct source water monitoring that reflects a different intake location (either in the same source or for an alternate source) or a different procedure for the timing or level of withdrawal from the source (alternative source monitoring). If the State approves, a system may determine its bin classification under §141.710 based on the alternative source monitoring results.

(2) If systems conduct alternative source monitoring under paragraph (b)(1) of this section, systems must also monitor their current plant intake concurrently as described in §141.701.

(3) Alternative source monitoring under paragraph (b)(1) of this section must meet the requirements for source monitoring to determine bin classification, as described in §§141.701 through 141.706. Systems must report the alternative source monitoring results to the State, along with supporting information documenting the operating conditions under which the samples were collected.

(4) If a system determines its bin classification under §141.710 using alternative source monitoring results that reflect a different intake location or a different procedure for managing the timing or level of withdrawal from the source, the system must relocate the intake or permanently adopt the withdrawal procedure, as applicable, no later than the applicable treatment compliance date in §141.713.

§141.717 Pre-filtration treatment toolbox components.

(a) *Presedimentation.* Systems receive 0.5-log *Cryptosporidium* treatment credit for a presedimentation basin during any month the process meets the criteria in this paragraph.

(1) The presedimentation basin must be in continuous operation and must treat the entire plant flow taken from a surface water or GWUDI source.

(2) The system must continuously add a coagulant to the presedimentation basin.

(3) The presedimentation basin must achieve the performance criteria in paragraph (3)(i) or (ii) of this section.

(i) Demonstrates at least 0.5-log mean reduction of influent turbidity. This reduction must be determined using daily turbidity measurements in the presedimentation process influent and effluent and must be calculated as follows: $\log_{10}$(monthly mean of daily influent turbidity) ¥ $\log_{10}$(monthly mean of daily effluent turbidity).

(ii) Complies with State-approved performance criteria that demonstrate at least 0.5-log mean removal of micron-sized particulate material through the presedimentation process.

(b) *Two-stage lime softening.* Systems receive an additional 0.5-log *Cryptosporidium* treatment credit for a two-stage lime softening plant if chemical addition and hardness precipitation occur in two separate and sequential softening stages prior to filtration. Both softening stages must treat the entire plant flow taken from a surface water or GWUDI source.

(c) *Bank filtration.* Systems receive *Cryptosporidium* treatment credit for bank filtration that serves as pretreatment to a filtration plant by meeting the criteria in this paragraph. Systems using bank filtration when they begin source water monitoring under §141.701(a) must collect samples as described in §141.703(d) and are not eligible for this credit.

(1) Wells with a ground water flow path of at least 25 feet receive 0.5-log treatment credit; wells with a ground water flow path of at least 50 feet receive 1.0-log treatment credit. The ground water flow path must be determined as specified in paragraph (c)(4) of this section.

(2) Only wells in granular aquifers are eligible for treatment credit. Granular aquifers are those comprised of sand, clay, silt, rock fragments, pebbles or larger particles, and minor cement. A system must characterize the aquifer at the well site to determine aquifer properties. Systems must extract a core from the aquifer and demonstrate that in at least 90 percent of the core length, grains less than 1.0 mm in diameter constitute at least 10 percent of the core material.

(3) Only horizontal and vertical wells are eligible for treatment credit.

(4) For vertical wells, the ground water flow path is the measured distance from the edge of the surface water body under high flow conditions (determined by the 100 year floodplain elevation boundary or by the floodway, as defined in Federal Emergency Management Agency flood hazard maps) to the well screen. For horizontal wells, the ground water flow path is the measured distance from the bed of the river under normal flow conditions to the closest horizontal well lateral screen.

(5) Systems must monitor each wellhead for turbidity at least once every four hours while the bank filtration process is in operation. If monthly average turbidity levels, based on daily maximum values in the well, exceed 1 NTU, the system must report this result to the State and conduct an assessment within 30 days to determine the cause of the high turbidity levels in the well. If the State determines that microbial removal has been compromised, the State may revoke treatment credit until the system implements corrective actions approved by the State to remediate the problem.

(6) Springs and infiltration galleries are not eligible for treatment credit under this section, but are eligible for credit under §141.718(c).

(7) *Bank filtration demonstration of performance.* The State may approve *Cryptosporidium* treatment credit for bank filtration based on a demonstration of performance study that meets the criteria in this paragraph. This treatment credit may be greater than 1.0-logand may be awarded to bank filtration that does not meet the criteria in paragraphs (c)(1)–(5) of this section.

(i) The study must follow a State-approved protocol and must involve the collection of data on the removal of *Cryptosporidium* or a surrogate for *Cryptosporidium* and related hydrogeologic and water quality parameters during the full range of operating conditions.

(ii) The study must include sampling both from the production well(s) and from monitoring wells that are screened and located along the shortest flow path between the surface water source and the production well(s).

§141.718 Treatment performance toolbox components.

(a) *Combined filter performance.* Systems using conventional filtration treatment or direct filtration treatment receive an additional 0.5-log *Cryptosporidium* treatment credit during any month the system meets the criteria in this paragraph. Combined filter effluent (CFE) turbidity must be less than or equal to 0.15 NTU in at least 95 percent of the measurements. Turbidity must be measured as described in §141.74(a) and (c).

(b) *Individual filter performance.* Systems using conventional filtration treatment or direct filtration treatment receive 0.5-log *Cryptosporidium* treatment credit, which can be in addition to the 0.5-log credit under paragraph (a) of this section, during any month the system meets the criteria in this paragraph. Compliance with these criteria must be based on individual filter turbidity monitoring as described in §141.174 or §141.560, as applicable.

(1) The filtered water turbidity for each individual filter must be less than or equal to 0.15 NTU in at least 95 percent of the measurements recorded each month.

(2) No individual filter may have a measured turbidity greater than 0.3 NTU in two consecutive measurements taken 15 minutes apart.

(3) Any system that has received treatment credit for individual filter performance and fails to meet the requirements of paragraph (b)(1) or (2) of this section during any month does not receive a treatment technique violation under §141.711(c) if the State determines the following:

(i) The failure was due to unusual and short-term circumstances that could not reasonably be prevented through optimizing treatment plant design, operation, and maintenance.

(ii) The system has experienced no more than two such failures in any calendar year.

(c) *Demonstration of performance.* The State may approve *Cryptosporidium* treatment credit for drinking water treatment processes based on a demonstration of performance study that meets the criteria in this paragraph. This treatment credit may be greater than or less than the prescribed treatment credits in §141.711 or §§141.717 through 141.720 and may be awarded to treatment processes that do not meet the criteria for the prescribed credits.

(1) Systems cannot receive the prescribed treatment credit for any toolbox box option in §§141.717 through 141.720 if that toolbox option is included in a demonstration of performance study for which treatment credit is awarded under this paragraph.

(2) The demonstration of performance study must follow a State-approved protocol and must demonstrate the level of *Cryptosporidium* reduction the treatment process will achieve under the full range of expected operating conditions for the system.

(3) Approval by the State must be in writing and may include monitoring and treatment performance criteria that the system must demonstrate and report on an ongoing basis to remain eligible for the treatment credit. The State may designate such criteria where necessary to verify that the conditions under which the demonstration of performance credit was approved are maintained during routine operation.

§141.719 Additional filtration toolbox components.

(a) *Bag and cartridge filters.* Systems receive *Cryptosporidium* treatment credit of up to 2.0-logfor individual bag or cartridge filters and up to 2.5-logfor bag or cartridge filters operated in series by meeting the criteria in paragraphs (a)(1) through (10) of this section. To be eligible for this credit, systems must report the results of challenge testing that meets the requirements of paragraphs (a)(2) through (9) of this section to the State. The filters must treat the entire plant flow taken from a subpart H source.

(1) The *Cryptosporidium* treatment credit awarded to bag or cartridge filters must be based on the removal efficiency demonstrated during challenge testing that is conducted according to the criteria in paragraphs (a)(2) through (a)(9) of this section. A factor of safety equal to 1-log for individual bag or cartridge filters and 0.5-log for bag or cartridge filters in series must be applied to challenge testing results to determine removal credit. Systems may use results from challenge testing conducted prior to January 5, 2006 if the prior testing was consistent with the criteria specified in paragraphs (a)(2) through (9) of this section.

(2) Challenge testing must be performed on full-scale bag or cartridge filters, and the associated filter housing or pressure vessel, that are identical in material and construction to the filters and housings the system will use for removal of *Cryptosporidium.* Bag or cartridge filters must be challenge tested in the same configuration that the system will use, either as individual filters or as a series configuration of filters.

(3) Challenge testing must be conducted using *Cryptosporidium* or a surrogate that is removed no more efficiently than *Cryptosporidium.* The microorganism or surrogate used during challenge testing is referred to as the challenge particulate. The concentration of the challenge particulate must be determined using a method capable of discreetly quantifying the specific microorganism or surrogate used in the test; gross measurements such as turbidity may not be used.

(4) The maximum feed water concentration that can be used during a challenge test must be based on the detection limit of the challenge particulate in the filtrate (*i.e.*, filtrate detection limit) and must be calculated using the following equation:

$$\text{Maximum Feed Concentration} = 1 \times 10^4 \times (\text{Filtrate Detection Limit})$$

(5) Challenge testing must be conducted at the maximum design flow rate for the filter as specified by the manufacturer.

(6) Each filter evaluated must be tested for a duration sufficient to reach 100 percent of the terminal pressure drop, which establishes the maximum pressure drop under which the filter may be used to comply with the requirements of this subpart.

(7) Removal efficiency of a filter must be determined from the results of the challenge test and expressed in terms of log removal values using the following equation:

$$LRV = LOG_{10}(C_f) - LOG_{10}(C_p)$$

Where:

LRV = log removal value demonstrated during challenge testing; C_f = the feed concentration measured during the challenge test; and C_p = the filtrate concentration measured during the challenge test. In applying this equation, the same units must be used for the feed and filtrate concentrations. If the challenge particulate is not detected in the filtrate, then the term C_p must be set equal to the detection limit.

(8) Each filter tested must be challenged with the challenge particulate during three periods over the filtration cycle: within two hours of start-up of a new filter; when the pressure drop is between 45 and 55 percent of the terminal pressure drop; and at the end of the cycle after the pressure drop has reached 100 percent of the terminal pressure drop. An LRV must be calculated for each of these challenge periods for each filter tested. The LRV for the filter (LRV_{filter}) must be assigned the value of the minimum LRV observed during the three challenge periods for that filter.

(9) If fewer than 20 filters are tested, the overall removal efficiency for the filter product line must be set equal to the lowest LRV_{filter} among the filters tested. If 20 or more filters are tested, the overall removal efficiency for the filter product line must be set equal to the 10th percentile of the set of LRV_{filter} values for the various filters tested. The percentile is defined by (i/(n+1)) where i is the rank of n individual data points ordered lowest to highest. If necessary, the 10th percentile may be calculated using linear interpolation.

(10) If a previously tested filter is modified in a manner that could change the removal efficiency of the filter product line, challenge testing to demonstrate the removal efficiency of the modified filter must be conducted and submitted to the State.

(b) *Membrane filtration.* (1) Systems receive *Cryptosporidium* treatment credit for membrane filtration that meets the criteria of this paragraph. Membrane cartridge filters that meet the definition of membrane filtration in §141.2 are eligible for this credit. The level of treatment credit a system receives is equal to the lower of the values determined under paragraph (b)(1)(i) and (ii) of this section.

(i) The removal efficiency demonstrated during challenge testing conducted under the conditions in paragraph (b)(2) of this section.

(ii) The maximum removal efficiency that can be verified through direct integrity testing used with the membrane filtration process under the conditions in paragraph (b)(3) of this section.

(2) *Challenge testing.* The membrane used by the system must undergo challenge testing to evaluate removal efficiency, and the system must report the results of challenge testing to the State. Challenge testing must be conducted according to the criteria in paragraphs (b)(2)(i) through (vii) of this section. Systems may use data from challenge testing conducted prior to January 5, 2006 if the prior testing was consistent with the criteria in paragraphs (b)(2)(i) through (vii) of this section.

(i) Challenge testing must be conducted on either a full-scale membrane module, identical in material and construction to the membrane modules used in the system's treatment facility, or a smaller-scale membrane module, identical in material and similar in construction to the full-scale module. A module is defined as the smallest component of a membrane unit in which a specific membrane surface area is housed in a device with a filtrate outlet structure.

(ii) Challenge testing must be conducted using *Cryptosporidium* oocysts or a surrogate that is removed no more efficiently than *Cryptosporidium* oocysts. The organism or surrogate used during challenge testing is referred to as the challenge particulate. The concentration of the challenge particulate, in both the feed and filtrate water, must be determined using a method capable of discretely quantifying the specific challenge particulate used in the test; gross measurements such as turbidity may not be used.

(iii) The maximum feed water concentration that can be used during a challenge test is based on the detection limit of the challenge particulate in the filtrate and must be determined according to the following equation:

$$\text{Maximum Feed Concentration} = 3.16 \times 10^6 \times (\text{Filtrate Detection Limit})$$

(iv) Challenge testing must be conducted under representative hydraulic conditions at the maximum design flux and maximum design process recovery specified by the manufacturer for the membrane module. Flux is defined as the throughput of a pressure driven membrane process expressed as flow per unit of membrane area. Recovery is defined as the volumetric percent of feed water that is converted to filtrate over the course of an operating cycle uninterrupted by events such as chemical cleaning or a solids removal process (*i.e.*, backwashing).

(v) Removal efficiency of a membrane module must be calculated from the challenge test results and expressed as a log removal value according to the following equation:

$$\text{LRV} = \text{LOG}_{10}(C_f) \text{ ¥ } \text{LOG}_{10}(C_p)$$

Where:

LRV = log removal value demonstrated during the challenge test; C_f = the feed concentration measured during the challenge test; and C_p = the filtrate concentration measured during the challenge test. Equivalent units must be used for the feed and filtrate concentrations. If the challenge particulate is not detected in the filtrate, the term C_p is set equal to the detection limit for the purpose of calculating the LRV. An LRV must be calculated for each membrane module evaluated during the challenge test.

(vi) The removal efficiency of a membrane filtration process demonstrated during challenge testing must be expressed as a log removal value ($\text{LRV}_{\text{C-Test}}$). If fewer than 20 modules are tested, then $\text{LRV}_{\text{C-Test}}$ is equal to the lowest of the representative LRVs among the modules tested. If 20 or more modules are tested, then $\text{LRV}_{\text{C-Test}}$ is equal to the 10th percentile of the representative LRVs among the modules tested. The percentile is defined by $(i/(n+1))$ where i is the rank of n individual data points ordered lowest to highest. If necessary, the 10th percentile may be calculated using linear interpolation.

(vii) The challenge test must establish a quality control release value (QCRV) for a non-destructive performance test that demonstrates the *Cryptosporidium* removal capability of the membrane filtration module. This performance test must be applied to each production membrane module used by the system that was not directly challenge tested in order to verify *Cryptosporidium* removal capability. Production modules that do not meet the established QCRV are not eligible for the treatment credit demonstrated during the challenge test.

(viii) If a previously tested membrane is modified in a manner that could change the removal efficiency of the membrane or the applicability of the non-destructive performance test and associated QCRV, additional challenge testing to demonstrate the removal efficiency of, and determine a new QCRV for, the modified membrane must be conducted and submitted to the State.

(3) *Direct integrity testing.* Systems must conduct direct integrity testing in a manner that demonstrates a removal efficiency equal to or greater than the removal credit awarded to the membrane filtration process and meets the requirements described in paragraphs (b)(3)(i) through (vi) of this section. A direct integrity test is defined as a physical test applied to a membrane unit in order to identify and isolate integrity breaches (*i.e.*, one or more leaks that could result in contamination of the filtrate).

(i) The direct integrity test must be independently applied to each membrane unit in service. A membrane unit is defined as a group of membrane modules that share common valving that allows the unit to be isolated from the rest of the system for the purpose of integrity testing or other maintenance.

(ii) The direct integrity method must have a resolution of 3 micrometers or less, where resolution is defined as the size of the smallest integrity breach that contributes to a response from the direct integrity test.

(iii) The direct integrity test must have a sensitivity sufficient to verify the log treatment credit awarded to the membrane filtration process by the State, where sensitivity is defined as the maximum log removal value that can be reliably verified by a direct integrity test. Sensitivity must be determined using the approach in either paragraph (b)(3)(iii)(A) or (B) of this section as applicable to the type of direct integrity test the system uses.

(A) For direct integrity tests that use an applied pressure or vacuum, the direct integrity test sensitivity must be calculated according to the following equation:

$$LRV_{DIT} = LOG_{10} (Q_p /(VCF \times Q_{breach}))$$

Where:

LRV_{DIT} = the sensitivity of the direct integrity test; Q_p = total design filtrate flow from the membrane unit; Q_{breach} = flow of water from an integrity breach associated with the smallest integrity test response that can be reliably measured, and VCF = volumetric concentration factor. The volumetric concentration factor is the ratio of the suspended solids concentration on the high pressure side of the membrane relative to that in the feed water.

(B) For direct integrity tests that use a particulate or molecular marker, the direct integrity test sensitivity must be calculated according to the following equation:

$$LRV_{DIT} = LOG_{10}(C_f) \text{ ¥ } LOG_{10}(C_p)$$

Where:

LRV_{DIT} = the sensitivity of the direct integrity test; C_f = the typical feed concentration of the marker used in the test; and C_p = the filtrate concentration of the marker from an integral membrane unit.

(iv) Systems must establish a control limit within the sensitivity limits of the direct integrity test that is indicative of an integral membrane unit capable of meeting the removal credit awarded by the State.

(v) If the result of a direct integrity test exceeds the control limit established under paragraph (b)(3)(iv) of this section, the system must remove the membrane unit from service. Systems must conduct a direct integrity test to verify any repairs, and may return the membrane unit to service only if the direct integrity test is within the established control limit.

(vi) Systems must conduct direct integrity testing on each membrane unit at a frequency of not less than once each day that the membrane unit is in operation. The State may approve less frequent testing, based on demonstrated process reliability, the use of multiple barriers effective for *Cryptosporidium*, or reliable process safeguards.

(4) *Indirect integrity monitoring.* Systems must conduct continuous indirect integrity monitoring on each membrane unit according to the criteria in paragraphs (b)(4)(i) through (v) of this section. Indirect integrity monitoring is defined as monitoring some aspect of filtrate water quality that is indicative of the removal of particulate matter. A system that implements continuous direct integrity testing of membrane units in accordance with the criteria in paragraphs (b)(3)(i) through (v) of this section is not subject to the requirements for continuous indirect integrity monitoring. Systems must submit a monthly report to the State summarizing all continuous indirect integrity monitoring results triggering direct integrity testing and the corrective action that was taken in each case.

(i) Unless the State approves an alternative parameter, continuous indirect integrity monitoring must include continuous filtrate turbidity monitoring.

(ii) Continuous monitoring must be conducted at a frequency of no less than once every 15 minutes.

(iii) Continuous monitoring must be separately conducted on each membrane unit.

(iv) If indirect integrity monitoring includes turbidity and if the filtrate turbidity readings are above 0.15 NTU for a period greater than 15 minutes (*i.e.*, two consecutive 15-minute readings above 0.15 NTU), direct integrity testing must immediately be performed on the associated membrane unit as specified in paragraphs (b)(3)(i) through (v) of this section.

(v) If indirect integrity monitoring includes a State-approved alternative parameter and if the alternative parameter exceeds a State-approved control limit for a period greater than 15 minutes, direct integrity testing must immediately be performed on the associated membrane units as specified in paragraphs (b)(3)(i) through (v) of this section.

(c) *Second stage filtration*. Systems receive 0.5-log *Cryptosporidium* treatment credit for a separate second stage of filtration that consists of sand, dual media, GAC, or other fine grain media following granular media filtration if the State approves. To be eligible for this credit, the first stage of filtration must be preceded by a coagulation step and both filtration stages must treat the entire plant flow taken from a surface water or GWUDI source. A cap, such as GAC, on a single stage of filtration is not eligible for this credit. The State must approve the treatment credit based on an assessment of the design characteristics of the filtration process.

(d) *Slow sand filtration (as secondary filter)*. Systems are eligible to receive 2.5-log *Cryptosporidium* treatment credit for a slow sand filtration process that follows a separate stage of filtration if both filtration stages treat entire plant flow taken from a surface water or GWUDI source and no disinfectant residual is present in the influent water to the slow sand filtration process. The State must approve the treatment credit based on an assessment of the design characteristics of the filtration process. This paragraph does not apply to treatment credit awarded to slow sand filtration used as a primary filtration process.

[71 FR 769, Jan. 5, 2006; 71 FR 6136, Feb. 6, 2006]

§141.720 Inactivation toolbox components.

(a) *Calculation of CT values.* (1) CT is the product of the disinfectant contact time (T, in minutes) and disinfectant concentration (C, in milligrams per liter). Systems with treatment credit for chlorine dioxide or ozone under paragraph (b) or (c) of this section must calculate CT at least once each day, with both C and T measured during peak hourly flow as specified in §§141.74(a) through (b).

(2) Systems with several disinfection segments in sequence may calculate CT for each segment, where a disinfection segment is defined as a treatment unit process with a measurable disinfectant residual level and a liquid volume. Under this approach, systems must add the *Cryptosporidium* CT values in each segment to determine the total CT for the treatment plant.

(b) *CT values for chlorine dioxide and ozone.* (1) Systems receive the *Cryptosporidium* treatment credit listed in this table by meeting the corresponding chlorine dioxide CT value for the applicable water temperature, as described in paragraph (a) of this section.

CT VALUES (MG·MIN/L) FOR *Cryptosporidium* INACTIVATION BY CHLORINE DIOXIDE [1]

Log credit	Water Temperature, °C										
	<=0.5	1	2	3	5	7	10	15	20	25	30
(i) 0.25	159	153	140	128	107	90	69	45	29	19	12
(ii) 0.5	319	305	279	256	214	180	138	89	58	38	24
(iii) 1.0	637	610	558	511	429	360	277	179	116	75	49
(iv) 1.5	956	915	838	767	643	539	415	268	174	113	73
(v) 2.0	1275	1220	1117	1023	858	719	553	357	232	150	98
(vi) 2.5	1594	1525	1396	1278	1072	899	691	447	289	188	122
(vii) 3.0	1912	1830	1675	1534	1286	1079	830	536	347	226	147

[1] Systems may use this equation to determine log credit between the indicated values: Log credit = $(0.001506 \times (1.09116)^{Temp}) \times CT$.

(2) Systems receive the *Cryptosporidium* treatment credit listed in this table by meeting the corresponding ozone CT values for the applicable water temperature, as described in paragraph (a) of this section.

CT Values (mg·min/L) for *Cryptosporidium* Inactivation by Ozone[1]

Log credit	Water Temperature, °C										
	<=0.5	1	2	3	5	7	10	15	20	25	30
(i) 0.25	6.0	5.8	5.2	4.8	4.0	3.3	2.5	1.6	1.0	0.6	0.39
(ii) 0.5	12	12	10	9.5	7.9	6.5	4.9	3.1	2.0	1.2	0.78
(iii) 1.0	24	23	21	19	16	13	9.9	6.2	3.9	2.5	1.6
(iv) 1.5	36	35	31	29	24	20	15	9.3	5.9	3.7	2.4
(v) 2.0	48	46	42	38	32	26	20	12	7.8	4.9	3.1
(vi) 2.5	60	58	52	48	40	33	25	16	9.8	6.2	3.9
(vii) 3.0	72	69	63	57	47	39	30	19	12	7.4	4.7

[1] Systems may use this equation to determine log credit between the indicated values: Log credit = $(0.0397 \times (1.09757)^{\mathrm{Temp}}) \times \mathrm{CT}$.

(c) *Site-specific study.* The State may approve alternative chlorine dioxide or ozone CT values to those listed in paragraph (b) of this section on a site-specific basis. The State must base this approval on a site-specific study a system conducts that follows a State-approved protocol.

(d) *Ultraviolet light.* Systems receive *Cryptosporidium*, *Giardia lamblia*, and virus treatment credits for ultraviolet (UV) light reactors by achieving the corresponding UV dose values shown in paragraph (d)(1) of this section. Systems must validate and monitor UV reactors as described in paragraphs (d)(2) and (3) of this section to demonstrate that they are achieving a particular UV dose value for treatment credit.

(1) *UV dose table.* The treatment credits listed in this table are for UV light at a wavelength of 254 nm as produced by a low pressure mercury vapor lamp. To receive treatment credit for other lamp types, systems must demonstrate an equivalent germicidal dose through reactor validation testing, as described in paragraph (d)(2) of this section. The UV dose values in this table are applicable only to post-filter applications of UV in filtered systems and to unfiltered systems.

UV Dose Table for *Cryptosporidium, Giardia lamblia,* and Virus Inactivation Credit

Log credit	*Cryptosporidium* UV dose (mJ/cm^2)	*Giardia lamblia* UV dose (mJ/cm^2)	Virus UV dose (mJ/cm^2)
(i) 0.5	1.6	1.5	39
(ii) 1.0	2.5	2.1	58
(iii) 1.5	3.9	3.0	79
(iv) 2.0	5.8	5.2	100
(v) 2.5	8.5	7.7	121
(vi) 3.0	12	11	143
(vii) 3.5	15	15	163
(viii) 4.0	22	22	186

(2) *Reactor validation testing.* Systems must use UV reactors that have undergone validation testing to determine the operating conditions under which the reactor delivers the UV dose required in paragraph (d)(1) of this section (*i.e.*, validated operating conditions). These operating conditions must include flow rate, UV intensity as measured by a UV sensor, and UV lamp status.

(i) When determining validated operating conditions, systems must account for the following factors: UV absorbance of the water; lamp fouling and aging; measurement uncertainty of online sensors; UV dose distributions arising from the velocity profiles through the reactor; failure of UV lamps or other critical system components; and inlet and outlet piping or channel configurations of the UV reactor.

(ii) Validation testing must include the following: Full scale testing of a reactor that conforms uniformly to the UV reactors used by the system and inactivation of a test microorganism whose dose response characteristics have been quantified with a low pressure mercury vapor lamp.

(iii) The State may approve an alternative approach to validation testing.

(3) *Reactor monitoring.* (i) Systems must monitor their UV reactors to determine if the reactors are operating within validated conditions, as determined under paragraph (d)(2) of this section. This monitoring must include UV intensity as measured by a UV sensor, flow rate, lamp status, and other parameters the State designates based on UV reactor operation. Systems must verify the calibration of UV sensors and must recalibrate sensors in accordance with a protocol the State approves.

(ii) To receive treatment credit for UV light, systems must treat at least 95 percent of the water delivered to the public during each month by UV reactors operating within validated conditions for the required UV dose, as described in paragraphs (d)(1) and (2) of this section. Systems must demonstrate compliance with this condition by the monitoring required under paragraph (d)(3)(i) of this section.

REPORTING AND RECORDKEEPING REQUIREMENTS

§141.721 Reporting requirements.

(a) Systems must report sampling schedules under §141.702 and source water monitoring results under §141.706 unless they notify the State that they will not conduct source water monitoring due to meeting the criteria of §141.701(d).

(b) Systems must report the use of uncovered finished water storage facilities to the State as described in §141.714.

(c) Filtered systems must report their *Cryptosporidium* bin classification as described in §141.710.

(d) Unfiltered systems must report their mean source water *Cryptosporidium* level as described in §141.712.

(e) Systems must report disinfection profiles and benchmarks to the State as described in §§141.708 through 141.709 prior to making a significant change in disinfection practice.

(f) Systems must report to the State in accordance with the following table for any microbial toolbox options used to comply with treatment requirements under §141.711 or §141.712. Alternatively, the State may approve a system to certify operation within required parameters for treatment credit rather than reporting monthly operational data for toolbox options.

MICROBIAL TOOLBOX REPORTING REQUIREMENTS

Toolbox option	Systems must submit the following information	On the following schedule
(1) Watershed control program (WCP).	(i) Notice of intention to develop a new or continue an existing watershed control program.	No later than two years before the applicable treatment compliance date in §141.713
	(ii) Watershed control plan	No later than one year before the applicable treatment compliance date in §141.713.
	(iii) Annual watershed control program status report.	Every 12 months, beginning one year after the applicable treatment compliance date in §141.713.
	(iv) Watershed sanitary survey report	For community water systems, every three years beginning three years after the applicable treatment compliance date in §141.713. For noncommunity water systems, every five years beginning five years after the applicable treatment compliance date in §141.713.
(2) Alternative source/intake management.	Verification that system has relocated the intake or adopted the intake withdrawal procedure reflected in monitoring results.	No later than the applicable treatment compliance date in §141.713.

MICROBIAL TOOLBOX REPORTING REQUIREMENTS—Continued

Toolbox option	Systems must submit the following information	On the following schedule
(3) Presedimentation	Monthly verification of the following: (i) Continuous basin operation (ii) Treatment of 100% of the flow (iii) Continuous addition of a coagulant (iv) At least 0.5-log mean reduction of influent turbidity or compliance with alternative State-approved performance criteria.	Monthly reporting within 10 days following the month in which the monitoring was conducted, beginning on the applicable treatment compliance date in §141.713.
(4) Two-stage lime softening	Monthly verification of the following: (i) Chemical addition and hardness precipitation occurred in two separate and sequential softening stages prior to filtration (ii) Both stages treated 100% of the plant flow.	Monthly reporting within 10 days following the month in which the monitoring was conducted, beginning on the applicable treatment compliance date in §141.713.
(5) Bank filtration	(i) Initial demonstration of the following: (A) Unconsolidated, predominantly sandy aquifer (B) Setback distance of at least 25 ft. (0.5-log credit) or 50 ft. (1.0-log credit).	No later than the applicable treatment compliance date in §141.713.
	(ii) If monthly average of daily max turbidity is greater than 1 NTU then system must report result and submit an assessment of the cause..	Report within 30 days following the month in which the monitoring was conducted, beginning on the applicable treatment compliance date in §141.713.
(6) Combined filter performance	Monthly verification of combined filter effluent (CFE) turbidity levels less than or equal to 0.15 NTU in at least 95 percent of the 4 hour CFE measurements taken each month.	Monthly reporting within 10 days following the month in which the monitoring was conducted, beginning on the applicable treatment compliance date in §141.713.
(7) Individual filter performance	Monthly verification of the following: (i) Individual filter effluent (IFE) turbidity levels less than or equal to 0.15 NTU in at least 95 percent of samples each month in each filter (ii) No individual filter greater than 0.3 NTU in two consecutive readings 15 minutes apart.	Monthly reporting within 10 days following the month in which the monitoring was conducted, beginning on the applicable treatment compliance date in §141.713.]
(8) Demonstration of performance	(i) Results from testing following a State approved protocol.	No later than the applicable treatment compliance date in §141.713.
	(ii) As required by the State, monthly verification of operation within conditions of State approval for demonstration of performance credit.	Within 10 days following the month in which monitoring was conducted, beginning on the applicable treatment compliance date in §141.713.
(9) Bag filters and cartridge filters	(i) Demonstration that the following criteria are met: (A) Process meets the definition of bag or cartridge filtration; (B) Removal efficiency established through challenge testing that meets criteria in this subpart.	No later than the applicable treatment compliance date in §141.713.
	(ii) Monthly verification that 100% of plant flow was filtered.	Within 10 days following the month in which monitoring was conducted, beginning on the applicable treatment compliance date in §141.713.
(10) Membrane filtration	(i) Results of verification testing demonstrating the following: (A) Removal efficiency established through challenge testing that meets criteria in this subpart; (B) Integrity test method and parameters, including resolution, sensitivity, test frequency, control limits, and associated baseline.	No later than the applicable treatment compliance date in §141.713.
	(ii) Monthly report summarizing the following: (A) All direct integrity tests above the control limit; (B) If applicable, any turbidity or alternative state-approved indirect integrity monitoring results triggering direct integrity testing and the corrective action that was taken.	Within 10 days following the month in which monitoring was conducted, beginning on the applicable treatment compliance date in §141.713.
(11) Second stage filtration	Monthly verification that 100% of flow was filtered through both stages and that first stage was preceded by coagulation step.	Within 10 days following the month in which monitoring was conducted, beginning on the applicable treatment compliance date in §141.713.

MICROBIAL TOOLBOX REPORTING REQUIREMENTS—Continued

Toolbox option	Systems must submit the following information	On the following schedule
(12) Slow sand filtration (as secondary filter).	Monthly verification that both a slow sand filter and a preceding separate stage of filtration treated 100% of flow from subpart H sources..	Within 10 days following the month in which monitoring was conducted, beginning on the applicable treatment compliance date in §141.713.
(13) Chlorine dioxide	Summary of CT values for each day as described in §141.720..	Within 10 days following the month in which monitoring was conducted, beginning on the applicable treatment compliance date in §141.713.
(14) Ozone	Summary of CT values for each day as described in §141.720..	Within 10 days following the month in which monitoring was conducted, beginning on the applicable treatment compliance date in §141.713.
(15) UV	(i) Validation test results demonstrating operating conditions that achieve required UV dose.	No later than the applicable treatment compliance date in §141.713.
	(ii) Monthly report summarizing the percentage of water entering the distribution system that was not treated by UV reactors operating within validated conditions for the required dose as specified in 141.720(d)..	Within 10 days following the month in which monitoring was conducted, beginning on the applicable treatment compliance date in §141.713.

§141.722 Recordkeeping requirements.

(a) Systems must keep results from the initial round of source water monitoring under §141.701(a) and the second round of source water monitoring under §141.701(b) until 3 years after bin classification under §141.710 for filtered systems or determination of the mean *Cryptosporidium* level under §141.710 for unfiltered systems for the particular round of monitoring.

(b) Systems must keep any notification to the State that they will not conduct source water monitoring due to meeting the criteria of §141.701(d) for 3 years.

(c) Systems must keep the results of treatment monitoring associated with microbial toolbox options under §§141.716 through 141.720 and with uncovered finished water reservoirs under §141.714, as applicable, for 3 years.

REQUIREMENTS FOR SANITARY SURVEYS PERFORMED BY EPA

§141.723 Requirements to respond to significant deficiencies identified in sanitary surveys performed by EPA.

(a) A sanitary survey is an onsite review of the water source (identifying sources of contamination by using results of source water assessments where available), facilities, equipment, operation, maintenance, and monitoring compliance of a PWS to evaluate the adequacy of the PWS, its sources and operations, and the distribution of safe drinking water.

(b) For the purposes of this section, a significant deficiency includes a defect in design, operation, or maintenance, or a failure or malfunction of the sources, treatment, storage, or distribution system that EPA determines to be causing, or has the potential for causing the introduction of contamination into the water delivered to consumers.

(c) For sanitary surveys performed by EPA, systems must respond in writing to significant deficiencies identified in sanitary survey reports no later than 45 days after receipt of the report, indicating how and on what schedule the system will address significant deficiencies noted in the survey.

(d) Systems must correct significant deficiencies identified in sanitary survey reports according to the schedule approved by EPA, or if there is no approved schedule, according to the schedule reported under paragraph (c) of this section if such deficiencies are within the control of the system.

Subpart X—Aircraft Drinking Water Rule

SOURCE: 74 FR 53618, Oct. 19, 2009, unless otherwise noted.

§141.800 Applicability and compliance date.

(a) *Applicability.* The requirements of this subpart constitute the National Primary Drinking Water Regulations for aircraft that are public water systems and that board only finished water for human consumption. Aircraft public water systems are considered transient non-community water systems (TNCWS). To the extent there is a conflict between the requirements in this subpart and the regulatory requirements established elsewhere in this part, this subpart governs.

(b) *Compliance date.* Aircraft public water systems must comply, unless otherwise noted, with the requirements of this subpart beginning October 19, 2011. Until this compliance date, air carriers remain subject to existing national primary drinking water regulations.

§141.801 Definitions.

As used in this subpart, the term:

Administrator means the Administrator of the United States Environmental Protection Agency or his/her authorized representative.

Air carrier means a person who undertakes directly by lease, or other arrangement, to engage in air transportation. The air carrier is responsible for ensuring all of the aircraft it owns or operates that are public water systems comply with all provisions of this subpart.

Aircraft means a device that is used or intended to be used for flight in the air.

Aircraft water system means an aircraft that qualifies as a public water system under the Safe Drinking Water Act and the national primary drinking water regulations. The components of an aircraft water system include the water service panel, the filler neck of the aircraft finished water storage tank, and all finished water storage tanks, piping, treatment equipment, and plumbing fixtures within the aircraft that supply water for human consumption to passengers or crew.

Aircraft water system operations and maintenance plan means the schedules and procedures for operating, monitoring, and maintaining an aircraft water system that is included in an aircraft operation and maintenance program accepted by the Federal Aviation Administration. (14 CFR part 43, 14 CFR part 91, 14 CFR part 121)

Finished water means water that is introduced into the distribution system of a public water system and is intended for distribution and consumption without further treatment, except as treatment necessary to maintain water quality in the distribution system (e.g., supplemental disinfection, addition of corrosion control chemicals). (40 CFR 141.2)

Human consumption means drinking, bathing, showering, hand washing, teeth brushing, food preparation, dishwashing, and maintaining oral hygiene.

Self inspection means an onsite review of the aircraft water system, including the water service panel, the filler neck of the aircraft finished water storage tank; all finished water storage tanks, piping, treatment equipment, and plumbing fixtures; and a review of the aircraft operations, maintenance, monitoring, and recordkeeping for the purpose of evaluating the adequacy of such water system components and practices for providing safe drinking water to passengers and crew.

Watering point means the water supply, methods, and facilities used for the delivery of finished water to the aircraft. These facilities may include water trucks, carts, cabinets, and hoses.

§141.802 Coliform sampling plan.

(a) Each air carrier under this subpart must develop a coliform sampling plan covering each aircraft water system owned or operated by the air carrier that identifies the following:

(1) Coliform sample collection procedures that are consistent with the requirements of §141.803(a) and (b).

(2) Sample tap location(s) representative of the aircraft water system as specified in §141.803(b)(2) and (b)(4).

(3) Frequency and number of routine coliform samples to be collected as specified in §141.803(b)(3).

(4) Frequency of routine disinfection and flushing as specified in the operations and maintenance plan under §141.804.

(5) Procedures for communicating sample results promptly so that any

required actions, including repeat and follow-up sampling, corrective action, and notification of passengers and crew, will be conducted in a timely manner.

(b) Each air carrier must develop a coliform sampling plan for each aircraft with a water system meeting the definition of a public water system by April 19, 2011.

(c) The coliform sampling plan must be included in the Aircraft Water System Operations and Maintenance Plan required in §141.804. Any subsequent changes to the coliform sampling plan must also be included in the Aircraft Water System Operations and Maintenance Plan required in §141.804.

§141.803 Coliform sampling.

(a) *Analytical methodology.* Air carriers must follow the sampling and analysis requirements under this section.

(1) The standard sample volume required for total coliform analysis, regardless of analytical method used, is 100 mL.

(2) Air carriers need determine only the presence or absence of total coliforms and/or *E. coli*; a determination of density of these organisms is not required.

(3) Air carriers must conduct analyses for total coliform and *E. coli* in accordance with the analytical methods approved in §141.21(f)(3) and 141.21(f)(6)) until March 31, 2016, and in accordance with the analytical methods approved in §141.852 beginning April 1, 2016.

(4) The time from sample collection to initiation of analysis may not exceed 30 hours. Systems are encouraged but not required to hold samples below 10 °C during transit.

(5) The invalidation of a total coliform sample result can be made only by the Administrator in accordance with §141.21(c)(1)(i), (ii), or (iii) or by the certified laboratory in accordance with §141.21(c)(2) until March 31, 2016, or in accordance with §141.853(c) beginning April 1, 2016, with the Administrator acting as the State.

(6) *Certified laboratories.* For the purpose of determining compliance with this subpart, samples may be considered only if they have been analyzed by a laboratory certified by a State or EPA. For the purposes of this paragraph, ''State'' refers to a State or Tribe that has received primacy for public water systems (other than aircraft water systems) under section 1413 of SDWA.

(b) *Routine monitoring.* For each aircraft water system, the sampling frequency must be determined by the disinfection and flushing frequency recommended by the aircraft water system manufacturer, when available, and as identified in the operations and maintenance plan in §141.804.

(1) Except as provided in paragraph (b)(2) of this section, the air carrier must collect two 100 mL total coliform routine samples at the frequency specified in the sampling plan in §141.802 and in accordance with paragraph (b)(3) of this section;

(2) The air carrier may collect one 100 mL total coliform routine sample at the frequency specified in the sampling plan in §141.802 for aircraft with a removable or portable tank that is drained every day of passenger service, and the aircraft has only one tap. Aircraft meeting the requirements of this paragraph do not have to comply with paragraph (b)(4) of this section.

(3) Air carriers must perform routine monitoring for total coliform at a frequency corresponding to the frequency of routine disinfection and flushing as specified in the Table b–1 (Routine Disinfection and Flushing and Routine Sample Frequencies). Air carriers must follow the disinfection and flushing frequency recommended by the aircraft water system manufacturer, when available. Where the aircraft water system manufacturer does not specify a recommended routine disinfection and flushing frequency, the air carrier must choose a frequency from Table b–1 (Routine Disinfection and Flushing and Routine Sample Frequencies):

TABLE B–1—ROUTINE DISINFECTION AND FLUSHING AND ROUTINE SAMPLE FREQUENCIES

Minimum routine disinfection & flushing per aircraft	Minimum frequency of routine samples per aircraft
At least 4 times per year = At least once within every three-month period (quarterly).	At least 1 time per year = At least once within every twelve-month period (annually).
At least 3 times per year = At least once within every four-month period.	At least 2 times per year = At least once within every six-month period (semi-annually).
At least 2 times per year = At least once within every six-month period (semi-annually).	At least 4 times per year = At least once within every three-month period (quarterly).
At least 1 time per year or less = At least once within every twelve-monthperiod (annually) or less.	At least 12 times per year = At least once every month (monthly).

(4) One sample must be taken from a lavatory and one from a galley; each sample must be analyzed for total coliform. If only one water tap is located in the aircraft water system due to aircraft model type and construction, then a single tap may be used to collect two separate 100 mL samples.

(5) If any routine, repeat, or follow-up coliform sample is total coliform-positive, the air carrier must analyze that total coliform-positive culture medium to determine if *E. coli* is present.

(6) Routine total coliform samples must not be collected within 72 hours after completing routine disinfection and flushing procedures.

(c) *Routine coliform sample results*—(1) *Negative routine coliform sample results.* If all routine sample results are total coliform-negative, then the air carrier must maintain the routine monitoring frequency for total coliform as specified in the sampling plan in §141.802.

(2) *Positive routine E. coli sample results.* If any routine sample is *E. coli*-positive, the air carrier must perform all of the following:

(i) *Restrict public access.* Restrict public access to the aircraft water system in accordance with paragraph (d) of this section as expeditiously as possible, but in no case later than 24 hours after the laboratory notifies the air carrier of the *E. coli*-positive result or discovery of the applicable failure as specified in paragraphs (g) and (h) of this section. All public access restrictions, including applicable public notification requirements, must remain in-place until the aircraft water system has been disinfected and flushed and a complete set of follow-up samples is total coliform-negative;and

(ii) *Disinfect and flush.* Conduct disinfection and flushing in accordance with §141.804(b)(2). If the aircraft water system cannot be physically disconnected or shut-off,or the flow of water otherwise prevented through the tap(s), then the air carrier must disinfect and flush the system no later than 72 hours after the laboratory notifies the air carrier of the *E. coli*-positive result or discovery of the applicable failure as specified in paragraphs (g) and (h) of this section; and

(iii) *Follow-up sampling.* Collect follow-up samples in accordance with paragraph (e) of this section. A complete set of follow-up sample results must be total coliform-negative before the air carrier provides water for human consumption from the aircraft water system and returns to the routine monitoring frequency as specified in the sampling plan required by §141.802.

(3) *Positive routine total coliform sample results.* If any routine sample is total coliform-positive and *E. coli*-negative, then the air carrier must perform at least one of the following three corrective actions and continue through with that action until a complete set of follow-up or repeat samples is total coliform-negative:

(i) *Disinfect and flush.* In accordance with §141.804(b)(2), conduct disinfection and flushing of the system no later than 72 hours after the laboratory notifies the air carrier of the total coliform-positive and *E. coli*-negative result. After disinfection and flushing is completed, the air carrier must collect follow-up samples in accordance with paragraph (e) of this section prior to providing water for human consumption from the aircraft water system. A complete set of follow-up sample results must be total coliform-negative before the air carrier returns to the routine monitoring frequency as specified in the sampling plan required by §141.802; or

(ii) *Restrict public access.* In accordance with paragraph (d) of this section, restrict public access to the aircraft water system as expeditiously as possible, but in no case later than 72 hours after the laboratory notifies the air carrier of the total coliform-positive and *E. coli*-negative result or discovery of the applicable failure as specified in paragraphs (f), (g), and, (i) of this section. All public access restrictions, including applicable public notification requirements, must remain in-place until the aircraft water system has been disinfected and flushed, and a complete set of follow-up samples has been collected. The air carrier must conduct disinfection and flushing in accordance with §141.804(b)(2). After disinfection and flushing is completed, the air carrier must collect follow-up samples in accordance with paragraph (e) of this section prior to providing water for human consumption from the aircraft water system. A complete set of follow-up sample results must be total coliform-negative before the air carrier returns to the routine monitoring frequency as specified in the sampling plan required by §141.802; or

(iii) *Repeat sampling.* Collect three 100 mL repeat samples no later than 24 hours after the laboratory notifies the air carrier of the routine total coliform-positive and *E. coli*-negative result. Repeat samples must be collected and analyzed from three taps within the aircraft as follows: The tap which resulted in the total coliform-positive sample, one other lavatory tap, and one other galley tap. If fewer than three taps exist, then a total of three 100 mL samples must be collected and analyzed from the available taps within the aircraft water system.

(A) If all repeat samples are total coliform-negative, then the air carrier must maintain the routine monitoring frequency for total coliform as specified in the sampling plan in §141.802.

(B) If any repeat sample is *E. coli*-positive, the air carrier must perform all the corrective actions as specified in paragraphs (c)(2)(i), (c)(2)(ii), and (c)(2)(iii) of this section.

(C) If any repeat sample is total coliform-positive and *E. coli*-negative, then the air carrier must perform the corrective actions specified in paragraphs (c)(3)(i) or (c)(3)(ii) of this section, and continue through with that action until a complete set of follow-up samples is total coliform-negative.

(d) *Restriction of public access.* Restriction of public access to the aircraft water system includes, but need not be limited to, the following:

(1) Physically disconnecting or shutting off the aircraft water system, where feasible, or otherwise preventing the flow of water through the tap(s);

(2) Providing public notification to passengers and crew in accordance with §141.805.

(3) Providing alternatives to water from the aircraft water system, such as bottled water for drinking and coffee or tea preparation; antiseptic hand gels or wipes in accordance with 21 CFR part 333—''Topical Anti-microbial Drug Products for Over-the-Counter Human Use'' in the galleys and lavatories; and other feasible measures that reduce or eliminate the need to use the aircraft water system during the limited period before public use of the aircraft water system is unrestricted.

(e) *Post disinfection and flushing follow-up sampling.* Following corrective action disinfection and flushing, air carriers must comply with post disinfection and flushing follow-up sampling procedures that, at a minimum, consist of the following:

(1) For each aircraft water system, the air carrier must collect a complete set of total coliform follow-up samples consisting of two 100 mL total coliform samples at the same routine sample locations as identified in paragraphs (b)(2) and (b)(4) of this section.

(2) Follow-up samples must be collected prior to providing water to the public for human consumption from the aircraft water system.

(3) If a complete set of follow-up samples is total coliform-negative, the air carrier must return to the routine monitoring frequency for total coliform as specified in the sampling plan required by §141.802.

(4) If any follow-up sample is *E. coli*-positive, the air carrier must perform all the corrective actions as specified

in paragraphs (c)(2)(i), (c)(2)(ii), and (c)(2)(iii) of this section.

(5) If any follow-up sample is total coliform-positive and *E. coli*-negative the air carrier must restrict public access to the aircraft water system in accordance with paragraph (d) of this section as expeditiously as possible, but in no case later than 72 hours after the laboratory notifies the air carrier of the total coliform-positive and *E. coli*-negative result. All public access restrictions, including applicable public notification requirements, must remain in-place until the aircraft water system has been disinfected and flushed in accordance with §141.804(b)(2) and a complete set of follow-up samples is total coliform-negative. The air carrier must collect follow-up samples in accordance with paragraph (e) of this section. A complete set of follow-up sample results must be total coliform-negative before the air carrier provides water for human consumption from the aircraft water system and returns to the routine monitoring frequency for coliform as specified in §141.802.

(f) *Failure to perform required routine disinfection and flushing or failure to collect required routine samples.* If the air carrier fails to perform routine disinfection and flushing or fails to collect and analyze the required number of routine coliform samples, the air carrier must perform all the corrective actions as specified in paragraph (c)(3)(ii) of this section.

(g) *Failure to collect repeat or follow-up samples.* If the air carrier fails to collect and analyze the required follow-up samples as a result of an *E. coli*-positive result, then the air carrier must perform all the corrective actions as specified in paragraphs (c)(2)(i), (c)(2)(ii), and (c)(2)(iii) of this section. If the air carrier fails to collect and analyze the required repeat samples or follow-up samples as a result of a total coliform-positive and *E. coli*-negative result, then the air carrier must perform all the corrective actions as specified in paragraph (c)(3)(ii) of this section.

(h) *Failure to board water from a safe watering point (E. coli-positive).* For the aircraft water system, the air carrier must perform all the corrective actions specified in paragraphs (c)(2)(i), (c)(2)(ii), and (c)(2)(iii) of this section when it becomes aware of an *E. coli*-positive event resulting from:

(1) Boarding water from a watering point not in accordance with FDA regulations (21 CFR part 1240 subpart E), or

(2) Boarding water that does not meet NPDWRs applicable to transient non-community water systems (§§141.62 and 141.63, as applied to TNCWS),

(3) Boarding water that is otherwise determined to be unsafe due to noncompliance with the procedures specified in §141.804(b)(6).

(i) *Failure to board water from a safe watering point (non-E. coli-positive).* For the aircraft water system, the air carrier must perform all the corrective actions specified in paragraphs (c)(3)(ii) of this section when it becomes aware of a non-*E. coli*-positive event resulting from:

(1) Boarding water from a watering point not in accordance with FDA regulations (21 CFR part 1240, subpart E),

(2) Boarding water that does not meet NPDWRs applicable to transient non-community water systems (§§141.62 and 141.63, as applied to TNCWS), or

(3) Boarding water that is otherwise determined to be unsafe due to noncompliance with the procedures specified in §141.804(b)(6).

[74 FR 53618, Oct. 19, 2009, as amended at 78 FR 10354, Feb. 13, 2013]

§141.804 Aircraft water system operations and maintenance plan.

(a) Each air carrier must develop and implement an aircraft water system operations and maintenance plan for each aircraft water system that it owns or operates. This plan must be included in a Federal Aviation Administration (FAA)-accepted air carrier operations and maintenance program (14 CFR part 43, 14 CFR part 91, 14 CFR part 121).

(b) Each aircraft water system operations and maintenance plan must include the following:

(1) *Watering point selection requirement.* All watering points must be selected in accordance with Food and Drug Administration (FDA) regulations (21 CFR part 1240, subpart E).

(2) *Procedures for disinfection and flushing.* The plan must include the following requirements for procedures for disinfection and flushing of aircraft water system.

(i) The air carrier must conduct disinfection and flushing of the aircraft water system in accordance with, or is consistent with, the water system manufacturer's recommendations. The air carrier may conduct disinfection and flushing more frequently, but not less frequently, than the manufacturer recommends.

(ii) The operations and maintenance plan must identify the disinfection frequency, type of disinfecting agent, disinfectant concentration to be used, and the disinfectant contact time, and flushing volume or flushing time.

(iii) In cases where a recommended routine disinfection and flushing frequency is not specified by the aircraft water system manufacturer, the air carrier must choose a disinfection and flushing, and corresponding monitoring frequency specified in §141.803(b)(3).

(3) *Follow-up sampling.* The plan must include the procedures for follow-up sampling in accordance with §141.803(e).

(4) *Training requirements.* Training for all personnel involved with the aircraft water system operation and maintenance provisions of this regulation must include, but is not limited to the following:

(i) Boarding water procedures;

(ii) Sample collection procedures;

(iii) Disinfection and flushing procedures;

(iv) Public health and safety reasons for the requirements of this subpart.

(5) *Procedures for conducting self-inspections of the aircraft water system.* Procedures must include, but are not limited to, inspection of storage tank, distribution system, supplemental treatment, fixtures, valves, and backflow prevention devices.

(6) *Procedures for boarding water.* The plan must include the following requirements and procedures for boarding water:

(i) Within the United States, the air carrier must board water from watering points in accordance with Food and Drug Administration (FDA) regulations (21 CFR part 1240, subpart E).

(ii) A description of how the water will be transferred from the watering point to the aircraft in a manner that ensures it will not become contaminated during the transfer.

(iii) A description of how the carrier will ensure that water boarded outside the United States is safe for human consumption.

(iv) A description of emergency procedures that meet the requirements in §141.803(h) and (i) that must be used in the event that the air carrier becomes aware that water was boarded to operate essential systems, such as toilets, but was boarded from a watering point not in accordance with FDA regulations, does not meet NPDWRs applicable to transient non-community water systems (§§141.62 and 141.63, as applied to TNCWSs), or is otherwise unsafe.

(7) *Coliform sampling plan.* The air carrier must include the coliform sampling plan prepared in accordance with §141.802.

(8) *Aircraft water system disconnect/shut-off, or prevent flow of water through the tap(s) statement.* An explanation of whether the aircraft water system can be physically disconnected/shut-off, or the flow of water otherwise prevented through the tap(s) to the crew and passengers.

(c) For existing aircraft, the air carrier must develop the water system operations and maintenance plan required by this section by April 19, 2011;

(d) For new aircraft, the air carrier must develop the operations and maintenance plan required in this section within the first calendar quarter of initial operation of the aircraft.

(e) Any changes to the aircraft water system operations and maintenance plan must be included in the FAA-accepted air carrier operations and maintenance program.

§141.805 Notification to passengers and crew.

(a) Air carriers must give public notice for each aircraft in all of the following situations:

(1) Public access to the aircraft water system is restricted in response to a routine, repeat or follow-up total coliform-positive or *E. coli*-positive sample result in accordance with §141.803(d);

(2) Failure to perform required routine disinfection and flushing or failure to collect required routine samples in accordance with §141.803(f);

(3) Failure to collect the required follow-up samples in response to a sample result that is *E. coli*-positive in accordance with §141.803(g);

(4) Failure to collect the required repeat samples or failure to collect the required follow-up samples in response to a sample result that is total coliform-positive and *E. coli*-negative in accordance with §141.803(g);

(5) In accordance with §141.803(h), the air carrier becomes aware of an *E. coli*-positive event resulting from water that has been boarded from a watering point not in accordance with FDA regulations (21 CFR part 1240, subpart E), or that does not meet NPDWRs applicable to transient non-community water systems, or that is otherwise determined to be unsafe due to non-compliance with the procedures specified in §141.804(b)(6);

(6) In accordance with §141.803(i), the air carrier becomes aware of a non-*E. coli*-positive event resulting from water that has been boarded from a watering point not in accordance with FDA regulations (21 CFR part 1240, subpart E), or that does not meet NPDWRs applicable to transient non-community water systems, or that is otherwise determined to be unsafe due to non-compliance with the procedures specified in §141.804(b)(6).

(7) The Administrator, the carrier, or the crew otherwise determines that notification is necessary to protect public health.

(b) *Public notification:* (1) Must be displayed in a conspicuous way when printed or posted;

(2) Must not contain overly technical language or very small print;

(3) Must not be formatted in a way that defeats the purpose of the notice;

(4) Must not contain language that nullifies the purpose of the notice;

(5) Must contain information in the appropriate language(s) regarding the importance of the notice, reflecting a good faith effort to reach the non-English speaking population served, including, where applicable, an easily recognized symbol for non-potable water.

(c) Public notification for paragraph (a)(1) of this section must meet the requirements of paragraph (b) of this section in addition to the following:

(1) Public notification must include a prominently displayed, clear statement in each lavatory indicating that the water is non-potable and should not be used for drinking, food or beverage preparation, hand washing, teeth brushing, or any other consumptive use; and

(2) A prominent notice in the galley directed at the crew which includes:

(i) A clear statement that the water is non-potable and should not be used for drinking, food or beverage preparation, hand washing, teeth brushing, or any other consumptive use;

(ii) A description of the violation or situation triggering the notice, including the contaminant(s) of concern;

(iii) When the violation or situation occurred;

(iv) Any potential adverse health effects from the violation or situation, as appropriate, under paragraph (g) of this section;

(v) The population at risk, including sensitive subpopulations particularly vulnerable if exposed to the contaminant in the drinking water;

(vi) What the air carrier is doing to correct the violation or situation; and

(vii) When the air carrier expects to return the system to unrestricted public access.

(3) If passenger access to the water system is physically prevented through disconnecting or shutting off the water, or the flow of water prevented through the tap(s), or if water is supplied only to lavatory toilets, and not to any lavatory or galley taps, then only the notice specified in paragraph (c)(2) of this section is required.

(4) Air carriers must initiate public notification when restriction of public access is initiated in accordance with §141.803(d) and must continue until the aircraft water system is returned to unrestricted public access.

(d) Public notification for paragraphs (a)(2), (a)(4), and (a)(6) of this section must meet the requirements of paragraph (b) of this section in addition to the following:

(1) Public notification must include a prominently displayed, clear statement

in each lavatory indicating that the water is non-potable and should not be used for drinking, food or beverage preparation, hand washing, teeth brushing, or any other consumptive use; and

(2) A prominent notice in the galley directed at the crew which includes:

(i) A clear statement that the water is non-potable and should not be used for drinking, food or beverage preparation, hand washing, teeth brushing, or any other consumptive use;

(ii) A clear statement that it is not known whether the water is contaminated because there was a failure to perform required routine disinfection and flushing; or a failure to perform required monitoring; or water was boarded from a watering point not in accordance with FDA regulations, or that does not meet NPDWRs applicable to transient noncommunity water systems, or that is otherwise determined to be unsafe due to noncompliance with the procedures specified in §141.804(b)(6);

(iii) When and where the unsafe water was boarded or when the specific monitoring or disinfection and flushing requirement was not met;

(iv) Any potential adverse health effects from exposure to waterborne pathogens that might be in the water, as appropriate, under paragraph (g) of this section;

(v) The population at risk, including sensitive subpopulations particularly vulnerable if exposed to the contaminant in the drinking water; and

(vi) A statement indicating when the system will be disinfected and flushed and returned to unrestricted public access.

(3) If passenger access to the water system is physically prevented through disconnecting or shutting off the water, or the flow of water prevented through the tap(s), or if water is supplied only to lavatory toilets, and not to any lavatory or galley taps, then only the notice specified in paragraph (d)(2) of this section is required.

(4) Air carriers must initiate public notification when restriction of public access is initiated in accordance with §141.803(d) and must continue until the aircraft water system is returned to unrestricted public access.

(e) Public notification for paragraphs (a)(3) and (a)(5) of this section must meet the requirements of paragraph (b) of this section in addition to the following:

(1) Public notification must include a prominently displayed, clear statement in each lavatory indicating that the water is non-potable and should not be used for drinking, food or beverage preparation, hand washing, teeth brushing, or any other consumptive use; and

(2) A prominent notice in the galley directed at the crew which includes:

(i) A clear statement that the water is non-potable and should not be used for drinking, food or beverage preparation, hand washing, teeth brushing, or any other consumptive use;

(ii) A clear statement that the water is contaminated and there was a failure to conduct required monitoring; or a clear statement that water is contaminated because water was boarded from a watering point not in accordance with FDA regulations, or that does not meet NPDWRs applicable to transient noncommunity water systems, or that is otherwise determined to be unsafe due to noncompliance with the procedures specified in §141.804(b)(6);

(iii) A description of the contaminant(s) of concern;

(iv) When and where the unsafe water was boarded or when the specific monitoring requirement was not met;

(v) Any potential adverse health effects from the situation, as appropriate, under paragraph (g) of this section;

(vi) The population at risk, including sensitive subpopulations particularly vulnerable if exposed to the contaminant in the drinking water;

(vii) A statement indicating what the air carrier is doing to correct the situation; and

(viii) When the air carrier expects to return the system to unrestricted public access.

(3) If passenger access to the water system is physically prevented through disconnecting or shutting off the water, or the flow of water prevented through the tap(s), or if water is supplied only to lavatory toilets, and not to any lavatory or galley taps, then

only the notice specified in paragraph (e)(2) of this section is required.

(4) Air carriers must initiate public notification when restriction of public access is initiated in accordance with §141.803(d) and must continue public notification until a complete set of required follow-upsamples are total coliform-negative.

(f) Public notification for paragraph (a)(7) of this section must meet the requirements of paragraph (b) of this section in addition to the following:

(1) Notification must be in a form and manner reasonably calculated to reach all passengers and crew while on board the aircraft by using one or more of the following forms of delivery:

(i) Broadcast over public announcement system on aircraft;

(ii) Posting of the notice in conspicuous locations throughout the area served by the water system. These locations would normally be the galleys and in the lavatories of each aircraft requiring posting;

(iii) Hand delivery of the notice to passengers and crew;

(iv) Another delivery method approved in writing by the Administrator.

(2) Air carriers must initiate public notification within 24 hours of being informed by EPA to perform notification and must continue notification for the duration determined by EPA.

(g) In each public notice to the crew, air carriers must use the following standard health effects language that corresponds to the situations in paragraphs (a)(1) through (a)(6) of this section.

(1) Health effects language to be used when public notice is initiated due to the detection of total coliforms only (not *E. coli*) in accordance with paragraph (a)(1) of this section:

Coliform are bacteria that are naturally present in the environment and are used as an indicator that other, potentially harmful, bacteria may be present. Coliforms were found in [INSERT NUMBER OF SAMPLES DETECTED] samples collected and this is a warning of potential problems. If human pathogens are present, they can cause short-term health effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a special health risk for infants, young children, some of the elderly, and people with severely compromised immune systems.

(2) Health effects language to be used when public notice is initiated due to any *E. coli*-positive routine, repeat, or follow-up sample in accordance with paragraph (a)(1) of this section:

E. coli are bacteria whose presence indicates that the water may be contaminated with human or animal wastes. Microbes in these wastes can cause short-term health effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a special health risk for infants, young children, some of the elderly, and people with severely compromised immune systems.

(3) Health effects language to be used when public notice is initiated due to a failure to conduct routine monitoring or routine disinfection and flushing in accordance with paragraph (a)(2) of this section; or when there is a failure to conduct repeat or follow-up sampling in accordance with paragraph (a)(4) of this section; or in accordance with paragraph (a)(6) of this section, when the air carrier becomes aware of a non-*E. coli*-positive event that is the result of water that was boarded from a watering point not in accordance with FDA regulations (21 CFR part 1240, subpart E), or that does not meet NPDWRs applicable to transient non-community water systems, or that is otherwise determined to be unsafe due to non-compliance with the procedures specified in §141.804(b)(6):

Because [REQUIRED MONITORING AND ANALYSIS WAS NOT CONDUCTED], [REQUIRED DISINFECTION AND FLUSHING WAS NOT CONDUCTED] [WATER WAS BOARDED FROM A WATERING POINT NOT IN ACCORDANCE WITH FDA REGULATIONS (21 CR 1240 SUBPART E)], or [OTHER APPROPRIATE EXPLANATION], we cannot be sure of the quality of the drinking water at this time. However, drinking water contaminated with human pathogens can cause short-term health effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a special health risk for infants, young children, some of the elderly, and people with severely compromised immune systems.

(4) Health effects language to be used when public notice is initiated due to a failure to conduct required follow-up

monitoring in response to a sample result that is *E. coli*-positive in accordance with paragraph (a)(3) of this section; or in accordance with paragraph (a)(5) of this section, when the air carrier becomes aware of an *E. coli*-positive event that is the result of water that was boarded from a watering point not in accordance with FDA regulations (21 CFR part 1240, subpart E), or that does not meet NPDWRs applicable to transient non-community water systems, or that is otherwise determined to be unsafe due to non-compliance with the procedures specified in §141.804(b)(6):

Because required follow-up monitoring and analysis was not conducted after the aircraft water system tested positive for *E. coli,* we cannot be sure of the quality of the drinking water at this time. *E. coli* are bacteria whose presence indicates that the water may be contaminated with human or animal wastes. Microbes in these wastes can cause short-term health effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a special health risk for infants, young children, some of the elderly, and people with severely compromised immune systems.

OR

Water was boarded that is contaminated with *E. coli* because [WATER WAS BOARDED FROM A WATERING POINT NOT IN ACCORDANCE WITH FDA REGULATIONS (21 CR 1240 SUBPART E)], or [OTHER APPROPRIATE EXPLANATION]. *E. coli* are bacteria whose presence indicates that the water may be contaminated with human or animal wastes. Microbes in these wastes can cause short-term health effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a special health risk for infants, young children, some of the elderly, and people with severely compromised immune systems.

§141.806 Reporting requirements.

(a) The air carrier must comply with the following requirements regarding reporting of the development of the coliform sampling plan, the operations and maintenance plan, and the disinfection and flushing and coliform sampling frequencies.

(1) The air carrier must report to the Administrator that it has developed the coliform sampling plan required by §141.802, which covers each existing aircraft water system, as well as report the frequency for routine coliform sampling identified in the coliform sampling plan by April 19, 2011. The air carrier must report to the Administrator that it has developed its operations and maintenance plan required by §141.804 and report the frequency for routine disinfection and flushing by April 19, 2011;

(2) For each new aircraft meeting the definition of an aircraft water system, which becomes operational after publication of this subpart, the air carrier must report to the Administrator that it has developed the coliform sampling plan required by §141.802, as well as report the frequency for routine coliform sampling identified in the coliform sampling plan, within the first calendar quarter of initial operation of the aircraft. The air carrier must report to the Administrator that it has developed the aircraft water system operations and maintenance plan required by §141.804, and report the frequency for routine disinfection and flushing within the first calendar quarter of initial operation of the aircraft.

(b) The air carrier must report the following information to the Administrator:

(1) A complete inventory of aircraft that are public water systems by April 19, 2011. Inventory information includes, at a minimum, the following:

(i) The unique aircraft identifier number;

(ii) The status (active or inactive) of any aircraft as an aircraft water system as defined in §141.801;

(iii) The type and location of any supplemental treatment equipment installed on the water system; and

(iv) Whether the aircraft water system can be physically disconnected or shut-off, or the flow of water prevented through the tap(s).

(2) Changes in aircraft inventory no later than 10 days following the calendar month in which the change occurred. Changes in inventory information include, at a minimum, the following:

(i) Change in the unique identifier number for any new aircraft, or any aircraft removed from the carrier's fleet;

(ii) Change in status (active or inactive) of any aircraft as an aircraft water system as defined in §141.801; and

(iii) Change to the type and location of any supplemental treatment equipment added to or removed from the water system.

(iv) Change to whether the aircraft water system can be physically disconnected or shut-off, or the flow of water prevented through the tap(s).

(3) All sampling results no later than 10 calendar days following the monitoring period in which the sampling occurred. The monitoring period is based on the monitoring frequency identified in the coliform sampling plan required under §141.802. Routine disinfection and flushing events must be reported no later than 10 calendar days following the disinfection and flushing period in which the disinfection and flushing occurred. The disinfection and flushing period is based on the frequency identified in the operations and maintenance plan required under §141.804.

(4) All events requiring notification to passengers or crew, or non-routine disinfection and flushing, or non-routine sampling, within 10 days of the event (e.g., notification of positive sample result by laboratory), including information on whether required notification was provided to passengers or crew or both.

(5) Failure to comply with the monitoring or disinfection and flushing requirements of this subpart within 10 calendar days of discovery of the failure.

(6) Changes in disinfection and flushing and coliform sampling frequencies no later than 10 days following the calendar month in which the change occurred. Changes to an aircraft's routine coliform sampling frequency and routine disinfection and flushing frequency must be included in the aircraft water system operation and maintenance plan that is included in the air carrier operations and maintenance program accepted by FAA in accordance with §141.804.

(c) The air carrier must provide evidence of a self-inspection to the Administrator within 90 days of completion of the self-inspection required under §141.808(b), including reporting whether all deficiencies were addressed in accordance with §141.808(c). The air carrier must also report to the Administrator within 90 days that any deficiency identified during a compliance audit conducted in accordance with §141.808(a) has been addressed. If any deficiency has not been addressed within 90 days of identification of the deficiency, the report must also include a description of the deficiency, an explanation as to why it has not yet been addressed, and a schedule for addressing it as expeditiously as possible.

(d) All information required to be reported to the Administrator under this subpart must be in an electronic format established or approved by the Administrator. If an air carrier is unable to report electronically, the air carrier may use an alternative approach that the Administrator approves.

§141.807 Recordkeeping requirements.

(a) The air carrier must keep records of bacteriological analyses for at least 5 years and must include the following information:

(1) The date, time, and place of sampling, and the name of the person who collected the sample;

(2) Identification of the sample as a routine, repeat, follow-up, or other special purpose sample;

(3) Date of the analysis;

(4) Laboratory and person responsible for performing the analysis;

(5) The analytical technique/method used; and

(6) The results of the analysis.

(b) The air carrier must keep records of any disinfection and flushing for at least 5 years and must include the following information:

(1) The date and time of the disinfection and flushing; and

(2) The type of disinfection and flushing (*i.e.*, routine or corrective action).

(c) The air carrier must keep records of a self-inspection for at least 10 years and must include the following information:

(1) The completion date of the self-inspection; and

(2) Copies of any written reports, summaries, or communications related to the self-inspection.

(d) The air carrier must maintain sampling plans and make such plans available for review by the Administrator upon request, including during compliance audits.

(e) The air carrier must maintain aircraft water system operations and maintenance plans in accordance with FAA requirements, and make such plans available for review by the Administrator upon request, including during compliance audits.

(f) The air carrier must keep copies of public notices to passengers and crew issued as required by this subpart for at least 3 years after issuance.

§141.808 Audits and inspections.

(a) The Administrator may conduct routine compliance audits as deemed necessary in providing regulatory oversight to ensure proper implementation of the requirements in this subpart. Compliance audits may include, but are not limited to:

(1) Bacteriological sampling of aircraft water system;

(2) Reviews and audits of records as they pertain to water system operations and maintenance such as log entries, disinfection and flushing procedures, and sampling results; and

(3) Observation of procedures involving the handling of finished water, watering point selection, boarding of water, operation, disinfection and flushing, and general maintenance and self-inspections of aircraft water system.

(b) Air carriers or their representatives must perform a self-inspection of all water system components for each aircraft water system no less frequently than once every 5 years.

(c) The air carrier must address any deficiency identified during compliance audits or routine self-inspections within 90 days of identification of the deficiency, or where such deficiency is identified during extended or heavy maintenance, before the aircraft is put back into service. This includes any deficiency in the water system's design, construction, operation, maintenance, or administration, as well as any failure or malfunction of any system component that has the potential to cause an unacceptable risk to health or that could affect the reliable delivery of safe drinking water.

§141.809 Supplemental treatment.

(a) Any supplemental drinking water treatment units installed onboard existing or new aircraft must be acceptable to FAA and FDA; and must be installed, operated, and maintained in accordance with the manufacturer's plans and specifications and FAA requirements.

(b) Water supplemental treatment and production equipment must produce water that meets the standards prescribed in this part.

§141.810 Violations.

An air carrier is in violation of this subpart when, for any aircraft water system it owns or operates, any of the following occur:

(a) It fails to perform any of the requirements in accordance with §141.803 or §141.804.

(b) It has an *E. coli*-positive sample in any monitoring period (routine and repeat samples are used in this determination).

(c) It fails to provide notification to passengers and crew in accordance with §141.805.

(d) It fails to comply with the reporting and recordkeeping requirements of this subpart.

(e) It fails to conduct a self-inspection or address a deficiency in accordance with §141.808.

(f) It fails to develop a coliform sampling plan in accordance with §141.802, or fails to have and follow an operations and maintenance plan, which is included in a FAA accepted program in accordance with §141.804.

Subpart Y—Revised Total Coliform Rule

SOURCE: 78 FR 10354, Feb. 13, 2013, unless otherwise noted.

§141.851 General.

(a) *General.* The provisions of this subpart include both maximum contaminant level and treatment technique requirements.

(b) *Applicability.* The provisions of this subpart apply to all public water systems.

(c) *Compliance date.* Systems must comply with the provisions of this subpart beginning April 1, 2016, unless otherwise specified in this subpart.

(d) *Implementation with EPA as State.* Systems falling under direct oversight of EPA, where EPA acts as the State, must comply with decisions made by EPA for implementation of subpart Y. EPA has authority to establish such procedures and criteria as are necessary to implement subpart Y.

(e) *Violations of national primary drinking water regulations.* Failure to comply with the applicable requirements of §§141.851 through 141.861, including requirements established by the State pursuant to these provisions, is a violation of the national primary drinking water regulations under subpart Y.

§141.852 Analytical methods and laboratory certification.

(a) *Analytical methodology.* (1) The standard sample volume required for analysis, regardless of analytical method used, is 100 ml.

(2) Systems need only determine the presence or absence of total coliforms and *E. coli;* a determination of density is not required.

(3) The time from sample collection to initiation of test medium incubation may not exceed 30 hours. Systems are encouraged but not required to hold samples below 10 deg. C during transit.

(4) If water having residual chlorine (measured as free, combined, or total chlorine) is to be analyzed, sufficient sodium thiosulfate ($Na_2S_2O_3$) must be added to the sample bottle before sterilization to neutralize any residual chlorine in the water sample. Dechlorination procedures are addressed in Section 9060A.2 of *Standard Methods for the Examination of Water and Wastewater* (20th and 21st editions).

(5) Systems must conduct total coliform and *E. coli* analyses in accordance with one of the analytical methods in the following table or one of the alternative methods listed in Appendix A to subpart C of part 141.

Organism	Methodology category	Method [1]	Citation [1]
Total Coliforms			
	Lactose Fermentation Methods	Standard Total Coliform Fermentation Technique.	Standard Methods 9221 B.1, B.2 (20th ed.; 21st ed.).[23]
			Standard Methods Online 9221 B.1, B.2–99.[23]
		Presence- Absence (P–A) Coliform Test	Standard Methods 9221 D.1, D.2 (20th ed.; 21st ed.).[27]
			Standard Methods Online 9221 D.1, D.2–99.[27]
	Membrane Filtration Methods	Standard Total Coliform Membrane Filter Procedure.	Standard Methods 9222 B, C (20th ed.; 21st ed.).[24]
			Standard Methods Online 9222 B–97[24], 9222 C–97.[24]
		Membrane Filtration using MI medium	EPA Method 1604.[2]
		m- ColiBlue24® Test[24].	
		Chromocult[24].	
	Enzyme Substrate Methods	Colilert®	Standard Methods 9223 B (20th ed.; 21st ed.).[25]
			Standard Methods Online 9223 B–97.[25]
		Colisure®	Standard Methods 9223 B (20th ed.; 21st ed.).[256]
			Standard Methods Online 9223 B–97.[256]
		E*Colite® Test[2].	
		Readycult® Test[2].	
		modified Colitag® Test[2].	
Escherichia coli.			
	Escherichia coli Procedure (following Lactose Fermentation Methods).	EC–MUG medium	Standard Methods 9221 F.1 (20th ed.; 21st ed.) [2]
	Escherichia coli Partition Method	EC broth with MUG (EC–MUG)	Standard Methods 9222 G.1*c*(2) (20th ed.; 21st ed.) [28]
		NA–MUG medium	Standard Methods 9222 G.1*c*(1) (20th ed.; 21st ed.) [2]
	Membrane Filtration Methods	Membrane Filtration using MI medium	EPA Method 1604 [2]
		m- ColiBlue24® Test [24]	
		Chromocult [24].	
	Enzyme Substrate Methods	Colilert®	Standard Methods 9223 B (20th ed.; 21st ed.) [25]
			Standard Methods Online 9223 B–97 [256]
		Colisure®	Standard Methods 9223 B (20th ed.; 21st ed.) [256]
			Standard Methods Online 9223 B–97 [256]
		E*Colite® Test[2].	
		Readycult® Test[2].	
		modified Colitag® Test[2].	

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[1] The procedures must be done in accordance with the documents listed in paragraph (c) of this section. For Standard Methods, either editions, 20th (1998) or 21st (2005), may be used. For the Standard Methods Online, the year in which each method was approved by the Standard Methods Committee is designated by the last two digits following the hyphen in the method number. The methods listed are the only online versions that may be used. For vendor methods, the date of the method listed in paragraph (c) of this section is the date/version of the approved method. The methods listed are the only versions that may be used for compliance with this rule. Laboratories should be careful to use only the approved versions of the methods, as product package inserts may not be the same as the approved versions of the methods.

[2] Incorporated by reference. See paragraph (c) of this section.

[3] Lactose broth, as commercially available, may be used in lieu of lauryl tryptose broth, if the system conducts at least 25 parallel tests between lactose broth and lauryl tryptose broth using the water normally tested, and if the findings from this comparison demonstrate that the false-positive rate and false-negative rate for total coliforms, using lactose broth, is less than 10 percent.

[4] All filtration series must begin with membrane filtration equipment that has been sterilized by autoclaving. Exposure of filtration equipment to UV light is not adequate to ensure sterilization. Subsequent to the initial autoclaving, exposure of the filtration equipment to UV light may be used to sanitize the funnels between filtrations within a filtration series. Alternatively, membrane filtration equipment that is pre-sterilized by the manufacturer (*i.e.*, disposable funnel units) may be used.

[5] Multiple-tube and multi-well enumerative formats for this method are approved for use in presence-absence determination under this regulation.

[6] Colisure® results may be read after an incubation time of 24 hours.

[7] A multiple tube enumerative format, as described in *Standard Methods for the Examination of Water and Wastewater* 9221, is approved for this method for use in presence-absence determination under this regulation.

[8] The following changes must be made to the EC broth with MUG (EC–MUG) formulation: Potassium dihydrogen phosphate, KH_2PO_4, must be 1.5g, and 4-methylumbelliferyl-Beta-D-glucuronide must be 0.05 g.

(b) *Laboratory certification.* Systems must have all compliance samples required under this subpart analyzed by a laboratory certified by the EPA or a primacy State to analyze drinking water samples. The laboratory used by the system must be certified for each method (and associated contaminant(s)) used for compliance monitoring analyses under this rule.

(c) *Incorporation by reference.* The standards required in this section are incorporated by reference into this section with the approval of the Director of the Federal Register under 5 U.S.C. 552(a) and 1 CFR part 51. To enforce any edition other than that specified in this section, EPA must publish notice of change in the FEDERAL REGISTER and the material must be available to the public. All approved material is available for inspection either electronically at *www.regulations.gov,* in hard copy at the Water Docket, or from the sources indicated below. The Docket ID is EPA–HQ–OW–2008–0878. Hard copies of these documents may be viewed at the Water Docket in the EPA Docket Center, (EPA/DC) EPA West, Room 3334, 1301 Constitution Ave. NW., Washington, DC. The EPA Docket Center Public Reading Room is open from 8:30 a.m. to 4:30 p.m., Monday through Friday, excluding legal holidays. The telephone number for the Public Reading Room is 1–202–566–1744, and the telephone number for the Water Docket is 1–202–566–2426. Copyrighted materials are only available for viewing in hard copy. These documents are also available for inspection at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 1–202–741–6030 or go to: *http://www.archives.gov/federal*I*register/code*I*of*I*federal*I*regulations/ibr*I*locations.html.*

(1) American Public Health Association, 800 I Street, NW., Washington, DC 20001.

(i) ''Standard Methods for the Examination of Water and Wastewater,'' 20th edition (1998):

(A) Standard Methods 9221, ''Multiple-Tube Fermentation Technique for Members of the Coliform Group,'' B.1, B.2, ''Standard Total Coliform Fermentation Technique.''

(B) Standard Methods 9221, ''Multiple-Tube Fermentation Technique for Members of the Coliform Group,'' D.1, D.2, ''Presence-Absence (P–A) Coliform Test.''

(C) Standard Methods 9222, ''Membrane Filter Technique for Members of the Coliform Group,'' B, ''Standard Total Coliform Membrane Filter Procedure.''

(D) Standard Methods 9222, ''Membrane Filter Technique for Members of the Coliform Group,'' C, ''Delayed-Incubation Total Coliform Procedure.''

(E) Standard Methods 9223, ''Enzyme Substrate Coliform Test,'' B, ''Enzyme Substrate Test,'' Colilert® and Colisure®.

(F) Standard Methods 9221, ''Multiple Tube Fermentation Technique for Members of the Coliform Group,'' F.1, ''*Escherichia coli* Procedure: EC–MUG medium.''

(G) Standard Methods 9222, ''Membrane Filter Technique for Members of the Coliform Group,'' G.1.*c*(2), ''*Escherichia coli* Partition Method: EC broth with MUG (EC–MUG).''

(H) Standard Methods 9222, ''Membrane Filter Technique for Members of the Coliform Group,'' G.1.*c*(1), ''*Escherichia coli* Partition Method: NA–MUG medium.''

(ii) ''Standard Methods for the Examination of Water and Wastewater,'' 21st edition (2005):

(A) Standard Methods 9221, ''Multiple-Tube Fermentation Technique for Members of the Coliform Group,'' B.1, B.2, ''Standard Total Coliform Fermentation Technique.''

(B) Standard Methods 9221, ''Multiple-Tube Fermentation Technique for Members of the Coliform Group,'' D.1, D.2, ''Presence-Absence (P–A) Coliform Test.''

(C) Standard Methods 9222, ''Membrane Filter Technique for Members of the Coliform Group,'' B, ''Standard Total Coliform Membrane Filter Procedure.''

(D) Standard Methods 9222, ''Membrane Filter Technique for Members of the Coliform Group,'' C, ''Delayed-Incubation Total Coliform Procedure.''

(E) Standard Methods 9223, ''Enzyme Substrate Coliform Test,'' B, ''Enzyme Substrate Test,'' Colilert® and Colisure®.

(F) Standard Methods 9221, "Multiple Tube Fermentation Technique for Members of the Coliform Group," F.1, "*Escherichia coli* Procedure: EC–MUG medium."

(G) Standard Methods 9222, "Membrane Filter Technique for Members of the Coliform Group," G.1.*c*(2), "*Escherichia coli* Partition Method: EC broth with MUG (EC–MUG)."

(H) Standard Methods 9222, "Membrane Filter Technique for Members of the Coliform Group," G.1.*c*(1), "*Escherichia coli* Partition Method: NA–MUG medium."

(iii) "Standard Methods Online" available at *http://www.standardmethods.org:*

(A) Standard Methods Online 9221, "Multiple-Tube Fermentation Technique for Members of the Coliform Group" (1999), B.1, B.2–99, "Standard Total Coliform Fermentation Technique."

(B) Standard Methods Online 9221, "Multiple-Tube Fermentation Technique for Members of the Coliform Group" (1999), D.1, D.2–99, "Presence-Absence (P–A) Coliform Test."

(C) Standard Methods Online 9222, "Membrane Filter Technique for Members of the Coliform Group" (1997), B–97, "Standard Total Coliform Membrane Filter Procedure."

(D) Standard Methods Online 9222, "Membrane Filter Technique for Members of the Coliform Group" (1997), C–97, "Delayed-Incubation Total Coliform Procedure."

(E) Standard Methods Online 9223, "Enzyme Substrate Coliform Test" (1997), B–97, "Enzyme Substrate Test", Colilert® and Colisure®.

(2) Charm Sciences, Inc., 659 Andover Street, Lawrence, MA 01843–1032, telephone 1–800–343–2170:

(i) E*Colite®—"Charm E*Colite™ Presence/Absence Test for Detection and Identification of Coliform Bacteria and *Escherichia coli* in Drinking Water," January 9, 1998.

(ii) [Reserved]

(3) CPI International, Inc., 5580 Skylane Blvd., Santa Rosa, CA, 95403, telephone 1–800–878–7654:

(i) modified Colitag®, ATP D05–0035—"Modified Colitag™ Test Method for the Simultaneous Detection of *E. coli* and other Total Coliforms in Water," August 28, 2009.

(ii) [Reserved]

(4) EMD Millipore (a division of Merck KGaA, Darmstadt Germany), 290 Concord Road, Billerica, MA 01821, telephone 1–800–645–5476:

(i) Chromocult—"Chromocult® Coliform Agar Presence/Absence Membrane Filter Test Method for Detection and Identification of Coliform Bacteria and *Escherichia coli* for Finished Waters," November 2000, Version 1.0.

(ii) Readycult®—"Readycult® Coliforms 100 Presence/Absence Test for Detection and Identification of Coliform Bacteria and *Escherichia coli* in Finished Waters," January 2007, Version 1.1.

(5) EPA's Water Resource Center (MC–4100T), 1200 Pennsylvania Avenue NW., Washington, DC 20460, telephone 1–202–566–1729:

(i) EPA Method 1604, EPA 821–R–02–024—"EPA Method 1604: Total Coliforms and *Escherichia coli* in Water by Membrane Filtration Using a Simultaneous Detection Technique (MI Medium)," September 2002, *http://www.epa.gov/nerlcwww/1604sp02.pdf.*

(ii) [Reserved]

(6) Hach Company, P.O. Box 389, Loveland, CO 80539, telephone 1–800–604–3493:

(i) m-ColiBlue24®—"Membrane Filtration Method m-ColiBlue24® Broth," Revision 2, August 17, 1999.

(ii) [Reserved]

[78 FR 10354, Feb. 13, 2013, as amended at 79 FR 10669, Feb. 26, 2014]

§141.853 General monitoring requirements for all public water systems.

(a) *Sample siting plans.* (1) Systems must develop a written sample siting plan that identifies sampling sites and a sample collection schedule that are representative of water throughout the distribution system not later than March 31, 2016. These plans are subject to State review and revision. Systems must collect total coliform samples according to the written sample siting plan. Monitoring required by §§141.854 through 141.858 may take place at a customer's premise, dedicated sampling station, or other designated compliance sampling location. Routine and repeat sample sites and any sampling points necessary to meet the requirements of subpart S must be reflected in the sampling plan.

(2) Systems must collect samples at regular time intervals throughout the month, except that systems that use only ground water and serve 4,900 or fewer people may collect all required samples on a single day if they are taken from different sites.

(3) Systems must take at least the minimum number of required samples even if the system has had an *E. coli* MCL violation or has exceeded the coliform treatment technique triggers in §141.859(a).

(4) A system may conduct more compliance monitoring than is required by this subpart to investigate potential problems in the distribution system and use monitoring as a tool to assist in uncovering problems. A system may take more than the minimum number of required routine samples and must include the results in calculating whether the coliform treatment technique trigger in §141.859(a)(1)(i) and (ii) has been exceeded only if the samples are taken in accordance with the existing sample siting plan and are representative of water throughout the distribution system.

(5) Systems must identify repeat monitoring locations in the sample siting plan. Unless the provisions of paragraphs (a)(5)(i) or (a)(5)(ii) of this section are met, the system must collect at least one repeat sample from the sampling tap where the original total coliform-positive sample was taken, and at least one repeat sample at a tap within five service connections upstream and at least one repeat sample at a tap within five service connections downstream of the original sampling site. If a total coliform-positive sample is at the end of the distribution system, or one service connection away from the end of the distribution system, the system must still take all required repeat samples. However, the State may allow an alternative sampling location in lieu of the requirement to collect at least one repeat sample upstream or downstream of the original sampling site. Except as provided for in paragraph (a)(5)(ii) of this section, systems required to conduct triggered source water monitoring under §141.402(a) must take ground water source sample(s) in addition to repeat samples required under this subpart.

(i) Systems may propose repeat monitoring locations to the State that the system believes to be representative of a pathway for contamination of the distribution system. A system may elect to specify either alternative fixed locations or criteria for selecting repeat sampling sites on a situational basis in a standard operating procedure (SOP) in its sample siting plan. The system must design its SOP to focus the repeat samples at locations that best verify and determine the extent of potential contamination of the distribution system area based on specific situations. The State may modify the SOP or require alternative monitoring locations as needed.

(ii) Ground water systems serving 1,000 or fewer people may propose repeat sampling locations to the State that differentiate potential source water and distribution system contamination (e.g., by sampling at entry points to the distribution system). A ground water system with a single well required to conduct triggered source water monitoring may, with written State approval, take one of its repeat samples at the monitoring location required for triggered source water monitoring under §141.402(a) if the system demonstrates to the State's satisfaction that the sample siting plan remains representative of water quality in the distribution system. If approved by the State, the system may use that sample result to meet the monitoring requirements in both §141.402(a) and this section.

(A) If a repeat sample taken at the monitoring location required for triggered source water monitoring is *E. coli*-positive, the system has violated the *E. coli* MCL and must also comply with §141.402(a)(3). If a system takes more than one repeat sample at the monitoring location required for triggered source water monitoring, the system may reduce the number of additional source water samples required under §141.402(a)(3) by the number of repeat samples taken at that location that were not *E. coli*-positive.

(B) If a system takes more than one repeat sample at the monitoring location required for triggered source water monitoring under §141.402(a), and more than one repeat sample is *E. coli*-positive, the system has violated the *E. coli* MCL and must also comply with §141.403(a)(1).

(C) If all repeat samples taken at the monitoring location required for triggered source water monitoring are *E. coli*-negative and a repeat sample taken at a monitoring location other than the one required for triggered source water monitoring is *E. coli*-positive, the system has violated the *E. coli* MCL, but is not required to comply with §141.402(a)(3).

(6) States may review, revise, and approve, as appropriate, repeat sampling proposed by systems under paragraphs (a)(5)(i) and (ii) of this section. The system must demonstrate that the sample siting plan remains representative of the water quality in the distribution system. The State may determine that monitoring at the entry point to the distribution system (especially for undisinfected ground water systems) is effective to differentiate between potential source water and distribution system problems.

(b) *Special purpose samples.* Special purpose samples, such as those taken to determine whether disinfection practices are sufficient following pipe placement, replacement, or repair, must not be used to determine whether the coliform treatment technique trigger has been exceeded. Repeat samples taken pursuant to §141.858 are not considered special purpose samples, and must be used to determine whether the coliform treatment technique trigger has been exceeded.

(c) *Invalidation of total coliform samples.* A total coliform-positive sample invalidated under this paragraph (c) of this section does not count toward meeting the minimum monitoring requirements of this subpart.

(1) The State may invalidate a total coliform-positive sample only if the conditions of paragraph (c)(1)(i), (ii), or (iii) of this section are met.

(i) The laboratory establishes that improper sample analysis caused the total coliform-positive result.

(ii) The State, on the basis of the results of repeat samples collected as required under §141.858(a), determines that the total coliform-positive sample resulted from a domestic or other non-distribution system plumbing problem. The State cannot invalidate a sample on the basis of repeat sample results unless all repeat sample(s) collected at the same tap as the original total coliform-positive sample are also total coliform-positive, and all repeat samples collected at a location other than the original tap are total coliform-negative (e.g., a State cannot invalidate a total coliform-positive sample on the basis of repeat samples if all the repeat samples are total coliform-negative, or if the system has only one service connection).

(iii) The State has substantial grounds to believe that a total coliform-positive result is due to a circumstance or condition that does not reflect water quality in the distribution system. In this case, the system must still collect all repeat samples required under §141.858(a), and use them to determine whether a coliform treatment technique trigger in §141.859 has been exceeded. To invalidate a total coliform-positive sample under this paragraph, the decision and supporting rationale must be documented in writing, and approved and signed by the supervisor of the State official who recommended the decision. The State must make this document available to EPA and the public. The written documentation must state the specific cause of the total coliform-positive sample, and what action the system has taken, or will take, to correct this problem. The State may not invalidate a total coliform-positive sample solely on the grounds that all repeat samples are total coliform-negative.

(2) A laboratory must invalidate a total coliform sample (unless total coliforms are detected) if the sample produces a turbid culture in the absence of gas production using an analytical method where gas formation is examined (e.g., the Multiple-Tube Fermentation Technique), produces a turbid culture in the absence of an acid reaction in the Presence-Absence (P–A) Coliform Test, or exhibits confluent

growth or produces colonies too numerous to count with an analytical method using a membrane filter (e.g., Membrane Filter Technique). If a laboratory invalidates a sample because of such interference, the system must collect another sample from the same location as the original sample within 24 hours of being notified of the interference problem, and have it analyzed for the presence of total coliforms. The system must continue to re-sample within 24 hours and have the samples analyzed until it obtains a valid result. The State may waive the 24-hour time limit on a case-by-case basis. Alternatively, the State may implement criteria for waiving the 24-hour sampling time limit to use in lieu of case-by-case extensions.

§141.854 Routine monitoring requirements for non-community water systems serving 1,000 or fewer people using only ground water.

(a) *General.* (1) The provisions of this section apply to non-community water systems using only ground water (except ground water under the direct influence of surface water, as defined in §141.2) and serving 1,000 or fewer people.

(2) Following any total coliform-positive sample taken under the provisions of this section, systems must comply with the repeat monitoring requirements and *E. coli* analytical requirements in §141.858.

(3) Once all monitoring required by this section and §141.858 for a calendar month has been completed, systems must determine whether any coliform treatment technique triggers specified in §141.859 have been exceeded. If any trigger has been exceeded, systems must complete assessments as required by §141.859.

(4) For the purpose of determining eligibility for remaining on or qualifying for quarterly monitoring under the provisions of paragraphs (f)(4) and (g)(2), respectively, of this section for transient non-community water systems, the State may elect to not count monitoring violations under §141.860(c)(1) of this part if the missed sample is collected no later than the end of the monitoring period following the monitoring period in which the sample was missed. The system must collect the make-up sample in a different week than the routine sample for that monitoring period and should collect the sample as soon as possible during the monitoring period. The State may not use this provision under paragraph (h) of this section. This authority does not affect the provisions of §§141.860(c)(1) and 141.861(a)(4) of this part.

(b) *Monitoring frequency for total coliforms.* Systems must monitor each calendar quarter that the system provides water to the public, except for seasonal systems or as provided under paragraphs (c) through (h) and (j) of this section. Seasonal systems must meet the monitoring requirements of paragraph (i) of this section.

(c) *Transition to subpart Y.* (1) Systems, including seasonal systems, must continue to monitor according to the total coliform monitoring schedules under §141.21 that were in effect on March 31, 2016, unless any of the conditions for increased monitoring in paragraph (f) of this section are triggered on or after April 1, 2016, or unless otherwise directed by the State.

(2) Beginning April 1, 2016, the State must perform a special monitoring evaluation during each sanitary survey to review the status of the system, including the distribution system, to determine whether the system is on an appropriate monitoring schedule. After the State has performed the special monitoring evaluation during each sanitary survey, the State may modify the system's monitoring schedule, as necessary, or it may allow the system to stay on its existing monitoring schedule, consistent with the provisions of this section. The State may not allow systems to begin less frequent monitoring under the special monitoring evaluation unless the system has already met the applicable criteria for less frequent monitoring in this section. For seasonal systems on quarterly or annual monitoring, this evaluation must include review of the approved sample siting plan, which must designate the time period(s) for monitoring based on site-specific considerations (e.g., during periods of highest demand or highest vulnerability to contamination). The seasonal system

must collect compliance samples during these time periods.

(d) *Annual site visits.* Beginning no later than calendar year 2017, systems on annual monitoring, including seasonal systems, must have an initial and recurring annual site visit by the State that is equivalent to a Level 2 assessment or an annual voluntary Level 2 assessment that meets the criteria in §141.859(b) to remain on annual monitoring. The periodic required sanitary survey may be used to meet the requirement for an annual site visit for the year in which the sanitary survey was completed.

(e) *Criteria for annual monitoring.* Beginning April 1, 2016, the State may reduce the monitoring frequency for a well-operated ground water system from quarterly routine monitoring to no less than annual monitoring, if the system demonstrates that it meets the criteria for reduced monitoring in paragraphs (e)(1) through (e)(3) of this section, except for a system that has been on increased monitoring under the provisions of paragraph (f) of this section. A system on increased monitoring under paragraph (f) of this section must meet the provisions of paragraph (g) of this section to go to quarterly monitoring and must meet the provisions of paragraph (h) of this section to go to annual monitoring.

(1) The system has a clean compliance history for a minimum of 12 months;

(2) The most recent sanitary survey shows that the system is free of sanitary defects or has corrected all identified sanitary defects, has a protected water source, and meets approved construction standards; and

(3) The State has conducted an annual site visit within the last 12 months and the system has corrected all identified sanitary defects. The system may substitute a Level 2 assessment that meets the criteria in §141.859(b) for the State annual site visit.

(f) *Increased monitoring requirements for systems on quarterly or annual monitoring.* A system on quarterly or annual monitoring that experiences any of the events identified in paragraphs (f)(1) through (f)(4) of this section must begin monthly monitoring the month following the event. A system on annual monitoring that experiences the event identified in paragraphs (f)(5) of this section must begin quarterly monitoring the quarter following the event. The system must continue monthly or quarterly monitoring until the requirements in paragraph (g) of this section for quarterly monitoring or paragraph (h) of this section for annual monitoring are met. A system on monthly monitoring for reasons other than those identified in paragraphs (f)(1) through (f)(4) of this section is not considered to be on increased monitoring for the purposes of paragraphs (g) and (h) of this section.

(1) The system triggers a Level 2 assessment or two Level 1 assessments under the provisions of §141.859 in a rolling 12-month period.

(2) The system has an *E. coli* MCL violation.

(3) The system has a coliform treatment technique violation.

(4) The system has two subpart Y monitoring violations or one subpart Y monitoring violation and one Level 1 assessment under the provisions of §141.859 in a rolling 12-month period for a system on quarterly monitoring.

(5) The system has one subpart Y monitoring violation for a system on annual monitoring.

(g) *Requirements for returning to quarterly monitoring.* The State may reduce the monitoring frequency for a system on monthly monitoring triggered under paragraph (f) of this section to quarterly monitoring if the system meets the criteria in paragraphs (g)(1) and (g)(2) of this section.

(1) Within the last 12 months, the system must have a completed sanitary survey or a site visit by the State or a voluntary Level 2 assessment by a party approved by the State, be free of sanitary defects, and have a protected water source; and

(2) The system must have a clean compliance history for a minimum of 12 months.

(h) *Requirements for systems on increased monitoring to qualify for annual monitoring.* The State may reduce the monitoring frequency for a system on increased monitoring under paragraph (f) of this section if the system meets the criteria in paragraph (g) of this section plus the criteria in paragraphs (h)(1) and (h)(2) of this section.

(1) An annual site visit by the State and correction of all identified sanitary defects. The system may substitute a voluntary Level 2 assessment by a party approved by the State for the State annual site visit in any given year.

(2) The system must have in place or adopt one or more additional enhancements to the water system barriers to contamination in paragraphs (h)(2)(i) through (h)(2)(v) of this section.

(i) Cross connection control, as approved by the State.

(ii) An operator certified by an appropriate State certification program or regular visits by a circuit rider certified by an appropriate State certification program.

(iii) Continuous disinfection entering the distribution system and a residual in the distribution system in accordance with criteria specified by the State.

(iv) Demonstration of maintenance of at least a 4-logremoval or inactivation of viruses as provided for under §141.403(b)(3).

(v) Other equivalent enhancements to water system barriers as approved by the State.

(i) *Seasonal systems.* (1) Beginning April 1, 2016, all seasonal systems must demonstrate completion of a State-approved start-up procedure, which may include a requirement for startup sampling prior to serving water to the public.

(2) A seasonal system must monitor every month that it is in operation unless it meets the criteria in paragraphs (i)(2)(i) through (iii) of this section to be eligible for monitoring less frequently than monthly beginning April 1, 2016, except as provided under paragraph (c) of this section.

(i) Seasonal systems monitoring less frequently than monthly must have an approved sample siting plan that designates the time period for monitoring based on site-specific considerations (e.g., during periods of highest demand or highest vulnerability to contamination). Seasonal systems must collect compliance samples during this time period.

(ii) To be eligible for quarterly monitoring, the system must meet the criteria in paragraph (g) of this section.

(iii) To be eligible for annual monitoring, the system must meet the criteria under paragraph (h) of this section.

(3) The State may exempt any seasonal system from some or all of the requirements for seasonal systems if the entire distribution system remains pressurized during the entire period that the system is not operating, except that systems that monitor less frequently than monthly must still monitor during the vulnerable period designated by the State.

(j) *Additional routine monitoring the month following a total coliform-positive sample.* Systems collecting samples on a quarterly or annual frequency must conduct additional routine monitoring the month following one or more total coliform-positive samples (with or without a Level 1 treatment technique trigger). Systems must collect at least three routine samples during the next month, except that the State may waive this requirement if the conditions of paragraph (j)(1), (2), or (3) of this section are met. Systems may either collect samples at regular time intervals throughout the month or may collect all required routine samples on a single day if samples are taken from different sites. Systems must use the results of additional routine samples in coliform treatment technique trigger calculations under §141.859(a).

(1) The State may waive the requirement to collect three routine samples the next month in which the system provides water to the public if the State, or an agent approved by the State, performs a site visit before the end of the next month in which the system provides water to the public. Although a sanitary survey need not be performed, the site visit must be sufficiently detailed to allow the State to determine whether additional monitoring and/or any corrective action is needed. The State cannot approve an employee of the system to perform this site visit, even if the employee is an agent approved by the State to perform sanitary surveys.

(2) The State may waive the requirement to collect three routine samples

the next month in which the system provides water to the public if the State has determined why the sample was total coliform-positive and has established that the system has corrected the problem or will correct the problem before the end of the next month in which the system serves water to the public. In this case, the State must document this decision to waive the following month's additional monitoring requirement in writing, have it approved and signed by the supervisor of the State official who recommends such a decision, and make this document available to the EPA and public. The written documentation must describe the specific cause of the total coliform-positive sample and what action the system has taken and/or will take to correct this problem.

(3) The State may not waive the requirement to collect three additional routine samples the next month in which the system provides water to the public solely on the grounds that all repeat samples are total coliform-negative. If the State determines that the system has corrected the contamination problem before the system takes the set of repeat samples required in §141.858, and all repeat samples were total coliform-negative, the State may waive the requirement for additional routine monitoring the next month.

§141.855 Routine monitoring requirements for community water systems serving 1,000 or fewer people using only ground water.

(a) *General.* (1) The provisions of this section apply to community water systems using only ground water (except ground water under the direct influence of surface water, as defined in §141.2) and serving 1,000 or fewer people.

(2) Following any total coliform-positive sample taken under the provisions of this section, systems must comply with the repeat monitoring requirements and *E. coli* analytical requirements in §141.858.

(3) Once all monitoring required by this section and §141.858 for a calendar month has been completed, systems must determine whether any coliform treatment technique triggers specified in §141.859 have been exceeded. If any trigger has been exceeded, systems must complete assessments as required by §141.859.

(b) *Monitoring frequency for total coliforms.* The monitoring frequency for total coliforms is one sample/month, except as provided for under paragraphs (c) through (f) of this section.

(c) *Transition to subpart Y.* (1) All systems must continue to monitor according to the total coliform monitoring schedules under §141.21 that were in effect on March 31, 2016, unless any of the conditions in paragraph (e) of this section are triggered on or after April 1, 2016, or unless otherwise directed by the State.

(2) Beginning April 1, 2016, the State must perform a special monitoring evaluation during each sanitary survey to review the status of the system, including the distribution system, to determine whether the system is on an appropriate monitoring schedule. After the State has performed the special monitoring evaluation during each sanitary survey, the State may modify the system's monitoring schedule, as necessary, or it may allow the system to stay on its existing monitoring schedule, consistent with the provisions of this section. The State may not allow systems to begin less frequent monitoring under the special monitoring evaluation unless the system has already met the applicable criteria for less frequent monitoring in this section.

(d) *Criteria for reduced monitoring.* (1) The State may reduce the monitoring frequency from monthly monitoring to no less than quarterly monitoring if the system is in compliance with State-certified operator provisions and demonstrates that it meets the criteria in paragraphs (d)(1)(i) through (d)(1)(iii) of this section. A system that loses its certified operator must return to monthly monitoring the month following that loss.

(i) The system has a clean compliance history for a minimum of 12 months.

(ii) The most recent sanitary survey shows the system is free of sanitary defects (or has an approved plan and schedule to correct them and is in compliance with the plan and the schedule), has a protected water source and meets approved construction standards.

(iii) The system meets at least one of the following criteria:

(A) An annual site visit by the State that is equivalent to a Level 2 assessment or an annual Level 2 assessment by a party approved by the State and correction of all identified sanitary defects (or an approved plan and schedule to correct them and is in compliance with the plan and schedule).

(B) Cross connection control, as approved by the State.

(C) Continuous disinfection entering the distribution system and a residual in the distribution system in accordance with criteria specified by the State.

(D) Demonstration of maintenance of at least a 4-log removal or inactivation of viruses as provided for under §141.403(b)(3).

(E) Other equivalent enhancements to water system barriers as approved by the State.

(2) [Reserved]

(e) *Return to routine monthly monitoring requirements.* Systems on quarterly monitoring that experience any of the events in paragraphs (e)(1) through (e)(4) of this section must begin monthly monitoring the month following the event. The system must continue monthly monitoring until it meets the reduced monitoring requirements in paragraph (d) of this section.

(1) The system triggers a Level 2 assessment or two Level 1 assessments in a rolling 12-month period.

(2) The system has an *E. coli* MCL violation.

(3) The system has a coliform treatment technique violation.

(4) The system has two subpart Y monitoring violations in a rolling 12-month period.

(f) *Additional routine monitoring the month following a total coliform-positive sample.* Systems collecting samples on a quarterly frequency must conduct additional routine monitoring the month following one or more total coliform-positive samples (with or without a Level 1 treatment technique trigger). Systems must collect at least three routine samples during the next month, except that the State may waive this requirement if the conditions of paragraph (f)(1), (2), or (3) of this section are met. Systems may either collect samples at regular time intervals throughout the month or may collect all required routine samples on a single day if samples are taken from different sites. Systems must use the results of additional routine samples in coliform treatment technique trigger calculations.

(1) The State may waive the requirement to collect three routine samples the next month in which the system provides water to the public if the State, or an agent approved by the State, performs a site visit before the end of the next month in which the system provides water to the public. Although a sanitary survey need not be performed, the site visit must be sufficiently detailed to allow the State to determine whether additional monitoring and/or any corrective action is needed. The State cannot approve an employee of the system to perform this site visit, even if the employee is an agent approved by the State to perform sanitary surveys.

(2) The State may waive the requirement to collect three routine samples the next month in which the system provides water to the public if the State has determined why the sample was total coliform-positive and has established that the system has corrected the problem or will correct the problem before the end of the next month in which the system serves water to the public. In this case, the State must document this decision to waive the following month's additional monitoring requirement in writing, have it approved and signed by the supervisor of the State official who recommends such a decision, and make this document available to the EPA and the public. The written documentation must describe the specific cause of the total coliform-positive sample and what action the system has taken and/or will take to correct this problem.

(3) The State may not waive the requirement to collect three additional routine samples the next month in which the system provides water to the public solely on the grounds that all repeat samples are total coliform-negative. If the State determines that the

system has corrected the contamination problem before the system takes the set of repeat samples required in §141.858, and all repeat samples were total coliform-negative, the State may waive the requirement for additional routine monitoring the next month.

§141.856 Routine monitoring requirements for subpart H public water systems serving 1,000 or fewer people.

(a) *General.* (1) The provisions of this section apply to subpart H public water systems of this part serving 1,000 or fewer people.

(2) Following any total coliform-positive sample taken under the provisions of this section, systems must comply with the repeat monitoring requirements and *E. coli* analytical requirements in §141.858.

(3) Once all monitoring required by this section and §141.858 for a calendar month has been completed, systems must determine whether any coliform treatment technique triggers specified in §141.859 have been exceeded. If any trigger has been exceeded, systems must complete assessments as required by §141.859.

(4) Seasonal systems. (i) Beginning April 1, 2016, all seasonal systems must demonstrate completion of a State-approved start-up procedure, which may include a requirement for start-upsampling prior to serving water to the public.

(ii) The State may exempt any seasonal system from some or all of the requirements for seasonal systems if the entire distribution system remains pressurized during the entire period that the system is not operating.

(b) *Routine monitoring frequency for total coliforms.* Subpart H systems of this part (including consecutive systems) must monitor monthly. Systems may not reduce monitoring.

(c) *Unfiltered subpart H systems.* A subpart H system of this part that does not practice filtration in compliance with subparts H, P, T, and W must collect at least one total coliform sample near the first service connection each day the turbidity level of the source water, measured as specified in §141.74(b)(2), exceeds 1 NTU. When one or more turbidity measurements in any day exceed 1 NTU, the system must collect this coliform sample within 24 hours of the first exceedance, unless the State determines that the system, for logistical reasons outside the system's control, cannot have the sample analyzed within 30 hours of collection and identifies an alternative sample collection schedule. Sample results from this coliform monitoring must be included in determining whether the coliform treatment technique trigger in §141.859 has been exceeded.

§141.857 Routine monitoring requirements for public water systems serving more than 1,000 people.

(a) *General.* (1) The provisions of this section apply to public water systems serving more than 1,000 persons.

(2) Following any total coliform-positive sample taken under the provisions of this section, systems must comply with the repeat monitoring requirements and *E. coli* analytical requirements in §141.858.

(3) Once all monitoring required by this section and §141.858 for a calendar month has been completed, systems must determine whether any coliform treatment technique triggers specified in §141.859 have been exceeded. If any trigger has been exceeded, systems must complete assessments as required by §141.859.

(4) *Seasonal systems.* (i) Beginning April 1, 2016, all seasonal systems must demonstrate completion of a State-approved start-up procedure, which may include a requirement for start-upsampling prior to serving water to the public.

(ii) The State may exempt any seasonal system from some or all of the requirements for seasonal systems if the entire distribution system remains pressurized during the entire period that the system is not operating.

(b) *Monitoring frequency for total coliforms.* The monitoring frequency for total coliforms is based on the population served by the system, as follows:

TOTAL COLIFORM MONITORING FREQUENCY FOR PUBLIC WATER SYSTEMS SERVING MORE THAN 1,000 PEOPLE

Population served	Minimum number of samples per month
1,001 to 2,500	2
2,501 to 3,300	3
3,301 to 4,100	4
4,101 to 4,900	5
4,901 to 5,800	6
5,801 to 6,700	7
6,701 to 7,600	8
7,601 to 8,500	9
8,501 to 12,900	10
12,901 to 17,200	15
17,201 to 21,500	20
21,501 to 25,000	25
25,001 to 33,000	30
33,001 to 41,000	40
41,001 to 50,000	50
50,001 to 59,000	60
59,001 to 70,000	70
70,001 to 83,000	80
83,001 to 96,000	90
96,001 to 130,000	100
130,001 to 220,000	120
220,001 to 320,000	150
320,001 to 450,000	180
450,001 to 600,000	210
600,001 to 780,000	240
780,001 to 970,000	270
970,001 to 1,230,000	300
1,230,001 to 1,520,000	330
1,520,001 to 1,850,000	360
1,850,001 to 2,270,000	390
2,270,001 to 3,020,000	420
3,020,001 to 3,960,000	450
3,960,001 or more	480

(c) *Unfiltered subpart H systems.* A subpart H system of this part that does not practice filtration in compliance with subparts H, P, T, and W must collect at least one total coliform sample near the first service connection each day the turbidity level of the source water, measured as specified in §141.74(b)(2), exceeds 1 NTU. When one or more turbidity measurements in any day exceed 1 NTU, the system must collect this coliform sample within 24 hours of the first exceedance, unless the State determines that the system, for logistical reasons outside the system's control, cannot have the sample analyzed within 30 hours of collection and identifies an alternative sample collection schedule. Sample results from this coliform monitoring must be included in determining whether the coliform treatment technique trigger in §141.859 has been exceeded.

(d) *Reduced monitoring.* Systems may not reduce monitoring, except for non-community water systems using only ground water (and not ground water under the direct influence of surface water) serving 1,000 or fewer people in some months and more than 1,000 persons in other months. In months when more than 1,000 persons are served, the systems must monitor at the frequency specified in paragraph (a) of this section. In months when 1,000 or fewer people are served, the State may reduce the monitoring frequency, in writing, to a frequency allowed under §141.854 for a similarly situated system that always serves 1,000 or fewer people, taking into account the provisions in §141.854(e) through (g).

§141.858 Repeat monitoring and *E. coli* requirements.

(a) *Repeat monitoring.* (1) If a sample taken under §§141.854 though 141.857 is total coliform-positive, the system must collect a set of repeat samples within 24 hours of being notified of the positive result. The system must collect no fewer than three repeat samples for each total coliform-positive sample found. The State may extend the 24-hour limit on a case-by-case basis if the system has a logistical problem in collecting the repeat samples within 24 hours that is beyond its control. Alternatively, the State may implement criteria for the system to use in lieu of case-by-case extensions. In the case of an extension, the State must specify how much time the system has to collect the repeat samples. The State cannot waive the requirement for a system to collect repeat samples in paragraphs (a)(1) through (a)(3) of this section.

(2) The system must collect all repeat samples on the same day, except that the State may allow a system with a single service connection to collect the required set of repeat samples over a three-day period or to collect a larger volume repeat sample(s) in one or more sample containers of any size, as long as the total volume collected is at least 300 ml.

(3) The system must collect an additional set of repeat samples in the manner specified in paragraphs (a)(1) through (a)(3) of this section if one or more repeat samples in the current set of repeat samples is total coliform-positive. The system must collect the additional set of repeat samples within

24 hours of being notified of the positive result, unless the State extends the limit as provided in paragraph (a)(1) of this section. The system must continue to collect additional sets of repeat samples until either total coliforms are not detected in one complete set of repeat samples or the system determines that a coliform treatment technique trigger specified in §141.859(a) has been exceeded as a result of a repeat sample being total coliform-positive and notifies the State. If a trigger identified in §141.859 is exceeded as a result of a routine sample being total coliform-positive, systems are required to conduct only one round of repeat monitoring for each total coliform-positive routine sample.

(4) After a system collects a routine sample and before it learns the results of the analysis of that sample, if it collects another routine sample(s) from within five adjacent service connections of the initial sample, and the initial sample, after analysis, is found to contain total coliforms, then the system may count the subsequent sample(s) as a repeat sample instead of as a routine sample.

(5) Results of all routine and repeat samples taken under §§141.854 through 141.858 not invalidated by the State must be used to determine whether a coliform treatment technique trigger specified in §141.859 has been exceeded.

(b) *Escherichia coli (E. coli) testing.* (1) If any routine or repeat sample is total coliform-positive, the system must analyze that total coliform-positive culture medium to determine if *E. coli* are present. If *E. coli* are present, the system must notify the State by the end of the day when the system is notified of the test result, unless the system is notified of the result after the State office is closed and the State does not have either an after-hours phone line or an alternative notification procedure, in which case the system must notify the State before the end of the next business day.

(2) The State has the discretion to allow a system, on a case-by-case basis, to forgo *E. coli* testing on a total coliform-positive sample if that system assumes that the total coliform-positive sample is *E. coli*-positive. Accordingly, the system must notify the State as specified in paragraph (b)(1) of this section and the provisions of §141.63(c) apply.

§141.859 Coliform treatment technique triggers and assessment requirements for protection against potential fecal contamination.

(a) *Treatment technique triggers.* Systems must conduct assessments in accordance with paragraph (b) of this section after exceeding treatment technique triggers in paragraphs (a)(1) and (a)(2) of this section.

(1) Level 1 treatment technique triggers.

(i) For systems taking 40 or more samples per month, the system exceeds 5.0% total coliform-positive samples for the month.

(ii) For systems taking fewer than 40 samples per month, the system has two or more total coliform-positive samples in the same month.

(iii) The system fails to take every required repeat sample after any single total coliform-positive sample.

(2) Level 2 treatment technique triggers.

(i) An *E. coli* MCL violation, as specified in §141.860(a).

(ii) A second Level 1 trigger as defined in paragraph (a)(1) of this section, within a rolling 12-month period, unless the State has determined a likely reason that the samples that caused the first Level 1 treatment technique trigger were total coliform-positive and has established that the system has corrected the problem.

(iii) For systems with approved annual monitoring, a Level 1 trigger in two consecutive years.

(b) *Requirements for assessments.* (1) Systems must ensure that Level 1 and 2 assessments are conducted in order to identify the possible presence of sanitary defects and defects in distribution system coliform monitoring practices. Level 2 assessments must be conducted by parties approved by the State.

(2) When conducting assessments, systems must ensure that the assessor evaluates minimum elements that include review and identification of inadequacies in sample sites; sampling protocol; sample processing; atypical events that could affect distributed water quality or indicate that distributed water quality was impaired;

changes in distribution system maintenance and operation that could affect distributed water quality (including water storage); source and treatment considerations that bear on distributed water quality, where appropriate (e.g., small ground water systems); and existing water quality monitoring data. The system must conduct the assessment consistent with any State directives that tailor specific assessment elements with respect to the size and type of the system and the size, type, and characteristics of the distribution system.

(3) *Level 1 assessments.* A system must conduct a Level 1 assessment consistent with State requirements if the system exceeds one of the treatment technique triggers in paragraph (a)(1) of this section.

(i) The system must complete a Level 1 assessment as soon as practical after any trigger in paragraph (a)(1) of this section. In the completed assessment form, the system must describe sanitary defects detected, corrective actions completed, and a proposed timetable for any corrective actions not already completed. The assessment form may also note that no sanitary defects were identified. The system must submit the completed Level 1 assessment form to the State within 30 days after the system learns that it has exceeded a trigger.

(ii) If the State reviews the completed Level 1 assessment and determines that the assessment is not sufficient (including any proposed timetable for any corrective actions not already completed), the State must consult with the system. If the State requires revisions after consultation, the system must submit a revised assessment form to the State on an agreed-upon schedule not to exceed 30 days from the date of the consultation.

(iii) Upon completion and submission of the assessment form by the system, the State must determine if the system has identified a likely cause for the Level 1 trigger and, if so, establish that the system has corrected the problem, or has included a schedule acceptable to the State for correcting the problem.

(4) *Level 2 assessments.* A system must ensure that a Level 2 assessment consistent with State requirements is conducted if the system exceeds one of the treatment technique triggers in paragraph (a)(2) of this section. The system must comply with any expedited actions or additional actions required by the State in the case of an *E. coli* MCL violation.

(i) The system must ensure that a Level 2 assessment is completed by the State or by a party approved by the State as soon as practical after any trigger in paragraph (a)(2) of this section. The system must submit a completed Level 2 assessment form to the State within 30 days after the system learns that it has exceeded a trigger. The assessment form must describe sanitary defects detected, corrective actions completed, and a proposed timetable for any corrective actions not already completed. The assessment form may also note that no sanitary defects were identified.

(ii) The system may conduct Level 2 assessments if the system has staff or management with the certification or qualifications specified by the State unless otherwise directed by the State.

(iii) If the State reviews the completed Level 2 assessment and determines that the assessment is not sufficient (including any proposed timetable for any corrective actions not already completed), the State must consult with the system. If the State requires revisions after consultation, the system must submit a revised assessment form to the State on an agreed-upon schedule not to exceed 30 days.

(iv) Upon completion and submission of the assessment form by the system, the State must determine if the system has identified a likely cause for the Level 2 trigger and determine whether the system has corrected the problem, or has included a schedule acceptable to the State for correcting the problem.

(c) *Corrective action.* Systems must correct sanitary defects found through either Level 1 or 2 assessments conducted under paragraph (b) of this section. For corrections not completed by the time of submission of the assessment form, the system must complete the corrective action(s) in compliance with a timetable approved by the State in consultation with the system. The system must notify the State when each scheduled corrective action is completed.

(d) *Consultation.* At any time during the assessment or corrective action phase, either the water system or the State may request a consultation with the other party to determine the appropriate actions to be taken. The system may consult with the State on all relevant information that may impact on its ability to comply with a requirement of this subpart, including the method of accomplishment, an appropriate timeframe, and other relevant information.

§141.860 Violations.

(a) *E. coli MCL Violation.* A system is in violation of the MCL for *E. coli* when any of the conditions identified in paragraphs (a)(1) through (a)(4) of this section occur.

(1) The system has an *E. coli*-positive repeat sample following a total coliform-positive routine sample.

(2) The system has a total coliform-positive repeat sample following an *E. coli*-positive routine sample.

(3) The system fails to take all required repeat samples following an *E. coli*-positive routine sample.

(4) The system fails to test for *E. coli* when any repeat sample tests positive for total coliform.

(b) *Treatment technique violation.* (1) A treatment technique violation occurs when a system exceeds a treatment technique trigger specified in §141.859(a) and then fails to conduct the required assessment or corrective actions within the timeframe specified in §141.859(b) and (c).

(2) A treatment technique violation occurs when a seasonal system fails to complete a State-approved start-up procedure prior to serving water to the public.

(c) *Monitoring violations.* (1) Failure to take every required routine or additional routine sample in a compliance period is a monitoring violation.

(2) Failure to analyze for *E. coli* following a total coliform-positive routine sample is a monitoring violation.

(d) *Reporting violations.* (1) Failure to submit a monitoring report or completed assessment form after a system properly conducts monitoring or assessment in a timely manner is a reporting violation.

(2) Failure to notify the State following an *E. coli*-positive sample as required by §141.858(b)(1) in a timely manner is a reporting violation.

(3) Failure to submit certification of completion of State-approved start-up procedure by a seasonal system is a reporting violation.

§141.861 Reporting and recordkeeping.

(a) *Reporting*—(1) *E. coli.* (i) A system must notify the State by the end of the day when the system learns of an *E. coli* MCL violation, unless the system learns of the violation after the State office is closed and the State does not have either an after-hours phone line or an alternative notification procedure, in which case the system must notify the State before the end of the next business day, and notify the public in accordance with subpart Q of this part.

(ii) A system must notify the State by the end of the day when the system is notified of an *E. coli*-positive routine sample, unless the system is notified of the result after the State office is closed and the State does not have either an after-hoursphone line or an alternative notification procedure, in which case the system must notify the State before the end of the next business day.

(2) A system that has violated the treatment technique for coliforms in §141.859 must report the violation to the State no later than the end of the next business day after it learns of the violation, and notify the public in accordance with subpart Q of this part.

(3) A system required to conduct an assessment under the provisions of §141.859 of this part must submit the assessment report within 30 days. The system must notify the State in accordance with §141.859(c) when each scheduled corrective action is completed for corrections not completed by the time of submission of the assessment form.

(4) A system that has failed to comply with a coliform monitoring requirement must report the monitoring violation to the State within 10 days

after the system discovers the violation, and notify the public in accordance with subpart Q of this part.

(5) A seasonal system must certify, prior to serving water to the public, that it has complied with the State-approved start-upprocedure.

(b) *Recordkeeping.* (1) The system must maintain any assessment form, regardless of who conducts the assessment, and documentation of corrective actions completed as a result of those assessments, or other available summary documentation of the sanitary defects and corrective actions taken under §141.859 for State review. This record must be maintained by the system for a period not less than five years after completion of the assessment or corrective action.

(2) The system must maintain a record of any repeat sample taken that meets State criteria for an extension of the 24-hourperiod for collecting repeat samples as provided for under §141.858(a)(1) of this part.

[78 FR 10354, Feb. 13, 2013, as amended at 79 FR 10670, Feb. 26, 2014]

PART 142—NATIONAL PRIMARY DRINKING WATER REGULATIONS IMPLEMENTATION

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AUTHORITY: 42 U.S.C. 300f, 300g–1, 300g–2, 300g–3, 300g–4, 300g–5, 300g–6, 300j–4, 300j–9, and 300j–11.

SOURCE: 41 FR 2918, Jan. 20, 1976, unless otherwise noted.

Subpart A—General Provisions

§142.1 Applicability.

This part sets forth, pursuant to sections 1413 through 1416, 1445, and 1450 of the Public Health Service Act, as amended by the Safe Drinking Water Act, Public Law 93–523, regulations for the implementation and enforcement of the national primary drinking water regulations contained in part 141 of this chapter.

§142.2 Definitions.

As used in this part, and except as otherwise specifically provided:

Act means the Public Health Service Act.

Administrator means the Administrator of the United States Environmental Protection Agency or his authorized representative.

Agency means the United States Environmental Protection Agency.

Approved State primacy program consists of those program elements listed in §142.11(a) that were submitted with the initial State application for primary enforcement authority and approved by the EPA Administrator and all State program revisions thereafter that were approved by the EPA Administrator.

Contaminant means any physical, chemical, biological, or radiological substance or matter in water.

Federal agency means any department, agency, or instrumentality of the United States.

Indian Tribe means any Indian Tribe having a Federally recognized governing body carrying out substantial governmental duties and powers over a defined area.

Interstate Agency means an agency of two or more States established by or under an agreement or compact approved by the Congress, or any other agency of two or more States or Indian Tribes having substantial powers or duties pertaining to the control of pollution as determined and approved by the Administrator.

Maximum contaminant level means the maximum permissible level of a contaminant in water which is delivered to the free flowing outlet of the ultimate user of a public water system; except in the case of turbidity where the maximum permissible level is measured at the point of entry to the distribution system. Contaminants added to the water under circumstances controlled by the user, except for those resulting from corrosion of piping and plumbing caused by water quality are excluded from this definition.

Municipality means a city, town, or other public body created by or pursuant to State law, or an Indian Tribe which does not meet the requirements of subpart H of this part.

National primary drinking water regulation means any primary drinking water regulation contained in part 141 of this chapter.

Person means an individual; corporation; company; association; partnership; municipality; or State, federal, or Tribal agency.

Primary enforcement responsibility means the primary responsibility for administration and enforcement of primary drinking water regulations and related requirements applicable to public water systems within a State.

Public water system or *PWS* means a system for the provision to the public of water for human consumption through pipes or, after August 5, 1998, other constructed conveyances, if such system has at least fifteen service connections or regularly serves an average of at least twenty-five individuals daily at least 60 days out of the year. Such term includes:

Any collection, treatment, storage, and distribution facilities under control of the operator of such system and used primarily in connection with such system; and any collection or pretreatment storage facilities not under such control which are used primarily in connection with such system. Such term does not include any ''special irrigation district.'' A public water system is either a ''community water system'' or a ''noncommunity water system'' as defined in §141.2.

Sanitary survey means an onsite review of the water source, facilities, equipment, operation and maintenance of a public water system for the purpose of evaluating the adequacy of such source, facilities, equipment, operation and maintenance for producing and distributing safe drinking water.

Service connection, as used in the definition of *public water system,* does not include a connection to a system that delivers water by a constructed conveyance other than a pipe if:

(1) The water is used exclusively for purposes other than residential uses (consisting of drinking, bathing, and cooking, or other similar uses);

(2) The Administrator or the State exercising primary enforcement responsibility for public water systems, determines that alternative water to achieve the equivalent level of public health protection provided by the applicable national primary drinking water regulation is provided for residential or similar uses for drinking and cooking; or

(3) The Administrator or the State exercising primary enforcement responsibility for public water systems, determines that the water provided for residential or similar uses for drinking, cooking, and bathing is centrally treated or treated at the point of entry by the provider, a pass-through entity, or the user to achieve the equivalent level of protection provided by the applicable national primary drinking water regulations.

Special irrigation district means an irrigation district in existence prior to May 18, 1994 that provides primarily agricultural service through a piped water system with only incidental residential or similar use where the system or the residential or similar users of the system comply with the exclusion provisions in section 1401(4)(B)(i)(II) or (III).

State means one of the States of the United States, the District of Columbia, the Commonwealth of Puerto Rico, the Virgin Islands, Guam, American

Samoa, the Commonwealth of the Northern Mariana Islands, the Trust Territory of the Pacific Islands, or an eligible Indian tribe.

State primary drinking water regulation means a drinking water regulation of a State which is comparable to a national primary drinking water regulation.

State program revision means a change in an approved State primacy program.

Supplier of water means any person who owns or operates a public water system.

Treatment technique requirement means a requirement of the national primary drinking water regulations which specifies for a contaminant a specific treatment technique(s) known to the Administrator which leads to a reduction in the level of such contaminant sufficient to comply with the requirements of part 141 of this chapter.

[41 FR 2918, Jan. 20, 1976, as amended at 53 FR 37410, Sept. 26, 1988; 54 FR 52137, Dec. 20, 1989; 59 FR 64344, Dec. 14, 1994; 63 FR 23367, Apr. 28, 1998]

§142.3 Scope.

(a) Except where otherwise provided, this part applies to each public water system in each State; except that this part shall not apply to a public water system which meets all of the following conditions:

(1) Which consists only of distribution and storage facilities (and does not have any collection and treatment facilities);

(2) Which obtains all of its water from, but is not owned or operated by, a public water system to which such regulations apply;

(3) Which does not sell water to any person; and

(4) Which is not a carrier which conveys passengers in interstate commerce.

(b) In order to qualify for primary enforcement responsibility, a State's program for enforcement of primary drinking water regulations must apply to all other public water systems in the State, except for:

(1) Public water systems on carriers which convey passengers in interstate commerce;

(2) Public water systems on Indian land with respect to which the State does not have the necessary jurisdiction or its jurisdiction is in question; or

(c) Section 1451 of the SDWA authorizes the Administrator to delegate primary enforcement responsibility for public water systems to Indian Tribes. An Indian Tribe must meet the statutory criteria at 42 U.S.C. 300j–11(b)(1) before it is eligible to apply for Public Water System Supervision grants and primary enforcement responsibility. All primary enforcement responsibility requirements of parts 141 and 142 apply to Indian Tribes except where specifically noted.

[41 FR 2918, Jan. 20, 1976, as amended at 53 FR 37410, Sept. 26, 1988; 59 FR 64344, Dec. 14, 1994; 67 FR 70858, Nov. 27, 2002]

§142.4 State and local authority.

Nothing in this part shall diminish any authority of a State or political subdivision to adopt or enforce any law or regulation respecting drinking water regulations or public water systems, but no such law or regulation shall relieve any person of any requirements otherwise applicable under this part.

Subpart B—Primary Enforcement Responsibility

§142.10 Requirements for a determination of primary enforcement responsibility.

A State has primary enforcement responsibility for public water systems in the State during any period for which the Administrator determines, based upon a submission made pursuant to §142.11, and submission under §142.12, that such State, pursuant to appropriate State legal authority:

(a) Has adopted drinking water regulations which are no less stringent than the national primary drinking water regulations (NPDWRs) in effect under part 141 of this chapter;

(b) Has adopted and is implementing adequate procedures for the enforcement of such State regulations, such procedures to include:

(1) Maintenance of an inventory of public water systems.

(2) A systematic program for conducting sanitary surveys of public

water systems in the State, with priority given to sanitary surveys of public water systems not in compliance with State primary drinking water regulations.

(3)(i) The establishment and maintenance of a State program for the certification of laboratories conducting analytical measurements of drinking water contaminants pursuant to the requirements of the State primary drinking water regulations including the designation by the State of a laboratory officer, or officers, certified by the Administrator, as the official(s) responsible for the State's certification program. The requirements of this paragraph may be waived by the Administrator for any State where all analytical measurements required by the State's primary drinking water regulations are conducted at laboratories operated by the State and certified by the Agency. Until such time as the Agency establishes a National quality assurance program for laboratory certification the State shall maintain an interim program for the purpose of approving those laboratories from which the required analytical measurements will be acceptable.

(ii) Upon a showing by an Indian Tribe of an intergovernmental or other agreement to have all analytical tests performed by a certified laboratory, the Administrator may waive this requirement.

(4) Assurance of the availability to the State of laboratory facilities certified by the Administrator and capable of performing analytical measurements of all contaminants specified in the State primary drinking water regulations. Until such time as the Agency establishes a National quality assurance program for laboratory certification the Administrator will approve such State laboratories on an interim basis.

(5) The establishment and maintenance of an activity to assure that the design and construction of new or substantially modified public water system facilities will be capable of compliance with the State primary drinking water regulations.

(6) Statutory or regulatory enforcement authority adequate to compel compliance with the State primary drinking water regulations in appropriate cases, such authority to include:

(i) Authority to apply State primary drinking water regulations to all public water systems in the State covered by the national primary drinking water regulations, except for interstate carrier conveyances and systems on Indian land with respect to which the State does not have the necessary jurisdiction or its jurisdiction is in question.

(ii) Authority to sue in courts of competent jurisdiction to enjoin any threatened or continuing violation of the State primary drinking water regulations.

(iii) Right of entry and inspection of public water systems, including the right to take water samples, whether or not the State has evidence that the system is in violation of an applicable legal requirement.

(iv) Authority to require suppliers of water to keep appropriate records and make appropriate reports to the State.

(v) Authority to require public water systems to give public notice that is no less stringent than the EPA requirements in subpart Q of part 141 of this chapter and §142.16(a).

(vi) Authority to assess civil or criminal penalties for violation of the State's primary drinking water regulations and public notification requirements, including the authority to assess daily penalties or multiple penalties when a violation continues;

(vii) Authority to require community water systems to provide consumer confidence reports as required under 40 CFR part 141, subpart O.

(c) Has established and will maintain record keeping and reporting of its activities under paragraphs (a), (b) and (d) in compliance with §§142.14 and 142.15;

(d) *Variances and exemptions.* (1) If it permits small system variances pursuant to Section 1415(e) of the Act, it must provide procedures no less stringent than the Act and Subpart K of this part.

(2) If it permits variances (other than small system variances) or exemptions, or both, from the requirements of the State primary drinking water regulations, it shall do so under conditions and in a manner no less stringent than

the requirements of Sections 1415 and 1416 of the Act. In granting these variances, the State must adopt the Administrator's findings of best available technology, treatment techniques, or other means available as specified in Subpart G of this part. (States with primary enforcement responsibility may adopt procedures different from those set forth in Subparts E and F of this part, which apply to the issuance of variances (other than small system variances) and exemptions by the Administrator in States that do not have primary enforcement responsibility, provided that the State procedures meet the requirements of this paragraph); and

(e) Has adopted and can implement an adequate plan for the provision of safe drinking water under emergency circumstances including, but not limited to, earthquakes, floods, hurricanes, and other natural disasters.

(f)(1) Has adopted authority for assessing administrative penalties unless the constitution of the State prohibits the adoption of such authority. For public water systems serving a population of more than 10,000 individuals, States must have the authority to impose a penalty of at least $1,000 per day per violation. For public water systems serving a population of 10,000 or fewer individuals, States must have penalties that are adequate to ensure compliance with the State regulations as determined by the State.

(2) As long as criteria in paragraph (f)(1) of this section are met, States may establish a maximum administrative penalty per violation that may be assessed on a public water system.

(g) Has adopted regulations consistent with 40 CFR part 3—(Electronic reporting) if the state receives electronic documents.

(h) An Indian Tribe shall not be required to exercise criminal enforcement jurisdiction to meet the requirements for primary enforcement responsibility.

[41 FR 2918, Jan. 20, 1976, as amended at 43 FR 5373, Feb. 8, 1978; 52 FR 20675, June 2, 1987; 52 FR 41550, Oct. 28, 1987; 53 FR 37410, Sept. 26, 1988; 54 FR 15188, Apr. 17, 1989; 54 FR 52138, Dec. 20, 1989; 63 FR 23367, Apr. 28, 1998; 63 FR 43846, Aug. 14, 1998; 63 FR 44535, Aug. 19, 1998; 65 FR 26048, May 4, 2000; 70 FR 59888, Oct. 13, 2005]

§142.11 Initial determination of primary enforcement responsibility.

(a) A State may apply to the Administrator for a determination that the State has primary enforcement responsibility for public water systems in the State pursuant to section 1413 of the Act. The application shall be as concise as possible and include a side-by-side comparison of the Federal requirements and the corresponding State authorities, including citations to the specific statutes and administrative regulations or ordinances and, wherever appropriate, judicial decisions which demonstrate adequate authority to meet the requirements of §142.10. The following information is to be included with the State application.

(1) The text of the State's primary drinking water regulations, with references to those State regulations that vary from comparable regulations set forth in part 141 of this chapter, and a demonstration that any different State regulation is at least as stringent as the comparable regulation contained in part 141.

(2) A description, accompanied by appropriate documentation, of the State's procedures for the enforcement of the State primary drinking water regulations. The submission shall include:

(i) A brief description of the State's program to maintain a current inventory of public water systems.

(ii) A brief description of the State's program for conducting sanitary surveys, including an explanation of the priorities given to various classes of public water systems.

(iii) A brief description of the State's laboratory approval or certification program, including the name(s) of the responsible State laboratory officer(s) certified by the Administrator.

(iv) Identification of laboratory facilities, available to the State, certified or approved by the Administrator and capable of performing analytical measurements of all contaminants specified in the State's primary drinking water regulations.

(v) A brief description of the State's program activity to assure that the design and construction of new or substantially modified public water system facilities will be capable of compliance with the requirements of the State primary drinking water regulations.

(vi) Copies of State statutory and regulatory provisions authorizing the adoption and enforcement of State primary drinking water regulations, and a brief description of State procedures for administrative or judicial action with respect to public water systems not in compliance with such regulations.

(3) A statement that the State will make such reports and will keep such records as may be required pursuant to §§142.14 and 142.15.

(4) If the State permits variances or exemptions from its primary drinking water regulations, the text of the State's statutory and regulatory provisions concerning variances and exemptions.

(5) A brief description of the State's plan for the provision of safe drinking water under emergency conditions.

NOTE: In satisfaction of this requirement, for public water supplies from groundwater sources, EPA will accept the contingency plan for providing alternate drinking water supplies that is part of a State's Wellhead Protection Program, where such program has been approved by EPA pursuant to section 1428 of the SDWA.

(6)(i) A copy of the State statutory and regulatory provisions authorizing the executive branch of the State government to impose an administrative penalty on all public water systems, and a brief description of the State's authority for administrative penalties that will ensure adequate compliance of systems serving a population of 10,000 or fewer individuals.

(ii) In instances where the State constitution prohibits the executive branch of the State government from assessing any penalty, the State shall submit a copy of the applicable part of its constitution and a statement from its Attorney General confirming this interpretation.

(7)(i) A statement by the State Attorney General (or the attorney for the State primacy agency if it has independent legal counsel) or the attorney representing the Indian tribe that certifies that the laws and regulations adopted by the State or tribal ordinances to carry out the program were duly adopted and are enforceable. State statutes and regulations cited by the State Attorney General and tribal ordinances cited by the attorney representing the Indian tribe shall be in the form of lawfully adopted State statutes and regulations or tribal ordinances at the time the certification is made and shall be fully effective by the time the program is approved by EPA. To qualify as "independent legal counsel," the attorney signing the statement required by this section shall have full authority to independently represent the State primacy agency or Indian tribe in court on all matters pertaining to the State or tribal program.

(ii) After EPA has received the documents required under paragraph (a) of this section, EPA may selectively require supplemental statements by the State Attorney General (or the attorney for the State primacy agency if it has independent legal counsel) or the attorney representing the Indian tribe. Each supplemental statement shall address all issues concerning the adequacy of State authorities to meet the requirements of §142.10 that have been identified by EPA after thorough examination as unresolved by the documents submitted under paragraph (a) of this section.

(b)(1) The administrator shall act on an application submitted pursuant to §142.11 within 90 days after receiving such application, and shall promptly inform the State in writing of this action. If he denies the application, his written notification to the State shall include a statement of reasons for the denial.

(2) A final determination by the Administrator that a State has met or has not met the requirements for primary enforcement responsibility shall take effect in accordance with the public notice requirements and related procedures under §142.13.

(3) When the Administrator's determination becomes effective pursuant

to §142.13, it shall continue in effect unless terminated pursuant to §142.17.

[41 FR 2918, Jan. 20, 1976, as amended at 54 FR 52138, Dec. 20, 1989; 60 FR 33661, June 28, 1995; 63 FR 23367, Apr. 28, 1998]

§142.12 Revision of State programs.

(a) *General requirements.* Either EPA or the primacy State may initiate actions that require the State to revise its approved State primacy program. To retain primary enforcement responsibility, States must adopt all new and revised national primary drinking water regulations promulgated in part 141 of this chapter and any other requirements specified in this part.

(1) Whenever a State revises its approved primacy program to adopt new or revised Federal regulations, the State must submit a request to the Administrator for approval of the program revision, using the procedures described in paragraphs (b), (c), and (d) of this section. The Administrator shall approve or disapprove each State request for approval of a program revision based on the requirements of the Safe Drinking Water Act and of this part.

(2) For all State program revisions not covered under §142.12(a)(1), the review procedures outlined in §142.17(a) shall apply.

(b) *Timing of State requests for approval of program revisions to adopt new or revised Federal regulations.* (1) Complete and final State requests for approval of program revisions to adopt new or revised EPA regulations must be submitted to the Administrator not later than 2 years after promulgation of the new or revised EPA regulations, unless the State requests an extension and the Administrator has approved the request pursuant to paragraph (b)(2) of this section. If the State expects to submit a final State request for approval of a program revision to EPA more than 2 years after promulgation of the new or revised EPA regulations, the State shall request an extension of the deadline before the expiration of the 2-year period.

(2) The final date for submission of a complete and final State request for a program revision may be extended by EPA for up to a two-year period upon a written application by the State to the Administrator. In the extension application the State must demonstrate it is requesting the extension because it cannot meet the original deadline for reasons beyond its control despite a good faith effort to do so. The application must include a schedule for the submission of a final request by a certain time and provide sufficient information to demonstrate that the State:

(i)(A) Currently lacks the legislative or regulatory authority to enforce the new or revised requirements, or

(B) Currently lacks the program capability adequate to implement the new or revised requirements; or

(C) Is requesting the extension to group two or more program revisions in a single legislative or regulatory action; and

(ii) Is implementing the EPA requirements to be adopted by the State in its program revision pursuant to paragraph (b)(3) of this section within the scope of its current authority and capabilities.

(3) To be granted an extension, the State must agree with EPA to meet certain requirements during the extension period, which may include the following types of activities as determined appropriate by the Administrator on a case-by-case basis:

(i) Informing public water systems of the new EPA (and upcoming State) requirements and that EPA will be overseeing implementation of the requirements until the State, if eligible for interim primacy, submits a complete and final primacy revision request to EPA, or in all other cases, until EPA approves the State program revision;

(ii) Collecting, storing and managing laboratory results, public notices, and other compliance and operation data required by the EPA regulations;

(iii) Assisting EPA in the development of the technical aspects of enforcement actions and conducting informal follow-up on violations (telephone calls, letters, etc.);

(iv) Providing technical assistance to public water systems;

(v) Providing EPA with all information prescribed by §142.15 of this part on State reporting; and

(vi) For States whose request for an extension is based on a current lack of program capability adequate to implement the new requirements, taking steps agreed to by EPA and the State during the extension period to remedy the deficiency.

(c) *Contents of a State request for approval of a program revision.* (1) The State request for EPA approval of a program revision shall be concise and must include:

(i) The documentation necessary (pursuant to §142.11(a)) to update the approved State primacy program, and identification of those elements of the approved State primacy program that have not changed because of the program revision. The documentation shall include a side-by-side comparison of the Federal requirements and the corresponding State authorities, including citations to the specific statutes and administrative regulations or ordinances and, wherever appropriate, judicial decisions which demonstrate adequate authority to meet the requirements of §142.10 as they apply to the program revision.

(ii) Any additional materials that are listed in §142.16 of this part for a specific EPA regulation, as appropriate; and

(iii) For a complete and final State request only, unless one of the conditions listed in paragraph (c)(2) of this section are met, a statement by the State Attorney General (or the attorney for the State primacy agency if it has independent legal counsel) or the attorney representing the Indian tribe that certifies that the laws and regulations adopted by the State or tribal ordinances to carry out the program revision were duly adopted and are enforceable. State statutes and regulations cited by the State Attorney General and tribal ordinances cited by the attorney for the Indian tribe shall be in the form of lawfully adopted State statutes and regulations or tribal ordinances at the time the certification is made and shall be fully effective by the time the request for program revision is approved by EPA. To qualify as ''independent legal counsel,'' the attorney signing the statement required by this section shall have full authority to independently represent the State primacy agency or tribe in court on all matters pertaining to the State or tribal program.

(2) An Attorney General's statement will be required as part of the State request for EPA approval of a program revision unless EPA specifically waives this requirement for a specific regulation at the time EPA promulgates the regulation, or by later written notice from the Administrator to the State.

(3) After EPA has received the documents required under paragraph (c)(1) of this section, EPA may selectively require supplemental statements by the State Attorney General (or the attorney for the State primacy agency if it has independent legal counsel) or the attorney representing the Indian tribe. Each supplemental statement shall address all issues concerning the adequacy of State authorities to meet the requirements of §142.10 that have been identified by EPA after thorough examination as unresolved by the documents submitted under paragraph (c)(1) of this section.

(d) *Procedures for review of a State request for approval of a program revision*—(1) *Preliminary request.* (i) The State may submit to the Administrator for his or her review a preliminary request for approval of each program revision, containing the information listed in paragraph (c)(1) of this section, *in draft form.* The preliminary request does not require an Attorney General's statement in draft form, but does require draft State statutory or regulatory changes and a side-by-side comparison of State authorities with EPA requirements to demonstrate that the State program revision meets EPA requirements under §142.10 of this part. The preliminary request should be submitted to the Administrator as soon as practicable after the promulgation of the EPA regulations.

(ii) The Administrator will review the preliminary request submitted in accordance with paragraph (d)(1)(i) of this section and make a tentative determination on the request. The Administrator will send the tentative determination and other comments or suggestions to the State for its use in developing the State's final request under paragraph (d)(2) of this section.

(2) *Final request.* The State must submit a complete and final request for

approval of a program revision to the Administrator for his or her review and approval. The request must contain the information listed in paragraph (c)(1) of this section *in complete and final form,* in accordance with any tentative determination EPA may have issued. Complete and final State requests for program revisions shall be submitted within two years of the promulgation of the new or revised EPA regulations, as specified in paragraph (b) of this section.

(3) *EPA's determination on a complete and final request.* (i) The Administrator shall act on a State's request for approval of a program revision within 90 days after determining that the State request is complete and final and shall promptly notify the State of his/her determination.

(ii) If the Administrator disapproves a final request for approval of a program revision, the Administrator will notify the State in writing. Such notification will include a statement of the reasons for disapproval.

(iii) A final determination by the Administrator on a State's request for approval of a program revision shall take effect in accordance with the public notice requirements and related procedures under §142.13.

(e) *Interim primary enforcement authority.* A State with an approved primacy program for each existing national primary drinking water regulation shall be considered to have interim primary enforcement authority with respect to each new or revised national drinking water regulation that it adopts beginning when the new or revised State regulation becomes effective or when the complete primacy revision application is submitted to the Administrator, whichever is later, and shall end when the Administrator approves or disapproves the State's revised primacy program.

[54 FR 52138, Dec. 20, 1989, as amended at 63 FR 23367, Apr. 28, 1998; 66 FR 3780, Jan. 16, 2001]

§142.13 Public hearing.

(a) The Administrator shall provide an opportunity for a public hearing before a final determination pursuant to §142.11 that the State meets or does not meet the requirements for obtaining primary enforcement responsibility, or a final determination pursuant to §142.12(d)(3) to approve or disapprove a State request for approval of a program revision, or a final determination pursuant to §142.17 that a State no longer meets the requirements for primary enforcement responsibility.

(b) The Administrator shall publish notice of any determination specified in paragraph (a) of this section in the FEDERAL REGISTER and in a newspaper or newspapers of general circulation in the State involved within 15 days after making such determination, with a statement of his reasons for the determination. Such notice shall inform interested persons that they may request a public hearing on the Administrator's determination. Such notice shall also indicate one or more locations in the State where information submitted by the State pursuant to §142.11 is available for inspection by the general public. A public hearing may be requested by any interested person other than a Federal agency. Frivolous or insubstantial requests for hearing may be denied by the Administrator.

(c) Requests for hearing submitted pursuant to paragraph (b) of this section shall be submitted to the Administrator within 30 days after publication of notice of opportunity for hearing in the FEDERAL REGISTER. Such requests shall include the following information:

(1) The name, address and telephone number of the individual, organization or other entity requesting a hearing.

(2) A brief statement of the requesting person's interest in the Administrator's determination and of information that the requesting person intends to submit at such hearing.

(3) The signature of the individual making the request; or, if the request is made on behalf of an organization or other entity, the signature of a responsible official of the organization or other entity.

(d) The Administrator shall give notice in the FEDERAL REGISTER and in a newspaper or newspapers of general circulation in the State involved of any hearing to be held pursuant to a request submitted by an interested person or on his own motion. Notice of the hearing shall also be sent to the person requesting a hearing, if any, and to the State involved. Notice of the hearing shall include a statement of the purpose of the hearing, information regarding the time and location or locations for the hearing and the address and telephone number of an office at which interested persons may obtain further information concerning the hearing. At least one hearing location specified in the public notice shall be within the involved State. Notice of hearing shall be given not less than 15 days prior to the time scheduled for the hearing.

(e) Hearings convened pursuant to paragraph (d) of this section shall be conducted before a hearing officer to be designated by the Administrator. The hearing shall be conducted by the hearing officer in an informal, orderly and expeditious manner. The hearing officer shall have authority to call witnesses, receive oral and written testimony and take such other action as may be necessary to assure the fair and efficient conduct of the hearing. Following the conclusion of the hearing, the hearing officer shall forward the record of the hearing to the Administrator.

(f) After reviewing the record of the hearing, the Administrator shall issue an order affirming the determination referred to in paragraph (a) of this section or rescinding such determination. If the determination is affirmed, it shall become effective as of the date of the Administrator's order.

(g) If no timely request for hearing is received and the Administrator does not determine to hold a hearing on his own motion, the Administrator's determination shall become effective 30 days after notice is issued pursuant to paragraph (b) of this section.

(h) If a determination of the Administrator that a State no longer meets the requirements for primary enforcement responsibility becomes effective, the State may subsequently apply for a determination that it meets such requirements by submitting to the Administrator information demonstrating that it has remedied the deficiencies found by the Administrator without adversely sacrificing other aspects of its program required for primary enforcement responsibility.

[41 FR 2918, Jan. 20, 1976, as amended at 54 FR 52140, Dec. 20, 1989; 60 FR 33661, June 28, 1995]

§142.14 Records kept by States.

(a) Each State which has primary enforcement responsibility shall maintain records of tests, measurements, analyses, decisions, and determinations performed on each public water system to determine compliance with applicable provisions of State primary drinking water regulations.

(1) Records of microbiological analyses shall be retained for not less than 1 year. Actual laboratory reports may be kept or data may be transferred to tabular summaries, provided that the information retained includes:

(i) The analytical method used;

(ii) The number of samples analyzed each month;

(iii) The analytical results, set forth in a form that makes possible comparison with the limits specified in §§141.63, 141.71, and 141.72 of this chapter and with the limits specified in subpart Y of this chapter.

(2) Records of microbiological analyses of repeat or special samples shall be retained for not less than one year in the form of actual laboratory reports or in an appropriate summary form.

(3) Records of turbidity measurements must be kept for not less than one year. The information retained must be set forth in a form which makes possible comparison with the limits specified in §§141.71, 141.73, 141.173 and 141.175, 141.550–141.553 and 141.560–141.564 of this chapter. Until June 29, 1993, for any public water system which is providing filtration treatment and until December 30, 1991, for any public water system not providing filtration treatment and not required by the State to provide filtration treatment, records kept must be set forth in a form which makes possible comparison with the limits contained in §141.13 of this chapter.

(4)(i) Records of disinfectant residual measurements and other parameters necessary to document disinfection effectiveness in accordance with §§141.72

and 141.74 of this chapter and the reporting requirements of §§141.75, 141.175, and 141.570, of this chapter must be kept for not less than one year.

(ii) Records of decisions made on a system-by-system and case-by-case basis under provisions of part 141, subpart H, subpart P, or subpart T of this chapter, must be made in writing and kept by the State.

(A) Records of decisions made under the following provisions shall be kept for 40 years (or until one year after the decision is reversed or revised) and a copy of the decision must be provided to the system:

(*1*) Section 141.73(a)(1)—Any decision to allow a public water system using conventional filtration treatment or direct filtration to substitute a turbidity limit greater than 0.5 NTU;

(*2*) Section 141.73(b)(1)—Any decision to allow a public water system using slow sand filtration to substitute a turbidity limit greater than 1 NTU;

(*3*) Section 141.74(b)(2)—Any decision to allow an unfiltered public water system to use continuous turbidity monitoring;

(*4*) Section 141.74(b)(6)(i)—Any decision to allow an unfiltered public water system to sample residual disinfectant concentration at alternate locations if it also has ground water source(s);

(*5*) Section 141.74(c)(1)—Any decision to allow a public water system using filtration treatment to use continuous turbidity monitoring; or a public water system using slow sand filtration or filtration treatment other than conventional treatment, direct filtration or diatomaceous earth filtration to reduce turbidity sampling to once per day; or for systems serving 500 people or fewer to reduce turbidity sampling to once per day;

(*6*) Section 141.74(c)(3)(i)—Any decision to allow a filtered public water system to sample disinfectant residual concentration at alternate locations if it also has ground water source(s);

(*7*) Section 141.75(a)(2)(ix)—Any decision to allow reduced reporting by an unfiltered public water system;

(*8*) Section 141.75(b)(2)(iv)—Any decision to allow reduced reporting by a filtered public water system; and

(*9*) Section 141.76—Any decisions made to approve alternate recycle locations, require modifications to recycle return locations, or require modifications to recycle practices.

(B) Records of decisions made under the following provisions shall be kept for one year after the decision is made:

(*1*) Section 141.71(b)(1)(i)—Any decision that a violation of monthly CT compliance requirements was caused by circumstances that were unusual and unpredictable.

(*2*) Section 141.71(b)(1)(iv)—Any decision that a violation of the disinfection effectiveness criteria was not caused by a deficiency in treatment of the source water;

(*3*) Section 141.71(b)(5)—Any decision that a violation of the total coliform MCL was not caused by a deficiency in treatment of the source water;

(*4*) Section 141.74(b)(1)—Any decision that total coliform monitoring otherwise required because the turbidity of the source water exceeds 1 NTU is not feasible, except that if such decision allows a system to avoid monitoring without receiving State approval in each instance, records of the decision shall be kept until one year after the decision is rescinded or revised.

(C) Records of decisions made under the following provisions shall be kept for the specified period or 40 years, whichever is less.

(*1*) Section 141.71(a)(2)(i)—Any decision that an event in which the source water turbidity which exceeded 5 NTU for an unfiltered public water system was unusual and unpredictable shall be kept for 10 years.

(*2*) Section 141.71(b)(1)(iii)—Any decision by the State that failure to meet the disinfectant residual concentration requirements of §141.72(a)(3)(i) was caused by circumstances that were unusual and unpredictable, shall be kept unless filtration is installed. A copy of the decision must be provided to the system.

(*3*) Section 141.71(b)(2)—Any decision that a public water system's watershed control program meets the requirements of this section shall be kept until the next decision is available and filed.

(*4*) Section 141.70(c)—Any decision that an individual is a qualified operator for a public water system using a surface water source or a ground water source under the direct influence of surface water shall be maintained until the qualification is withdrawn. The State may keep this information in the form of a list which is updated periodically. If such qualified operators are classified by category, the decision shall include that classification.

(*5*) Section 141.71(b)(3)—Any decision that a party other than the State is approved by the State to conduct on-site inspections shall be maintained until withdrawn. The State may keep this information in the form of a list which is updated periodically.

(*6*) Section 141.71(b)(4)—Any decision that an unfiltered public water system has been identified as the source of a waterborne disease outbreak, and, if applicable, that it has been modified sufficiently to prevent another such occurrence shall be kept until filtration treatment is installed. A copy of the decision must be provided to the system.

(*7*) Section 141.72—Any decision that certain interim disinfection requirements are necessary for an unfiltered public water system for which the State has determined that filtration is necessary, and a list of those requirements, shall be kept until filtration treatment is installed. A copy of the requirements must be provided to the system.

(*8*) Section 141.72(a)(2)(ii)—Any decision that automatic shut-off of delivery of water to the distribution system of an unfiltered public water system would cause an unreasonable risk to health or interfere with fire protection shall be kept until rescinded.

(*9*) Section 141.72(a)(4)(ii)—Any decision by the State, based on site-specific considerations, that an unfiltered system has no means for having a sample transported and analyzed for HPC by a certified laboratory under the requisite time and temperature conditions specified by §141.74(a)(3) and that the system is providing adequate disinfection in the distribution system, so that the disinfection requirements contained in §141.72(a)(4)(i) do not apply, and the basis for the decision, shall be kept until the decision is reversed or revised. A copy of the decision must be provided to the system.

(*10*) Section 141.72(b)(3)(ii)—Any decision by the State, based on site-specific conditions, that a filtered system has no means for having a sample transported and analyzed for HPC by a certified laboratory under the requisite time and temperature conditions specified by §141.74(a)(3) and that the system is providing adequate disinfection in the distribution system, so that the disinfection requirements contained in §141.72(b)(3)(i) do not apply, and the basis for the decision, shall be kept until the decision is reversed or revised. A copy of the decision must be provided to the system.

(*11*) Section 141.73(d)—Any decision that a public water system, having demonstrated to the State that an alternative filtration technology, in combination with disinfection treatment, consistently achieves 99.9 percent removal and/or inactivation of *Giardia lamblia* cysts and 99.99 percent removal and/or inactivation of viruses, may use such alternative filtration technology, shall be kept until the decision is reversed or revised. A copy of the decision must be provided to the system.

(*12*) Section 141.74(b), table 3.1—Any decision that a system using either preformed chloramines or chloramines formed by the addition of ammonia prior to the addition of chlorine has demonstrated that 99.99 percent removal and/or inactivation of viruses has been achieved at particular CT values, and a list of those values, shall be kept until the decision is reversed or revised. A copy of the list of required values must be provided to the system.

(*13*) Section 141.74(b)(3)(v)—Any decision that a system using a disinfectant other than chlorine may use $CT_{99.9}$ values other than those in tables 2.1 or 3.1 and/or other operational parameters to determine if the minimum total inactivation rates required by §141.72(a)(1) are being met, and what those values or parameters are, shall be kept until the decision is reversed or revised. A copy of the list of required values or parameters must be provided to the system.

(*14*) Section 142.16(b)(2)(i)(B)—Any decision that a system using a ground water source is under the direct influence of surface water.

(iii) Records of any determination that a public water system supplied by a surface water source or a ground water source under the direct influence of surface water is not required to provide filtration treatment shall be kept for 40 years or until withdrawn, whichever is earlier. A copy of the determination must be provided to the system.

(5) Records of each of the following decisions made pursuant to the total coliform provisions of part 141 shall be made in writing and retained by the State.

(i) Records of the following decisions must be retained for 5 years.

(A) Section 141.21(b)(1)—Any decision to waive the 24-hour time limit for collecting repeat samples after a total coliform-positive routine sample if the public water system has a logistical problem in collecting the repeat sample that is beyond the system's control, and what alternative time limit the system must meet.

(B) Section 141.21(b)(5)—Any decision to allow a system to waive the requirement for five routine samples the month following a total coliform-positive sample. If the waiver decision is made as provided in §141.21(b)(5), the record of the decision must contain all the items listed in that paragraph.

(C) Section 141.21(c)—Any decision to invalidate a total coliform-positive sample. If the decision to invalidate a total coliform-positive sample as provided in §141.21(c)(1)(iii) is made, the record of the decision must contain all the items listed in that paragraph.

(ii) Records of each of the following decisions must be retained in such a manner so that each system's current status may be determined.

(A) Section 141.21(a)(2)—Any decision to reduce the total coliform monitoring frequency for a community water system serving 1,000 persons or fewer, that has no history of total coliform contamination in its current configuration and had a sanitary survey conducted within the past five years showing that the system is supplied solely by a protected groundwater source and is free of sanitary defects, to less than once per month, as provided in §141.21(a)(2); and what the reduced monitoring frequency is. A copy of the reduced monitoring frequency must be provided to the system.

(B) Section 141.21(a)(3)(i)—Any decision to reduce the total coliform monitoring frequency for a non-community water system using only ground water and serving 1,000 persons or fewer to less than once per quarter, as provided in §141.21(a)(3)(i), and what the reduced monitoring frequency is. A copy of the reduced monitoring frequency must be provided to the system.

(C) Section 141.21(a)(3)(ii)—Any decision to reduce the total coliform monitoring frequency for a non-community water system using only ground water and serving more than 1,000 persons during any month the system serves 1,000 persons or fewer, as provided in §141.21(a)(3)(ii). A copy of the reduced monitoring frequency must be provided to the system.

(D) Section 141.21(a)(5)—Any decision to waive the 24-hour limit for taking a total coliform sample for a public water system which uses surface water, or ground water under the direct influence of surface water, and which does not practice filtration in accordance with part 141, subpart H, and which measures a source water turbidity level exceeding 1 NTU near the first service connection as provided in §141.21(a)(5).

(E) Section 141.21(d)(1)—Any decision that a non-community water system is using only protected and disinfected ground water and therefore may reduce the frequency of its sanitary survey to less than once every five years, as provided in §141.21(d), and what that frequency is. A copy of the reduced frequency must be provided to the system.

(F) Section 141.21(d)(2)—A list of agents other than the State, if any, approved by the State to conduct sanitary surveys.

(G) Section 141.21(e)(2)—Any decision to allow a public water system to forgo fecal coliform or *E. coli* testing on a total coliform-positive sample if that system assumes that the total coliform-positive sample is fecal coliform-positive or *E. coli*- positive, as provided in §141.21(e)(2).

(6) Records of analysis for other than microbiological contaminants (including total coliform, fecal coliform, and heterotrophic plate count), residual

disinfectant concentration, other parameters necessary to determine disinfection effectiveness (including temperature and pH measurements), and turbidity shall be retained for not less than 12 years and shall include at least the following information:

(i) Date and place of sampling.

(ii) Date and results of analyses.

(7) Any decisions made pursuant to the provisions of part 141, subpart P or subpart T of this chapter.

(i) Records of systems consulting with the State concerning a modification to disinfection practice under §§141.170(d), 141.172(c), and 141.542 of this chapter, including the status of the consultation.

(ii) Records of decisions that a system using alternative filtration technologies, as allowed under §§141.173(b) and §141.552 of this chapter, can consistently achieve a 99.9 percent removal and/or inactivation of *Giardia lamblia* cysts, 99.99 percent removal and/or inactivation of viruses, and 99 percent removal of *Cryptosporidium* oocysts. The decisions must include State-set enforceable turbidity limits for each system. A copy of the decision must be kept until the decision is reversed or revised. The State must provide a copy of the decision to the system.

(iii) Records of systems required to do filter self-assessment, CPE, or CCP under the requirements of §§141.175 and 141.563 of this chapter.

(8) Any decisions made pursuant to the provisions of 40 CFR part 141, subparts U and V of this part.

(i) IDSE monitoring plans, plus any modifications required by the State, must be kept until replaced by approved IDSE reports.

(ii) IDSE reports and 40/30 certifications, plus any modifications required by the State, must be kept until replaced or revised in their entirety.

(iii) Operational evaluations submitted by a system must be kept for 10 years following submission.

(9) Any decisions made pursuant to the provisions of part 141, subpart W of this chapter.

(i) Results of source water *E. coli* and *Cryptosporidium* monitoring.

(ii) The bin classification after the initial and after the second round of source water monitoring for each filtered system, as described in §141.710 of this chapter.

(iii) Any change in treatment requirements for filtered systems due to watershed assessment during sanitary surveys, as described in §141.711(d) of this chapter.

(iv) The determination of whether the mean *Cryptosporidium* level is greater than 0.01 oocysts/L after the initial and after the second round of source water monitoring for each unfiltered system, as described in §141.712(a) of this chapter.

(v) The treatment processes or control measures that systems use to meet their *Cryptosporidium* treatment requirements under §141.711 or §141.712 of this chapter.

(vi) A list of systems required to cover or treat the effluent of an uncovered finished water storage facility, as specified in §141.714 of this chapter.

(10) Records of each of the following decisions made pursuant to the provisions of subpart Y of part 141 must be made in writing and retained by the State.

(i) Records of the following decisions or activities must be retained for five years.

(A) Sections 141.858(a), 141.853(c)(2), 141.856(c), and 141.857(c) of this chapter—Any case-by-case decision to waive the 24-hour time limit for collecting repeat samples after a total coliform-positive routine sample, or to extend the 24-hour limit for collection of samples following invalidation, or for an unfiltered subpart H system of this part to collect a total coliform sample following a turbidity measurement exceeding 1 NTU.

(B) Sections 141.854(j) and 141.855(f) of this chapter—Any decision to allow a system to waive the requirement for three routine samples the month following a total coliform-positive sample. The record of the waiver decision must contain all the items listed in those sections.

(C) Section 141.853(c) of this chapter—Any decision to invalidate a total coliform-positivesample. If the decision to invalidate a total coliform-positive sample as provided in §141.853(c)(1) of this chapter is made, the record of the decision must contain all the items listed in that section.

(D) Section 141.859 of this chapter—Completed and approved subpart Y assessments, including reports from the system that corrective action has been completed as required by §141.861(a)(2) of this chapter.

(ii) Records of each of the following decisions must be retained in such a manner so that each system's current status may be determined:

(A) Section 141.854(e) of this chapter—Any decision to reduce the total coliform monitoring frequency for a non-community water system using only ground water and serving 1,000 or fewer people to less than once per quarter, as provided in §141.854(e) of this chapter, including what the reduced monitoring frequency is. A copy of the reduced monitoring frequency must be provided to the system.

(B) Section 141.855(d) of this chapter—Any decision to reduce the total coliform monitoring frequency for a community water system serving 1,000 or fewer people to less than once per month, as provided in §141.855(d) of this chapter, including what the reduced monitoring frequency is. A copy of the reduced monitoring frequency must be provided to the system.

(C) Section 141.857(d) of this chapter—Any decision to reduce the total coliform monitoring frequency for a non-community water system using only ground water and serving more than 1,000 persons during any month the system serves 1,000 or fewer people, as provided in §141.857(d) of this chapter. A copy of the reduced monitoring frequency must be provided to the system.

(D) Section 141.858(b)(2) of this chapter—Any decision to allow a system to forgo *E. coli* testing of a total coliform-positive sample if that system assumes that the total coliform-positivesample is *E. coli*-positive.

(b) Records required to be kept pursuant to paragraph (a) of this section must be in a form admissible as evidence in State enforcement proceedings.

(c) Each State which has primary enforcement responsibility shall maintain current inventory information for every public water system in the State and shall retain inventory records of public water systems for not less than 12 years.

(d) Each State which has primary enforcement responsibility shall retain, for not less than 12 years, files which shall include for each such public water system in the State:

(1) Reports of sanitary surveys;

(2) Records of any State approvals;

(3) Records of any enforcement actions.

(4) A record of the most recent vulnerability determination, including the monitoring results and other data supporting the determination, the State's findings based on the supporting data and any additional bases for such determination; except that it shall be kept in perpetuity or until a more current vulnerability determination has been issued.

(5) A record of all current monitoring requirements and the most recent monitoring frequency decision pertaining to each contaminant, including the monitoring results and other data supporting the decision, the State's findings based on the supporting data and any additional bases for such decision; except that the record shall be kept in perpetuity or until a more recent monitoring frequency decision has been issued.

(6) A record of the most recent asbestos repeat monitoring determination, including the monitoring results and other data supporting the determination, the State's findings based on the supporting data and any additional bases for the determination and the repeat monitoring frequency; except that these records shall be maintained in perpetuity or until a more current repeat monitoring determination has been issued.

(7) Records of annual certifications received from systems pursuant to part 141, subpart K demonstrating the system's compliance with the treatment techniques for acrylamide and/or epichlorohydrin in §14.111.

(8) Records of the currently applicable or most recent State determinations, including all supporting information and an explanation of the technical basis for each decision, made under the following provisions of 40

CFR, part 141, subpart I for the control of lead and copper:

(i) Section 141.81(b)—for any water system deemed to be optimized under §141.81(b)(1) or (b)(3) of this chapter, any conditions imposed by the State on specific water systems to ensure the continued operation and maintenance of corrosion control treatment in place;

(ii) Section 141.82(b)—decisions to require a water system to conduct corrosion control treatment studies;

(iii) Section 141.82(d)—designations of optimal corrosion control treatment;

(iv) Section 141.82(f)—designations of optimal water quality parameters;

(v) Section 141.82(h)—decisions to modify a public water system's optimal corrosion control treatment or water quality parameters;

(vi) Section 141.83(b)(2)—determinations of source water treatment;

(vii) Section 141.83(b)(4)—designations of maximum permissible concentrations of lead and copper in source water;

(viii) Section 141.84(e)—determinations establishing shorter lead service line service line replacement schedules under §141.84;

(ix) Sections 141.81(b)(3)(iii), 141.86(d)(4)(vii), and 141.86(g)(4)(iii)—determinations of additional monitoring requirements and/or other actions required to maintain optimal corrosion control by systems monitoring for lead and copper at the tap less frequently than once every six months that change treatment or add a new source of water;

(x) Section 141.85—system-specificdecisions regarding the content of written public education materials and/or the distribution of these materials;

(xi) Section 141.86(b)(5)—system-specific determinations regarding use of non-first-draw samples at non-transient non-community water systems, and community water systems meeting the criteria of §141.85(b)(7)(i) and (ii) of this chapter, that operate 24 hours a day;

(xii) Section 141.86(c)—system-specific designations of sampling locations for systems subject to reduced monitoring;

(xiii) Section 141.86(d)(iv)(A)—system-specific determinations pertaining to alternative sample collection periods for systems subject to reduced monitoring;

(xiv) Section 141.86(g)—determinations of small system monitoring waivers, waiver recertifications, and waiver revocations;

(xv) Section 141.87(c)(3)—determinations regarding representative entry point locations at ground water systems;

(xvi) Section 141.90(e)(4)—system-specific determinations regarding the submission of information to demonstrate compliance with partial lead service line replacement requirements; and

(xvii) Section 141.90(f)—system-specific decisions regarding the resubmission of detailed documentation demonstrating completion of public education requirements.

(9) Records of reports and any other information submitted by PWSs under §141.90 of this chapter, including records of any 90th percentile values calculated by the State under §141.90(h) of this chapter.

(10) Records of State activities, and the results thereof, to:

(i) Verify compliance with State determinations issued under §§141.82(f) of this chapter, 141.82(h) of this chapter, 141.83(b)(2) of this chapter, and 141.83(b)(4) of this chapter;

(ii) Verify compliance with the requirements related to partial lead service line replacement under §141.84(d) of this chapter and compliance with lead service line replacement schedules under §141.84(e) of this chapter; and

(iii) Invalidate tap water lead and copper samples under §141.86(f) of this chapter.

(11) Records of each system's currently applicable or most recently designated monitoring requirements. If, for the records identified in paragraphs (d)(8)(i) through (d)(8)(xvii) of this section, no change is made to State determinations during a 12-year retention period, the State shall retain the record until a new decision, determination, or designation has been issued.

(12) Records of the currently applicable or most recent State determinations, including all supporting information and an explanation of the technical basis for each decision, made under the following provisions of 40

CFR part 141, subpart L for the control of disinfectants and disinfection byproducts. These records must also include interim measures toward installation.

(i) States must keep records of systems that are installing GAC or membrane technology in accordance with §141.64(b)(2) of this chapter. These records must include the date by which the system is required to have completed installation.

(ii) States must keep records of systems that are required, by the State, to meet alternative minimum TOC removal requirements or for whom the State has determined that the source water is not amenable to enhanced coagulation in accordance with §141.135(b)(3) and (4) of this chapter, respectively. These records must include the alternative limits and rationale for establishing the alternative limits.

(iii) States must keep records of subpart H systems using conventional treatment meeting any of the alternative compliance criteria in §141.135(a)(2) or (3) of this chapter.

(iv) States must keep a register of qualified operators that have met the State requirements developed under §142.16(h)(2).

(13) Records of systems with multiple wells considered to be one treatment plant in accordance with §141.132(a)(2) of this chapter and §142.16(h)(5).

(14) Monitoring plans for subpart H systems serving more than 3,300 persons in accordance with §141.132(f) of this chapter.

(15) List of laboratories approved for analyses in accordance with §141.131(b) of this chapter.

(16) List of systems required to monitor for disinfectants and disinfection byproducts in accordance with part 141, subpart L of this chapter. The list must indicate what disinfectants and DBPs, other than chlorine, TTHM, and HAA5, if any, are measured.

(17) Records of the currently applicable or most recent State determination, including all supporting information and an explanation of the technical basis of each decision, made under the following provisions of 40 CFR part 141, subpart S and 40 CFR part 142.

(i) Section 142.16(o)(2)(v). Records of written notices of significant deficiencies.

(ii) Section 141.403(a)(5)(ii) of this chapter. Records of corrective action plans, schedule approvals, and State-specified interim measures.

(iii) Section 142.16(o)(4). Records of confirmations under §141.403(a) of this chapter that a significant deficiency has been corrected or the fecal contamination in the ground water source has been addressed.

(iv) Section 141.402(a)(5) of this chapter. Records of State determinations and records of ground water system's documentation for not conducting triggered source water monitoring.

(v) Section 141.402(d) of this chapter. Records of invalidations of fecal indicator-positive ground water source samples.

(vi) Section 141.402(a)(2)(ii) of this chapter. Records of State approvals of source water monitoring plans.

(vii) Section 142.16(o)(4)(ii). Records of notices of the minimum residual disinfection concentration (when using chemical disinfection) needed to achieve at least 4-log virus inactivation before or at the first customer.

(viii) Sections 142.16(o)(4)(iv) and 142.16(o)(4)(v) Records of notices of the State-specified monitoring and compliance requirements (when using membrane filtration or alternative treatment) needed to achieve at least 4-log treatment of viruses (using inactivation, removal, or a State-approved combination of 4-log inactivation and removal) before or at the first customer.

(ix) Sections 141.403(b)(1) and 141.403(b)(2) of this chapter. Records of written notices from the ground water system that it provides at least 4-log treatment of viruses (using inactivation, removal, or a State-approved combination of 4-log virus inactivation and removal) before or at the first customer for a ground water source.

(x) Section 142.16(o)(4)(vi). Records of written determinations that the ground water system may discontinue 4-log treatment of viruses (using inactivation, removal, or a State-approved combination of 4-log inactivation and removal).

(e) Each State which has primary enforcement responsibility shall retain records pertaining to each variance and exemption granted by it for a period of not less than 5 years following the expiration of such variance or exemption.

(f) Public notification records under subpart Q of part 141 of this chapter received from public water systems (including certifications of compliance and copies of public notices) and any state determinations establishing alternative public notification requirements for the water systems must be retained for three years.

(g) Records required to be kept under this section shall be available to the Regional Administrator upon request. The records required to be kept under this section shall be maintained and made available for public inspection by the State, or, the State at its option may require suppliers of water to make available for public inspection those records maintained in accordance with §141.33.

[41 FR 2918, Jan. 20, 1976]

EDITORIAL NOTE: For FEDERAL REGISTER citations affecting §142.14, see the List of CFR Sections Affected, which appears in the Finding Aids section of the printed volume and at *www.fdsys.gov*.

§142.15 Reports by States.

Each State which has primary enforcement responsibility shall submit to the Administrator the following information:

(a) Each State which has primary enforcement responsibility shall submit quarterly reports to the Administrator on a schedule and in a format prescribed by the Administrator, consisting of the following information:

(1) New violations by public water systems in the State during the previous quarter of State regulations adopted to incorporate the requirements of national primary drinking water regulations, including violations of the public notification requirements under subpart Q of part 141 of this chapter;

(2) New enforcement actions taken by the State during the previous quarter against public water systems with respect to State regulations adopted to incorporate the requirements of national primary drinking water regulations;

(3) Notification of any new variance or exemption granted during the previous quarter. The notice shall include a statement of reasons for the granting of the variance or exemption, including documentation of the need for the variance or exemption and the finding that the granting of the variance or exemption will not result in an unreasonable risk to health. The State may use a single notification statement to report two or more similar variances or exemptions.

(b) Each State which has primary enforcement responsibility shall submit annual reports to the Administrator on a schedule and in a format prescribed by the Administrator, consisting of the following information:

(1) All additions or corrections to the State's inventory of public water systems;

(2) A summary of the status of each variance and exemption currently in effect.

(c) *Special reports*—(1) *Surface Water Treatment Rule*. (i)(A) A list identifying the name, PWS identification number and date of the determination for each public water system supplied by a surface water source or a ground water source under the direct influence of surface water, which the State has determined is not required to provide filtration treatment.

(B) A list identifying the name and PWS identification number of each public water system supplied by a surface water source or ground water source under the direct influence of surface water, which the State has determined, based on an evaluation of site-specific considerations, has no means of having a sample transported and analyzed for HPC by a certified laboratory under the requisite time and temperature conditions specified in §141.74(a)(3) and is providing adequate disinfection in the distribution system, regardless of whether the system is in compliance with the criteria of §141.72 (a)(4)(i) or (b)(3)(i) of this chapter, as allowed by §141.72 (a)(4)(ii) and (b)(3)(ii). The list must include the effective date of each determination.

(ii) Notification within 60 days of the end of the calendar quarter of any determination that a public water system using a surface water source or a ground water source under the direct influence of surface water is not required to provide filtration treatment. The notification must include a statement describing the system's compliance with each requirement of the State's regulations that implement §141.71 and a summary of comments, if any, received from the public on the determination. A single notification may be used to report two or more such determinations.

(2) *Total coliforms.* A list of public water systems which the State is allowing to monitor less frequently than once per month for community water systems or less frequently than once per quarter for non-community water systems as provided in §141.21(a), including the effective date of the reduced monitoring requirement for each system.

(3) *Total coliforms under subpart Y.* A list of systems that the State is allowing to monitor less frequently than once per month for community water systems or less frequently than once per quarter for non-community water systems as provided in §§141.855 and 141.854 of this chapter, including the applicable date of the reduced monitoring requirement for each system.

(4) States shall report quarterly, in a format and on a schedule prescribed by the Administrator, the following information related to each system's compliance with the treatment techniques for lead and copper under 40 CFR part 141, subpart I during the preceding calendar quarter. Specifically, States shall report as follows:

(i) For any reports provided prior to May 15, 2000, States shall report the name and PWS identification number:

(A) Each public water system which exceeded the lead and copper action levels and the date upon which the exceedance occurred;

(B) Each public water system required to complete the corrosion control evaluation specified in §141.82(c) and the date the State received the results of the evaluations from each system;

(C) Each public water system for which the State has designated optimal corrosion control treatment under §141.82(d), the date of the determination, and each system that completed installation of treatment as certified under §141.90(c)(3);

(D) Each public water system for which the State has designated optimal water quality parameters under §141.82(f) and the date of the determination;

(E) Each public water system which the State has required to install source water treatment under §141.83(b)(2), the date of the determination, and each system that completed installation of treatment as certified under §141.90(d)(2);

(F) Each public water system for which the State has specified maximum permissible source water levels under §141.83(b)(4); and

(G) Each public water system required to begin replacing lead service lines as specified in §141.84, each public water system for which the State has established a replacement schedule under §141.84(f), and each system reporting compliance with its replacement schedule under §141.90(e)(2).

(ii) For any reports provided after May 14, 2000 and before January 14, 2002, States may report in accordance with either paragraph (c)(4)(i) or (c)(4)(iii) of this section.

(iii) For all reports submitted on or after January 14, 2002, States shall report the PWS identification number of each public water system identified in paragraphs (c)(4)(iii)(A) through (F) of this section.

(A) For each large and medium-size public water system, all 90th percentile lead levels calculated during each monitoring period specified in §141.86 of this chapter, and the first and last day of the monitoring period for which the 90th percentile lead level was calculated;

(B) For each small public water system, the 90th percentile lead level calculated during each monitoring period in which the system exceeds the lead action level, and the first and last day of each monitoring period in which an exceedance occurred;

(C) For each public water system (regardless of size), the 90th percentile copper level calculated during each monitoring period in which the system exceeds the copper action level, and the first and last day of each monitoring period in which an exceedance occurred;

(D) For each public water system for which the State has designated optimal water quality parameters under §141.82(f) of this chapter, or which the State has deemed to have optimized corrosion control under §141.81(b)(1) or (b)(3) of this chapter, the date of the determination and the paragraph(s) under which the State made its determination;

(E) For each public water system required to begin replacing lead service lines as specified in §141.84 of this chapter and the date each system must begin replacement; and

(F) For each public water system that has implemented optimal corrosion control, completed applicable source water treatment requirements pursuant to §141.83 of this chapter and/or completed lead service line replacement requirements pursuant to §141.84 of this chapter, and the date of the State's determination that these requirements have been met. The date reported shall be the latest of the following events:

(*1*) The date the State designates optimal water quality parameters under §141.82(f) of this chapter or deems the system to have optimized corrosion control pursuant to §141.81(b)(1) or (b)(3) of this chapter;

(*2*) For systems triggered into source water treatment, the date the State designates maximum permissible source water levels under §141.83(b)(4) of this chapter or determines pursuant to §141.83(b)(2) of this chapter that source water treatment is not required; or

(*3*) For systems triggered into lead service line replacement, the date the system completes lead service line replacement or becomes eligible to cease lead service line replacement pursuant to §141.84(f) of this chapter.

(5) *Sanitary surveys.* A list of subpart H systems that have had a sanitary survey completed during the previous year and an annual evaluation of the State's program for conducting sanitary surveys under §142.16(b)(3) of this chapter.

(6) *Subpart W.* (i) The bin classification after the initial and after the second round of source water monitoring for each filtered system, as described in §141.710 of this chapter.

(ii) Any change in treatment requirements for these systems due to watershed assessment during sanitary surveys, as described in §141.711(d) of this chapter.

(iii) The determination of whether the mean *Cryptosporidium* level is greater than 0.01 oocysts/L both after the initial and after the second round of source water monitoring for each unfiltered system, as described in §141.712(a) of this chapter.

(7) *Ground water rule*—(i) *Sanitary surveys.* The month and year in which the most recent sanitary survey was completed or, for a State that uses a phased review process, the date the last element of the applicable eight elements was evaluated under §142.16(o)(2) for each ground water system.

(ii) *Corrective action requirements.* For any corrective action under §141.403(a) of this chapter, the date the ground water system completed corrective action.

(iii) *Compliance monitoring.* All ground water systems providing at least 4-log treatment of viruses (using inactivation, removal, or a State-approved combination of 4-log virus inactivation and removal) before or at the first customer for any ground water source(s).

(d) The reports submitted pursuant to this section shall be made available by the State to the public for inspection at one or more locations within the State.

[41 FR 2918, Jan. 20, 1976]

EDITORIAL NOTE: For FEDERAL REGISTER citations affecting §142.15, see the List of CFR Sections Affected, which appears in the Finding Aids section of the printed volume and at *www.fdsys.gov.*

§142.16 Special primacy requirements.

(a) *State public notification requirements.* (1) Each State that has primary enforcement authority under this part must submit complete and final requests for approval of program revisions to adopt the requirements of subpart Q of part 141 of this chapter, using the procedures in §142.12(b) through (d). At its option, a State may, by rule, and after notice and comment, establish alternative public notification requirements with respect to the form and content of the public notice required under subpart Q of part 141 of this chapter. The alternative requirements must provide the same type and amount of information required under subpart Q and must meet the primacy requirements under §142.10.

(2) As part of the revised primacy program, a State must also establish enforceable requirements and procedures when the State adds to or changes the requirements under:

(i) *Table 1 to 40 CFR 141.201(a)(Item (3)(v))*—To require public water systems to give a public notice for violations or situations other than those listed in appendix A of subpart Q of part 141 of this chapter;

(ii) *40 CFR 141.201(c)(2)*—To allow public water systems, under the specific circumstances listed in §141.201(c)(2), to limit the distribution of the public notice to persons served by the portion of the distribution system that is out of compliance;

(iii) *Table 1 of 40 CFR 141.202(a) (Items (5), (6), and (9))*—To require public water systems to give a Tier 1 public notice (rather than a Tier 2 or Tier 3 notice) for violations or situations listed in appendix A of subpart Q of part 141 of this chapter;

(iv) *40 CFR 141.202(b)(3)*—To require public water systems to comply with additional Tier 1 public notification requirements set by the State subsequent to the initial 24-hour Tier 1 notice, as a result of their consultation with the State required under §§141.202(b)(2);

(v) *40 CFR 141.202(c), 141.203(c) and 141.204(c)*—To require a different form and manner of delivery for Tier 1, 2 and 3 public notices.

(vi) *Table 1 to 40 CFR 141.203(a) (Item (2))*—To require the public water systems to provide a Tier 2 public notice (rather than Tier (3)) for monitoring or testing procedure violations specified by the State;

(vii) *40 CFR 141.203(b)(1)*—To grant public water systems an extension up to three months for distributing the Tier 2 public notice in appropriate circumstances (other than those specifically excluded in the rule);

(viii) *40 CFR 141.203(b)(2)*—To grant a different repeat notice frequency for the Tier 2 public notice in appropriate circumstances (other than those specifically excluded in the rule), but no less frequently than once per year;

(ix) *40 CFR 141.203(b)(3)*—To respond within 24 hours to a request for consultation by the public water system to determine whether a Tier 1 (rather than a Tier 2) notice is required for a turbidity MCL violation under §141.13(b) or a SWTR/IESWTR TT violation due to a single exceedance of the maximum allowable turbidity limit;

(x) *40 CFR 141.205(c)*—To determine the specific multilingual requirement for a public water system, including defining ''large proportion of non-English-speakingconsumers.''

(b) *Requirements for States to adopt 40 CFR part 141, subpart H Filtration and Disinfection.* In addition to the general primacy requirements enumerated elsewhere in this part, including the requirement that State provisions are no less stringent than the federal requirements, an application for approval of a State program revision that adopts 40 CFR part 141, subpart H Filtration and Disinfection, must contain the information specified in this paragraph (b), except that States which require without exception all public water systems using a surface water source or a ground water source under the direct influence of surface water to provide filtration need not demonstrate that the State program has provisions that apply to systems which do not provide filtration treatment. However, such States must provide the text of the State statutes or regulations which specifies that all public water systems using a surface water source or a ground water source under the direct influence of surface water must provide filtration.

(1) *Enforceable requirements.* (i) In addition to adopting criteria no less stringent than those specified in part 141, subpart H of this chapter, the State's application must include enforceable design and operating criteria

for each filtration treatment technology allowed or a procedure for establishing design and operating conditions on a system-by-systembasis (e.g., a permit system).

(ii) States must have the appropriate rules or other authority to assure that PWSs respond in writing to significant deficiencies outlined in sanitary survey reports required under paragraph (b)(3) of this section no later than 45 days after receipt of the report, indicating how and on what schedule the system will address significant deficiencies noted in the survey.

(iii) States must have the appropriate rules or other authority to assure that PWSs take necessary steps to address significant deficiencies identified in sanitary survey reports required under paragraph (b)(3) of this section, if such deficiencies are within the control of the PWS and its governing body.

(2) *State practices or procedures.* (i) A State application for program revision approval must include a description of how the State will accomplish the following:

(A) Section 141.70(c) (qualification of operators)—Qualify operators of systems using a surface water source or a ground water source under the direct influence of surface water.

(B) Determine which systems using a ground water source are under the direct influence of surface water by June 29, 1994 for community water systems and by June 29, 1999 for non-community water systems.

(C) Section 141.72(b)(1) (achieving required *Giardia lamblia* and virus removal in filtered systems)—Determine that the combined treatment process incorporating disinfection treatment and filtration treatment will achieve the required removal and/or inactivation of *Giardia lamblia* and viruses.

(D) Section 141.74(a) (State approval of parties to conduct analyses)—approve parties to conduct pH, temperature, turbidity, and residual disinfectant concentration measurements.

(E) Determine appropriate filtration treatment technology for source waters of various qualities.

(ii) For a State which does not require all public water systems using a surface water source or ground water source under the direct influence of surface water to provide filtration treatment, a State application for program revision approval must include a description of how the State will accomplish the following:

(A) Section 141.71(b)(2) (watershed control program)—Judge the adequacy of watershed control programs.

(B) Section 141.71(b)(3) (approval of on-siteinspectors)—Approve on-siteinspectors other than State personnel and evaluate the results of on-site inspections.

(iii) For a State which adopts any of the following discretionary elements of part 141 of this chapter, the application must describe how the State will:

(A) Section 141.72 (interim disinfection requirements)—Determine interim disinfection requirements for unfiltered systems which the State has determined must filter which will be in effect until filtration is installed.

(B) Section 141.72 (a)(4)(ii) and (b)(3)(ii) (determination of adequate disinfection in system without disinfectant residual)—Determine that a system is unable to measure HPC but is still providing adequate disinfection in the distribution system, as allowed by §141.72(a)(4)(ii) for systems which do not provide filtration treatment and §141.72(b)(3)(ii) for systems which do provide filtration treatment.

(C) Section 141.73 (a)(1) and (b)(1) (alternative turbidity limit)—Determine whether an alternative turbidity limit is appropriate and what the level should be as allowed by §141.73(a)(1) for a system using conventiona1 filtration treatment or direct filtration and by §141.73(b)(1) for a system using slow sand filtration.

(D) Section 141.73(d) (alternative filtration technologies)—Determine that a public water system has demonstrated that an alternate filtration technology, in combination with disinfection treatment, achieves adequate removal and/or disinfection of *Giardia lamblia* and viruses.

(E) Section 141.74(a)(5) (alternate analytical method for chlorine)—Approve DPD colorimetric test kits for free and combined chlorine measurement or approve calibration of automated methods by the Indigo Method for ozone determination.

(F) Section 141.74 (b)(2) and (c)(1) (approval of continuous turbidity monitoring)—Approve continuous turbidity monitoring, as allowed by §141.74(b)(2) for a public water system which does not provide filtration treatment and §141.74(c)(1) for a system which does provide filtration treatment.

(G) Section 141.74 (b)(6)(i) and (c)(3)(i) (approval of alternate disinfectant residual concentration sampling plans)—Approve alternate disinfectant residual concentration sampling plans for systems which have a combined ground water and surface water or ground water and ground water under the direct influence of a surface water distribution system, as allowed by §141.74(b)(6)(i) for a public water system which does not provide filtration treatment and §141.74(c)(3)(i) for a public water system which does provide filtration treatment.

(H) Section 141.74(c)(1) (reduction of turbidity monitoring)—Decide whether to allow reduction of turbidity monitoring for systems using slow sand filtration, an approved alternate filtration technology or serving 500 people or fewer.

(I) Section 141.75 (a)(2)(ix) and (b)(2)(iv) (reduced reporting)—Determine whether reduced reporting is appropriate, as allowed by §141.75(a)(2)(ix) for a public water system which does not provide filtration treatment and §141.75(b)(2)(iv) for a public water system which does provide filtration treatment.

(iv) For a State which does not require all public water systems using a surface water source or ground water source under the direct influence of surface water to provide filtration treatment and which uses any of the following discretionary provisions, the application must describe how the State will:

(A) Section 141.71(a)(2)(i) (source water turbidity requirements)—Determine that an exceedance of turbidity limits in source water was caused by circumstances that were unusual and unpredictable.

(B) Section 141.71(b)(1)(i) (monthly CT compliance requirements)—Determine whether failure to meet the requirements for monthly CT compliance in §141.72(a)(1) was caused by circumstances that were unusual and unpredictable.

(C) Section 141.71(b)(1)(iii) (residual disinfectant concentration requirements)—Determine whether failure to meet the requirements for residual disinfectant concentration entering the distribution system in §141.72(a)(3)(i) was caused by circumstances that were unusual and unpredictable.

(D) Section 141.71(b)(1)(iv) (distribution system disinfectant residual concentration requirements)—Determine whether failure to meet the requirements for distribution system residual disinfectant concentration in §141.72(a)(4) was related to a deficiency in treatment.

(E) Section 141.71(b)(4) (system modification to prevent waterborne disease outbreak)—Determine that a system, after having been identified as the source of a waterborne disease outbreak, has been modified sufficiently to prevent another such occurrence.

(F) Section 141.71(b)(5) (total coliform MCL)—Determine whether a total coliform MCL violation was caused by a deficiency in treatment.

(G) Section 141.72(a)(1) (disinfection requirements)—Determine that different ozone, chloramine, or chlorine dioxide $CT_{99.9}$ values or conditions are adequate to achieve required disinfection.

(H) Section 141.72(a)(2)(ii) (shut-offof water to distribution system)—Determine whether a shut-offof water to the distribution system when the disinfectant residual concentration entering the distribution system is less than 0.2 mg/1 will cause an unreasonable risk to health or interfere with fire protection.

(I) Section 141.74(b)(1) (coliform monitoring)—Determine that coliform monitoring which otherwise might be required is not feasible for a system.

(J) Section 141.74(b), table 3.1 (disinfection with chloramines)—Determine the conditions to be met to insure 99.99 percent removal and/or inactivation of viruses in systems which use either preformed chloramines or chloramines for which ammonia is added to the water before chlorine, as allowed by table 3.1.

(3) *Sanitary survey.* In addition to the general requirements for sanitary surveys contained in §142.10(b)(2), an application must describe how the State will implement a sanitary survey program that meets the requirements in paragraphs (b)(3)(i) through (v) of this section. For the purposes of this paragraph, "sanitary survey" means an onsite review of the water source (identifying sources of contamination using results of source water assessments where available), facilities, equipment, operation, maintenance, and monitoring compliance of a public water system to evaluate the adequacy of the system, its sources and operations and the distribution of safe drinking water.

(i) The State must conduct sanitary surveys for all surface water systems (including groundwater under the influence) that address the eight sanitary survey components listed in paragraphs (b)(3)(i)(A) through (H) of this section no less frequently than every three years for community systems and no less frequently than every five years for noncommunity systems. The State may allow sanitary surveys conducted after December 1995 to serve as the first set of required sanitary surveys if the surveys address the eight sanitary survey components listed in paragraphs (b)(3)(i)(A) through (H) of this section.

(A) Source.

(B) Treatment.

(C) Distribution system.

(D) Finished water storage.

(E) Pumps, pump facilities, and controls.

(F) Monitoring and reporting and data verification.

(G) System management and operation.

(H) Operator compliance with State requirements.

(ii) For community systems determined by the State to have outstanding performance based on prior sanitary surveys, subsequent sanitary surveys may be conducted no less than every five years. In its primacy application, the State must describe how it will decide whether a system has outstanding performance and is thus eligible for sanitary surveys at a reduced frequency.

(iii) Components of a sanitary survey may be completed as part of a staged or phased state review process within the established frequency.

(iv) When conducting sanitary surveys for systems required to comply with the disinfection profiling requirements in §141.172 of this chapter, the State must also review the disinfection profile as part of the sanitary survey.

(v) In its primacy application, the State must describe how it will decide whether a deficiency identified during a sanitary survey is significant for the purposes of paragraph (b)(1)(ii) of this section.

(c) *Total coliform requirements.* In addition to meeting the general primacy requirements of this part, an application for approval of a State program revision that adopts the requirements of the national primary drinking water regulation for total coliforms must contain the following information:

(1) The application must describe the State's plan for determining whether sample siting plans are acceptable (including periodic reviews), as required by §141.21(a)(1).

(2) The national primary drinking water regulation for total coliforms in part 141 gives States the option to impose lesser requirements in certain circumstances, which are listed below. If a State chooses to exercise any of these options, its application for approval of a program revision must include the information listed below (the State need only provide the information listed for those options it has chosen to use).

(i) Section 141.21(a)(2) (Reduced monitoring requirements for community water systems serving 1,000 or fewer persons)—A description of how the State will determine whether it is appropriate to reduce the total coliform monitoring frequency for such systems using the criteria in §141.21(a)(2) and how it will determine the revised frequency.

(ii) Section 141.21(a)(3)(i) (Reduced monitoring requirements for non-community water systems using ground water and serving 1,000 persons or fewer)—A description of how the State will determine whether it is appropriate to reduce the total coliform monitoring frequency for such systems using the criteria in §141.21(a)(3)(i) and how it will determine the revised frequency.

(iii) Section 141.21(a)(3)(ii) (Reduced monitoring for non-community water systems using ground water and serving more than 1,000 persons)—A description of how the State will determine whether it is appropriate to reduce the total coliform monitoring frequency for non-community water systems using only ground water and serving more than 1,000 persons during any month the system serves 1,000 persons or fewer and how it will determine the revised frequency.

(iv) Section 141.21(a)(5) (Waiver of time limit for sampling after a turbidity sampling result exceeds 1 NTU)—A description of how the State will determine whether it is appropriate to waive the 24-hour time limit.

(v) Section 141.21(b)(1) (Waiver of time limit for repeat samples)—A description of how the State will determine whether it is appropriate to waive the 24-hour time limit and how it will determine what the revised time limit will be.

(vi) Section 141.21(b)(3) (Alternative repeat monitoring requirements for systems with a single service connection)—A description of how the State will determine whether it is appropriate to allow a system with a single service connection to use an alternative repeat monitoring scheme, as provided in §141.21(b)(3), and what the alternative requirements will be.

(vii) Section 141.21(b)(5) (Waiver of requirement to take five routine samples the month after a system has a total coliform-positive sample)—A description of how the State will determine whether it is appropriate to waive the requirement for certain systems to collect five routine samples during the next month it serves water to the public, using the criteria in §141.21(b)(5).

(viii) Section 141.21(c) (Invalidation of total coliform-positive samples)—A description of how the State will determine whether it is appropriate to invalidate a total coliform-positive sample, using the criteria in §141.21(c).

(ix) Section 141.21(d) (Sanitary surveys)—A description of the State's criteria and procedures for approving agents other than State personnel to conduct sanitary surveys.

(x) Section 141.21(e)(2) (Waiver of fecal coliform or *E. coli* testing on a total coliform-positive sample)—A description of how the State will determine whether it is appropriate to waive fecal coliform or *E. coli* testing on a total coliform-positivesample.

(d) *Requirements for States to adopt 40 CFR part 141, subpart I—Control of Lead and Copper.* An application for approval of a State program revision which adopts the requirements specified in 40 CFR part 141, subpart I, must contain (in addition to the general primacy requirements enumerated elsewhere in this part, including the requirement that State regulations be at least as stringent as the federal requirements) a description of how the State will accomplish the following program requirements:

(1) Section 141.82—State designation of optimal corrosion control.

(i) Sections 141.82(d), 141.82(f), and 141.82(h)—Designating optimal corrosion control treatment methods, optimal water quality parameters, and modifications thereto.

(ii) Section 141.82(g)—Designating an alternative approach for aggregating multiple measurements collected during the same day for a water quality parameter at a sampling location, if the State elects to adopt a formula other than the one specified in §141.82(g)(1) of this chapter.

(2) Sections 141.83(b)(2) and 141.83(b)(4)—Designating source water treatment methods, maximum permissible source water levels for lead and copper and modifications thereto.

(3) Section 141.90(e)—Verifying compliance with lead service line replacement schedules and completion of all partial lead service line replacement activities.

(4) Section 141.86(d)(4)(iv)(A)—Designating an alternative period for sample collection for community water systems subject to reduced monitoring.

(e) An application for approval of a State program revision which adopts the requirements specified in §§141.11, 141.23, 141.24, 141.32, 141.61, and 141.62 for a newly regulated contaminant must contain the following (in addition to the general primacy requirements enumerated elsewhere in this part, including the requirement that State regulations be at least as stringent as the Federal requirements):

(1) If a State chooses to issue waivers from the monitoring requirements in §§141.23 and 141.24, the State shall describe the procedures and criteria which it will use to review waiver applications and issue waiver determinations.

(i) The procedures for each contaminant or class of contaminants shall include a description of:

(A) The waiver application requirements;

(B) The State review process for "use" waivers and for "susceptibility" waivers; and

(C) The State decision criteria, including the factors that will be considered in deciding to grant or deny waivers. The decision criteria must include the factors specified in §§141.24(f)(8) and 141.24(h)(6).

(ii) The State must specify the monitoring data and other documentation required to demonstrate that the contaminant is eligible for a "use" and/or "susceptibility" waiver.

(2) A monitoring plan for the initial monitoring period by which the State will assure all systems complete the required initial monitoring within the regulatory deadlines.

NOTE: States may update their monitoring plan submitted under the Phase II Rule or simply note in their application that they will use the same monitoring plan for the Phase V Rule.

(i) The initial monitoring plan must describe how systems will be scheduled during the initial monitoring period and demonstrate that the analytical workload on certified laboratories for each of the three years has been taken into account, to assure that the State's plan will result in a high degree of monitoring compliance and that as a result there is a high probability of compliance and will be updated as necessary.

(ii) The State must demonstrate that the initial monitoring plan is enforceable under State law.

(f) *Consumer Confidence Report requirements.* (1) Each State that has primary enforcement responsibility must adopt the requirements of 40 CFR part 141, subpart O no later than August 21, 2000. States must submit revised programs to EPA for approval using the procedures in §142.12(b) through (d).

(2) Each State that has primary enforcement responsibility must make reports submitted to the States in compliance with 40 CFR 141.155(c) available to the public upon request.

(3) Each State that has primary enforcement responsibility must maintain a copy of the reports for a period of one year and the certifications obtained pursuant to 40 CFR 141.155(c) for a period of 5 years.

(4) Each State that has primary enforcement responsibility must report violations of this subpart in accordance with the requirements of §142.15(a)(1).

(g) *Requirements for States to adopt 40 CFR part 141, Subpart P—Enhanced Filtration and Disinfection—Systems Serving 10,000 or More People.* In addition to the general primacy requirements enumerated elsewhere in this part, including the requirement that State provisions are no less stringent than the Federal requirements, an application for approval of a State program revision that adopts 40 CFR part 141, Subpart P Enhanced Filtration and Disinfection—Systems Serving 10,000 or More People, must contain the information specified in this paragraph:

(1) *Enforceable requirements.* States must have the appropriate rules or other authority to require PWSs to conduct a Composite Correction Program (CCP) and to assure that PWSs implement any followup recommendations that result as part of the CCP. The CCP consists of two elements—a Comprehensive Performance Evaluation (CPE) and Comprehensive Technical Assistance (CTA). A CPE is a thorough review and analysis of a plant's performance-based capabilities and associated administrative, operation and maintenance practices. It is conducted to identify factors that may be adversely impacting a plant's capability to achieve compliance and emphasizes approaches that can be implemented without significant capital improvements. A CTA is the performance improvement phase that is implemented if the CPE results indicate improved performance potential. During

the CTA phase, the system must identify and systematically address plant-specific factors. The CTA is a combination of utilizing CPE results as a basis for followup, implementing process control priority-setting techniques and maintaining long-term involvement to systematically train staff and administrators.

(2) *State practices or procedures*. (i) Section 141.172(a)(3) of this chapter—How the State will approve a more representative annual data set than the data set determined under §141.172 (a)(1) or (2) of this chapter for the purpose of determining applicability of the requirements of §141.172 of this chapter.

(ii) Section 141.172(b)(5) of this chapter—How the State will approve a method to calculate the logs of inactivation for viruses for a system that uses either chloramines or ozone for primary disinfection.

(iii) Section 141.172(c) of this chapter—How the State will consult with PWSs to evaluate modifications to disinfection practice.

(iv) Section 141.173(b) of this chapter—For filtration technologies other than conventional filtration treatment, direct filtration, slow sand filtration, or diatomaceous earth filtration, how the State will determine that a public water system may use a filtration technology if the PWS demonstrates to the State, using pilot plant studies or other means, that the alternative filtration technology, in combination with disinfection treatment that meets the requirements of §141.172(b) of this chapter, consistently achieves 99.9 percent removal and/or inactivation of *Giardia lamblia* cysts and 99.99 percent removal and/or inactivation of viruses, and 99 percent removal of *Cryptosporidium* oocysts. For a system that makes this demonstration, how the State will set turbidity performance requirements that the system must meet 95 percent of the time and that the system may not exceed at any time at a level that consistently achieves 99.9 percent removal and/or inactivation of *Giardia lamblia* cysts, 99.99 percent removal and/or inactivation of viruses, and 99 percent removal of *Cryptosporidium* oocysts.

(h) *Requirements for States to adopt 40 CFR part 141, subpart L*. In addition to the general primacy requirements elsewhere in this part, including the requirement that State regulations be at least as stringent as federal requirements, an application for approval of a State program revision that adopts 40 CFR part 141, subpart L, must contain a description of how the State will accomplish the following program requirements:

(1) Section 141.64(b)(2) of this chapter (interim treatment requirements). Determine any interim treatment requirements for those systems electing to install GAC or membrane filtration and granted additional time to comply with §141.64 of this chapter.

(2) Section 141.130(c) of this chapter (qualification of operators). Qualify operators of public water systems subject to 40 CFR part 141, subpart L. Qualification requirements established for operators of systems subject to 40 CFR part 141, subpart H—Filtration and Disinfection may be used in whole or in part to establish operator qualification requirements for meeting 40 CFR part 141, subpart L requirements if the State determines that the 40 CFR part 141, subpart H requirements are appropriate and applicable for meeting subpart L requirements.

(3) Section 141.131(c)(2) of this chapter (DPD colorimetric test kits). Approve DPD colorimetric test kits for free and total chlorine measurements. State approval granted under §141.74(a)(2) of this chapter for the use of DPD colorimetric test kits for free chlorine testing is acceptable for the use of DPD test kits in measuring free chlorine residuals as required in 40 CFR part 141, subpart L.

(4) Sections 141.131(c)(3) and (d) of this chapter (State approval of parties to conduct analyses). Approve parties to conduct pH, bromide, alkalinity, and residual disinfectant concentration measurements. The State's process for approving parties performing water quality measurements for systems subject to 40 CFR part 141, subpart H requirements in paragraph (b)(2)(i)(D) of this section may be used for approving

parties measuring water quality parameters for systems subject to subpart L requirements, if the State determines the process is appropriate and applicable.

(5) Section 141.132(a)(2) of this chapter (multiple wells as a single source). Define the criteria to use to determine if multiple wells are being drawn from a single aquifer and therefore be considered a single source for compliance with monitoring requirements.

(6) Approve alternate minimum TOC removal (Step 2) requirements, as allowed under the provisions of §141.135(b) of this chapter.

(i) *Requirements for States to adopt 40 CFR part 141, §141.76 Recycle provisions.* In addition to the general primacy requirements enumerated elsewhere in this part, including the requirement that the State provisions are no less stringent than the federal requirements, an application for approval of a State program revision that adopts 40 CFR part 141, §141.76 Recycle Provisions must contain the information specified in this paragraph:

(1) *State practices or procedures.* (i) Section 141.76(d) of this chapter—States must have the proper rules and authority to use Sanitary Surveys, comprehensive performance evaluations (CPEs), other inspections, or other activities to evaluate recycle data maintained by systems under §141.76(d) of this chapter and require modifications to recycle practices.

(ii) [Reserved]

(2) [Reserved]

(j) An application for approval of a State program revision which adopts the requirements specified in §§141.11, 141.23, 141.24, 141.32, 141.61 and 141.62 for an existing regulated contaminant must contain the following (in addition to the general primacy requirements enumerated elsewhere in this part, including the requirement that State regulations be at least as stringent as the federal requirements):

(1) If a State chooses to issue waivers from the monitoring requirements in §§141.23 and 141.24, the State shall describe the procedures and criteria, that it will use to review waiver applications and issue waiver determinations. The State shall provide the same information required in paragraph (e)(1)(i) and (ii) of this section. States may update their existing waiver criteria or use the requirements submitted under the National Primary Drinking Water Regulations for the inorganic and organic contaminants (*i.e.*, Phase II/V rule) in 16(e) of this section. States may simply note in their application any revisions to existing waiver criteria or note that the same procedures to issue waivers will be used.

(2) A monitoring plan by which the State will ensure all systems complete the required monitoring by the regulatory deadlines. States may update their existing monitoring plan or use the same monitoring plan submitted under the National Primary Drinking Water Regulations for the inorganic and organic contaminants (*i.e.*, Phase II/V rule) in 16(e) of this section. States may simply note in their application any revisions to an existing monitoring plan or note that the same monitoring plan will be used. The State must demonstrate that the monitoring plan is enforceable under State law.

(k) States establish the initial monitoring requirements for new systems and new sources. States must explain their initial monitoring schedules and how these monitoring schedules ensure that public water systems and sources comply with MCL's and monitoring requirements. States must also specify the time frame in which new systems will demonstrate compliance with the MCLs.

(l) An application for approval of a State program revision for radionuclides which adopts the requirements specified in §141.26(a)(2)(ii)(C) of this chapter must contain the following (in addition to the general primacy requirements enumerated in this part, including that State regulations be at least as stringent as the Federal requirements):

(1) If a State chooses to use grandfathered data in the manner described in §141.26(a)(2)(ii)(C) of this chapter, then the State must describe the procedures and criteria which it will use to make these determinations (whether distribution system or entry point sampling points are used).

(i) The decision criteria that the State will use to determine that data collected in the distribution system are representative of the drinking water supplied from each entry point to the distribution system. These determinations must consider:

(A) All previous monitoring data.

(B) The variation in reported activity levels.

(C) Other factors affecting the representativeness of the data (e.g. geology).

(ii) [Reserved]

(2) A monitoring plan by which the State will assure all systems complete the required monitoring within the regulatory deadlines. States may update their existing monitoring plan or use the same monitoring plan submitted for the requirements in §142.16(e)(2) under the national primary drinking water regulations for the inorganic and organic contaminants (*i.e.* the phase II/V rules). States may note in their application any revision to an existing monitoring plan or note that the same monitoring plan will be used. The State must demonstrate that the monitoring plan is enforceable under State law.

(m) *Requirements for States to adopt 40 CFR part 141, subparts U and V.* In addition to the general primacy requirements elsewhere in this part, including the requirements that State regulations be at least as stringent as federal requirements, an application for approval of a State program revision that adopts 40 CFR part 141, subparts U and V, must contain a description of how the State will implement a procedure for addressing modification of wholesale system and consecutive system monitoring on a case-by-casebasis for part 141 subpart V outside the provisions of §141.29 of this chapter, if the State elects to use such an authority. The procedure must ensure that all systems have at least one compliance monitoring location.

(n) *Requirements for States to adopt 40 CFR part 141, subpart W.* In addition to the general primacy requirements elsewhere in this part, including the requirements that State regulations be at least as stringent as Federal requirements, an application for approval of a State program revision that adopts 40 CFR part 141, subpart W, must contain a description of how the State will accomplish the following program requirements where allowed in State programs.

(1) Approve an alternative to the *E. coli* levels that trigger *Cryptosporidium* monitoring by filtered systems serving fewer than 10,000 people, as described in §141.701(a)(5).

(2) Assess significant changes in the watershed and source water as part of the sanitary survey process and determine appropriate follow-up action for systems, as described in §141.711(d) of this chapter.

(3) Approve watershed control programs for the 0.5-log treatment credit in the microbial toolbox, as described in §141.716(a) of this chapter.

(4) Approve protocols for demonstration of performance treatment credits in the microbial toolbox, as allowed under §141.718(c) of this chapter.

(5) Approve protocols for alternative ozone and chlorine dioxide CT values in the microbial toolbox, as allowed under §141.720(c) of this chapter.

(6) Approve an alternative approach to UV reactor validation testing in the microbial toolbox, as allowed under §141.720(d)(2)(iii) of this chapter.

(o) *Requirements for States to adopt 40 CFR part 141, subpart S.* In addition to the general primacy requirements specified elsewhere in this part, including the requirement that State regulations are no less stringent than the Federal requirements, an application for approval of a State program revision that adopts 40 CFR part 141, subpart S, must contain the information specified in this paragraph (o).

(1) *Legal authority.* The application for primacy must demonstrate the State has:

(i) The authority contained in statute or regulation to ensure that ground water systems conduct source water monitoring under §§141.402(a)(2), 141.402(a)(3) and 141.402(a)(4)(ii)(A) of this chapter.

(ii) The authority contained in statute or regulation to ensure that ground water systems take the appropriate corrective actions including interim measures, if necessary, needed to address significant deficiencies.

(iii) The authority contained in statute or regulation to ensure that ground water systems take the appropriate corrective actions, including interim measures if necessary, to address any source water fecal contamination identified during source water monitoring under §141.402 of this chapter.

(iv) The authority contained in statute or regulation to ensure that ground water systems consult with the State regarding corrective action(s).

(2) *State practices or procedures for sanitary surveys.* In addition to the general requirements for sanitary surveys contained in §142.10(b)(2), a primacy application must describe how the State will implement a sanitary survey program that meets the requirements of paragraph (o)(2)(i) of this section. A ''sanitary survey,'' as conducted by the State, includes but is not limited to, an onsite review of the water source(s) (identifying sources of contamination by using results of source water assessments or other relevant information where available), facilities, equipment, operation, maintenance, and monitoring compliance of a public water system to evaluate the adequacy of the system, its sources and operations and the distribution of safe drinking water.

(i) The State must conduct sanitary surveys that address the eight sanitary survey components listed in this section no less frequently than every three years for community water systems, except as provided in paragraph (o)(2)(iii) of this section, and every five years for non-community water systems. The State may conduct more frequent sanitary surveys for any system. The initial sanitary survey for each community water system must be conducted by December 31, 2012, unless the system meets the requirements of paragraph (o)(2)(iii) of this section. The initial sanitary survey for each community water system that meets the requirements of paragraph (o)(2)(iii) of this section and for each non-community water system must be conducted by December 31, 2014. The sanitary survey must include an evaluation of each of the following elements as applicable:

(A) Source,

(B) Treatment,

(C) Distribution system,

(D) Finished water storage,

(E) Pumps, pump facilities, and controls,

(F) Monitoring, reporting, and data verification,

(G) System management and operation, and

(H) Operator compliance with State requirements.

(ii) The State may use a phased review process to meet the requirements of (o)(2)(i) of this section if all the applicable elements of paragraphs (o)(2)(i)(A) through (o)(2)(i)(H) of this section are evaluated within the required interval.

(iii) The State may conduct sanitary surveys once every five years for community water systems if the system either provides at least 4-log treatment of viruses (using inactivation, removal, or a State-approved combination of 4-log inactivation and removal) before or at the first customer for all its ground water sources, or if it has an outstanding performance record, as determined by the State and documented in previous sanitary surveys and has no history of total coliform MCL or monitoring violations under §141.21 of this chapter since the last sanitary survey. In its primacy application, the State must describe how it will determine whether a community water system has an outstanding performance record.

(iv) The State must define and describe in its primacy application at least one specific significant deficiency in each of the eight sanitary survey elements in paragraphs (o)(2)(i)(A) through (o)(2)(i)(H) of this section. Significant deficiencies include, but are not limited to, defects in design, operation, or maintenance, or a failure or malfunction of the sources, treatment, storage, or distribution system that the State determines to be causing, or have potential for causing, the introduction of contamination into the water delivered to consumers.

(v) As a condition of primacy, the State must provide ground water systems with written notice describing any significant deficiencies no later than 30 days after the State identifies the significant deficiency. The notice may specify corrective actions and deadlines for completion of corrective actions. The State may provide the written notice at the time of the sanitary survey.

(3) *State practices or procedures for source water microbial monitoring.* The

State's primacy application must include a description of the following:

(i) The criteria the State will use under §§141.402(a)(2)(i) and 141.402(d)(2) of this chapter for extending the 24-hour time limit for a system to collect a ground water source sample to comply with the source water monitoring requirements.

(ii) The criteria the State will use under §§141.402(a)(5)(i) and 141.402(a)(5)(ii) of this chapter to determine whether the cause of the total coliform-positive sample taken under §141.21(a) of this chapter is directly related to the distribution system.

(iii) The criteria the State will use for determining whether to invalidate a fecal indicator-positive ground water source sample under §141.402(d)(1)(ii) of this chapter.

(iv) The criteria the State will use to allow source water microbial monitoring at a location after treatment under §141.402(e)(1) of this chapter.

(4) *State practices or procedures for treatment technique requirements*. As a condition of primacy, the State must verify that significant deficiencies or source water fecal contamination have been addressed. The State must verify within 30 days after the ground water system has reported to the State that it has completed corrective action. The State must verify either through written confirmation from the ground water system or a site visit by the State. Written notice from the ground water system under §141.405(a)(2) of this chapter may serve as this verification. The State's primacy application must include the following:

(i) The process the State will use to determine that a ground water system achieves at least a 4-log treatment of viruses (using inactivation, removal, or a combination of inactivation and removal) before or at the first customer for a ground water source for systems that are not subject to the source water monitoring requirements of §141.402(a) of this chapter because the ground water system has informed the State that it provides at least 4-log treatment of viruses.

(ii) The process the State will use to determine the minimum residual disinfectant concentration the system must provide prior to the first customer for systems using chemical disinfection.

(iii) The State-approved alternative technologies that ground water systems may use alone or in combination with other approved technologies to achieve at least 4-log treatment of viruses (using inactivation, removal, or a State-approved combination of 4-log inactivation and removal) before or at the first customer for a ground water source.

(iv) The monitoring and compliance requirements the State will require for ground water systems treating to at least 4-log treatment of viruses (using inactivation, removal, or a State-approved combination of inactivation and removal) before or at the first customer for State-approved alternative treatment technologies.

(v) The monitoring, compliance and membrane integrity testing requirements the State will require to demonstrate virus removal for ground water systems using membrane filtration technologies.

(vi) The criteria, including public health-based considerations and incorporating on-site investigations and source water monitoring results the State will use to determine if a ground water system may discontinue 4-log treatment of viruses (using inactivation, removal, or a State-approved combination of inactivation and removal) before or at the first customer.

(p) *Requirements for States to adopt 40 CFR part 141, Subpart T—Enhanced Filtration and Disinfection—Systems Serving Fewer Than 10,000 People*. In addition to the general primacy requirements enumerated elsewhere in this part, including the requirement that State provisions are no less stringent than the Federal requirements, an application for approval of a State program revision that adopts 40 CFR part 141, Subpart T—Enhanced Filtration and Disinfection—Systems Serving Fewer than 10,000 People, must contain the information specified in this paragraph:

(1) *Enforceable requirements.* States must have rules or other authority to require systems to participate in a Comprehensive Technical Assistance (CTA) activity, the performance improvement phase of the Composite Correction Program (CCP). The State

must determine whether a CTA must be conducted based on results of a CPE which indicate the potential for improved performance, and a finding by the State that the system is able to receive and implement technical assistance provided through the CTA. A CPE is a thorough review and analysis of a system's performance-based capabilities and associated administrative, operation and maintenance practices. It is conducted to identify factors that may be adversely impacting a plant's capability to achieve compliance. During the CTA phase, the system must identify and systematically address factors limiting performance. The CTA is a combination of utilizing CPE results as a basis for follow-up, implementing process control priority-setting techniques and maintaining long-term involvement to systematically train staff and administrators.

(2) *State practices or procedures*. (i) Section 141.530–141.536—How the State will approve a more representative data set for optional TTHM and HAA5 monitoring and profiling.

(ii) Section 141.535 of this chapter—How the State will approve a method to calculate the logs of inactivation for viruses for a system that uses either chloramines, ozone, or chlorine dioxide for primary disinfection.

(iii) Section 141.542 of this chapter—How the State will consult with the system and approve significant changes to disinfection practices.

(iv) Section 141.552 of this chapter—For filtration technologies other than conventional filtration treatment, direct filtration, slow sand filtration, or diatomaceous earth filtration, how the State will determine that a public water system may use a filtration technology if the PWS demonstrates to the State, using pilot plant studies or other means, that the alternative filtration technology, in combination with disinfection treatment that meets the requirements of §141.72(b) of this chapter, consistently achieves 99.9 percent removal and/or inactivation of *Giardia lamblia* cysts and 99.99 percent removal and/or inactivation of viruses, and 99 percent removal of *Cryptosporidium* oocysts. For a system that makes this demonstration, how the State will set turbidity performance requirements that the system must meet 95 percent of the time and that the system may not exceed at any time at a level that consistently achieves 99.9 percent removal and/or inactivation of *Giardia lamblia* cysts, 99.99 percent removal and/or inactivation of viruses, and 99 percent removal of *Cryptosporidium* oocysts.

(q) *Requirements for States to adopt 40 CFR part 141 subpart Y—Revised Total Coliform Rule*. In addition to the general primacy requirements elsewhere in this part, including the requirements that State regulations be at least as stringent as federal requirements, an application for approval of a State program revision that adopts 40 CFR part 141, subpart Y, must contain the information specified in this paragraph (q).

(1) In their application to EPA for approval to implement the federal requirements, the primacy application must indicate what baseline and reduced monitoring provisions of 40 CFR part 141, subpart Y the State will adopt and must describe how they will implement 40 CFR part 141, subpart Y in these areas so that EPA can be assured that implementation plans meet the minimum requirements of the rule.

(2) The State's application for primacy for subpart Y must include a written description for each provision included in paragraphs (q)(2)(i) through (ix) of this section.

(i) Sample Siting Plans—The frequency and process used to review and revise sample siting plans in accordance with 40 CFR part 141, subpart Y to determine adequacy.

(ii) Reduced Monitoring Criteria—An indication of whether the State will adopt the reduced monitoring provisions of 40 CFR part 141, subpart Y. If the State adopts the reduced monitoring provisions, it must describe the specific types or categories of water systems that will be covered by reduced monitoring and whether the State will use all or a reduced set of the criteria specified in §§141.854(h)(2) and 141.855(d)(1)(iii) of this chapter. For each of the reduced monitoring criteria, the State must describe how the criterion will be evaluated to determine when systems qualify.

(iii) Assessments and Corrective Actions—The process for implementing the new assessment and corrective action phase of the rule, including the elements in paragraphs (q)(2)(iii)(A) through (D) of this section.

(A) Elements of Level 1 and Level 2 assessments. This must include an explanation of how the State will ensure that Level 2 assessments provide a more detailed examination of the system (including the system's monitoring and operational practices) than do Level 1 assessments through the use of more comprehensive investigation and review of available information, additional internal and external resources, and other relevant practices.

(B) Examples of sanitary defects.

(C) Examples of assessment forms or formats.

(D) Methods that systems may use to consult with the State on appropriate corrective actions.

(iv) Invalidation of routine and repeat samples collected under 40 CFR part 141, subpart Y—The criteria and process for invalidating total coliform and *E. coli*-positive samples under 40 CFR part 141, subpart Y. This description must include criteria to determine if a sample was improperly processed by the laboratory, reflects a domestic or other non-distribution system plumbing problem or reflects circumstances or conditions that do not reflect water quality in the distribution system.

(v) Approval of individuals allowed to conduct Level 2 assessments under 40 CFR part 141, subpart Y—The criteria and process for approval of individuals allowed to conduct Level 2 assessments under 40 CFR part 141, subpart Y.

(vi) Special monitoring evaluation—The procedure for performing special monitoring evaluations during sanitary surveys for ground water systems serving 1,000 or fewer people to determine whether systems are on an appropriate monitoring schedule.

(vii) Seasonal systems—How the State will identify seasonal systems, how the State will determine when systems on less than monthly monitoring must monitor, and what start-up provisions seasonal system must meet under 40 CFR part 141, subpart Y.

(viii) Additional criteria for reduced monitoring—How the State will require systems on reduced monitoring to demonstrate:

(A) Continuous disinfection entering the distribution system and a residual in the distribution system.

(B) Cross connection control.

(C) Other enhancements to water system barriers.

(ix) Criteria for extending the 24-hour period for collecting repeat samples.—Under §§141.858(a) and 141.853(c)(2) of this chapter, criteria for systems to use in lieu of case-by-casedecisions to waive the 24-hour time limit for collecting repeat samples after a total coliform-positive routine sample, or to extend the 24-hour limit for collection of samples following invalidation. If the State elects to use only case-by-case waivers, the State does not need to develop and submit criteria.

[54 FR 15188, Apr. 17, 1989]

EDITORIAL NOTE: For FEDERAL REGISTER citations affecting §142.16, see the List of CFR Sections Affected, which appears in the Finding Aids section of the printed volume and at *www.fdsys.gov*.

§142.17 Review of State programs and procedures for withdrawal of approved primacy programs.

(a)(1) At least annually the Administrator shall review, with respect to each State determined to have primary enforcement responsibility, the compliance of the State with the requirements set forth in 40 CFR part 142, subpart B, and the approved State primacy program. At the time of this review, the State shall notify the Administrator of any State-initiated program changes (*i.e.*, changes other than those to adopt new or revised EPA regulations), and of any transfer of all or part of its program from the approved State agency to any other State agency.

(2) When, on the basis of the Administrator's review or other available information, the Administrator determines that a State no longer meets the requirements set forth in 40 CFR part 142, subpart B, the Administrator shall initiate proceedings to withdraw primacy approval. Among the factors the Administrator intends to consider as relevant to this determination are the following, where appropriate: whether

the State has requested and has been granted, or is awaiting EPA's decision on, an extension under §142.12(b)(2) of the deadlines for meeting those requirements; and whether the State is taking corrective actions that may have been required by the Administrator. The Administrator shall notify the State in writing that EPA is initiating primacy withdrawal proceedings and shall summarize in the notice the information available that indicates that the State no longer meets such requirements.

(3) The State notified pursuant to paragraph (a)(2) of this section may, within 30 days of receiving the Administrator's notice, submit to the Administrator evidence demonstrating that the State continues to meet the requirements for primary enforcement responsibility.

(4) After reviewing the submission of the State, if any, made pursuant to paragraph (a)(3) of this section, the Administrator shall make a final determination either that the State no longer meets the requirements of 40 CFR part 142, subpart B, or that the State continues to meet those requirements, and shall notify the State of his or her determination. Any final determination that the State no longer meets the requirements of 40 CFR part 142, subpart B, shall not become effective except as provided in §142.13.

(b) If a State which has primary enforcement responsibility decides to relinquish that authority, it may do so by notifying the Administrator in writing of the State's decision at least 90 days before the effective date of the decision.

[54 FR 52140, Dec. 20, 1989, as amended at 60 FR 33661, June 28, 1995]

§142.18 EPA review of State monitoring determinations.

(a) A Regional Administrator may annul a State monitoring determination for the types of determinations identified in §§141.23(b), 141.23(c), 141.24(f), 141.24(h), and 141.40(n) in accordance with the procedures in paragraph (b) of this section.

(b) When information available to a Regional Administrator, such as the results of an annual review, indicate a State determination fails to apply the standards of the approved State program, he may propose to annul the State monitoring determination by sending the State and the affected PWS a draft Rescission Order. The draft order shall:

(1) Identify the PWS, the State determination, and the provisions at issue;

(2) Explain why the State determination is not in compliance with the State program and must be changed; and

(3) Describe the actions and terms of operation the PWS will be required to implement.

(c) The State and PWS shall have 60 days to comment on the draft Rescission Order.

(d) The Regional Administrator may not issue a Rescission Order to impose conditions less stringent than those imposed by the State.

(e) The Regional Administrator shall also provide an opportunity for comment upon the draft Rescission Order, by

(1) Publishing a notice in a newspaper in general circulation in communities served by the affected system; and

(2) Providing 30 days for public comment on the draft order.

(f) The State shall demonstrate that the determination is reasonable, based on its approved State program.

(g) The Regional Administrator shall decide within 120 days after issuance of the draft Rescission Order to:

(1) Issue the Rescission Order as drafted;

(2) Issue a modified Rescission Order; or

(3) Cancel the Rescission Order.

(h) The Regional Administrator shall set forth the reasons for his decision, including a responsiveness summary addressing significant comments from the State, the PWS and the public.

(i) The Regional Administrator shall send a notice of his final decision to the State, the PWS and all parties who commented upon the draft Rescission Order.

(j) The Rescission Order shall remain in effect until cancelled by the Regional Administrator. The Regional Administrator may cancel a Rescission

Order at any time, so long as he notifies those who commented on the draft order.

(k) The Regional Administrator may not delegate the signature authority for a final Rescission Order or the cancellation of an order.

(l) Violation of the actions, or terms of operation, required by a Rescission Order is a violation of the Safe Drinking Water Act.

[56 FR 3595, Jan. 30, 1991]

§142.19 EPA review of State implementation of national primary drinking water regulations for lead and copper.

(a) Pursuant to the procedures in this section, the Regional Administrator may review state determinations establishing corrosion control or source water treatment requirements for lead or copper and may issue an order establishing federal treatment requirements for a public water system pursuant to §141.82 (d) and (f) and §141.83(b) (2) and (4) where the Regional Administrator finds that:

(1) A State has failed to issue a treatment determination by the applicable deadline;

(2) A State has abused its discretion in making corrosion control or source water treatment determinations in a substantial number of cases or in cases affecting a substantial population, or

(3) The technical aspects of State's determination would be indefensible in an expected federal enforcement action taken against a system.

(b) If the Regional Administrator determines that review of state determination(s) under this section may be appropriate, he shall request the State to forward to EPA the state determination and all information that was considered by the State in making its determination, including public comments, if any, within 60 days of the Regional Adminstrator's request.

(c) Proposed review of state determinations:

(1) Where the Regional Administrator finds that review of a state determination under paragraph (a) of this section is appropriate, he shall issue a proposed review order which shall:

(i) Identify the public water system(s) affected, the State determination being reviewed and the provisions of state and/or federal law at issue;

(ii) Identify the determination that the State failed to carry out by the applicable deadline, or identify the particular provisions of the State determination which, in the Regional Administrator's judgment, fail to carry out properly applicable treatment requirements, and explain the basis for the Regional Administrator's conclusion;

(iii) Identify the treatment requirements which the Regional Administrator proposes to apply to the affected system(s), and explain the basis for the proposed requirements;

(iv) Request public comment on the proposed order and the supporting record.

(2) The Regional Administrator shall provide notice of the proposed review order by:

(i) Mailing the proposed order to the affected public water system(s), the state agency whose order is being reviewed, and any other parties of interest known to the Regional Administrator; and

(ii) Publishing a copy of the proposed order in a newspaper of general circulation in the affected communities.

(3) The Regional Administrator shall make available for public inspection during the comment period the record supporting the proposed order, which shall include all of the information submitted by the State to EPA under paragraph (b) of this section, all other studies, monitoring data and other information considered by the Agency in developing the proposed order.

(d) Final review order:

(1) Based upon review of all information obtained regarding the proposed review order, including public comments, the Regional Administrator shall issue a final review order within 120 days after issuance of the proposed order which affirms, modifies, or withdraws the proposed order. The Regional Administrator may extend the time period for issuing the final order for good cause. If the final order modifies or withdraws the proposed order, the final order shall explain the reasons supporting the change.

(2) The record of the final order shall consist of the record supporting the

proposed order, all public comments, all other information considered by the Regional Administrator in issuing the final order and a document responding to all significant public comments submitted on the proposed order. If new points are raised or new material supplied during the public comment period, the Regional Administrator may support the responses on those matters by adding new materials to the record. The record shall be complete when the final order is issued.

(3) Notice of the final order shall be provided by mailing the final order to the affected system(s), the State, and all parties who commented on the proposed order.

(4) Upon issuance of the final order, its terms constitute requirements of the national primary drinking water regulation for lead and/or copper until such time as the Regional Administrator issues a new order (which may include recision of the previous order) pursuant to the procedures in this section. Such requirements shall supersede any inconsistent treatment requirements established by the State pursuant to the national primary drinking water regulations for lead and copper.

(5) The Regional Administrator may not issue a final order to impose conditions less stringent than those imposed by the State.

(e) The Regional Administrator may not delegate authority to sign the final order under this section.

(f) Final action of the Regional Administrator under paragraph (d) of this section shall constitute action of the Administrator for purposes of 42 U.S.C. §300j–7(a)(2).

[56 FR 26563, June 7, 1991]

Subpart C—Review of State-Issued Variances and Exemptions

§142.20 State-issued variances and exemptions under Section 1415(a) and Section 1416 of the Act.

(a) States with primary enforcement responsibility may issue variances to public water systems (other than small system variances) from the requirements of primary drinking water regulations under conditions and in a manner which are not less stringent than the requirements under Section 1415(a) of the Act. In States that do not have primary enforcement responsibility, variances may be granted by the Administrator pursuant to Subpart E of this part.

(1) A State must document all findings that are required under Section 1415(a) of the Act.

(2) If a State prescribes a schedule pursuant to section 1415(a) of the Act requiring compliance with a contaminant level for which the variance is granted later than five years from the date of issuance of the variance the State must—

(i) Document its rationale for the extended compliance schedule;

(ii) Discuss the rationale for the extended compliance schedule in the required public notice and opportunity for public hearing; and

(iii) Provide the shortest practicable time schedule feasible under the circumstances.

(b) States with primary enforcement responsibility may issue exemptions from the requirements of primary drinking water regulations under conditions and in a manner which are not less stringent than the requirements under Section 1416 of the Act. In States that do not have primary enforcement responsibility, exemptions may be granted by the Administrator pursuant to Subpart F of this part.

(1) A State must document all findings that are required under Section 1416 of the Act:

(i) Before finding that management and restructuring changes cannot be made, a State must consider the following measures, and the availability of State Revolving Loan Fund assistance, or any other Federal or State program, that is reasonably likely to be available within the period of the exemption to implement these measures:

(A) Consideration of rate increases, accounting changes, the appointment of a State-certified operator under the State's Operator Certification program, contractual agreements for joint operation with one or more public water systems;

(B) Activities consistent with the State's Capacity Development Strategy to help the public water system acquire and maintain technical, financial, and managerial capacity to come into compliance with the Act; and

(C) Ownership changes, physical consolidation with another public water system, or other feasible and appropriate means of consolidation which would result in compliance with the Act;

(ii) The State must consider the availability of an alternative source of water, including the feasibility of partnerships with neighboring public water systems, as identified by the public water system or by the State consistent with the Capacity Development Strategy.

(2) In the case of a public water system serving a population of not more than 3,300 persons and which needs financial assistance for the necessary improvements under the initial compliance schedule, an exemption granted by the State under section 1416(b)(2)(B)(i) or (ii) of the Act may be renewed for one or more additional 2-year periods, but not to exceed a total of 6 additional years, only if the State establishes that the public water system is taking all practicable steps to meet the requirements of Section 1416(b)(2)(B) of the Act and the established compliance schedule to achieve full compliance with the contaminant level or treatment technique for which the exemption was granted. A State must document its findings in granting an extension under this paragraph.

[63 FR 43847, Aug. 14, 1998]

§142.21 State consideration of a variance or exemption request.

A State with primary enforcement responsibility shall act on any variance or exemption request submitted to it, within 90 days of receipt of the request.

§142.22 Review of State variances, exemptions and schedules.

(a) Not later than 18 months after the effective date of the interim national primary drinking water regulations the Administrator shall complete a comprehensive review of the variances and exemptions granted (and schedules prescribed pursuant thereto) by the States with primary enforcement responsibility during the one-yearperiod beginning on such effective date. The Administrator shall conduct such subsequent reviews of exemptions and schedules as he deems necessary to carry out the purposes of this title, but at least one review shall be completed within each 3-year period following the completion of the first review under this paragraph.

(b) Notice of a proposed review shall be published in the FEDERAL REGISTER. Such notice shall (1) provide information respecting the location of data and other information respecting the variances and exemptions to be reviewed (including data and other information concerning new scientific matters bearing on such variances and exemptions), and (2) advise of the opportunity to submit comments on the variances and exemptions reviewed and on the need for continuing them. Upon completion of any such review, the Administrator shall publish in the FEDERAL REGISTER the results of his review, together with findings responsive to any comments submitted in connection with such review.

§142.23 Notice to State.

(a) If the Administrator finds that a State has, in a substantial number of instances, abused its discretion in granting variances or exemptions under section 1415(a) or section 1416(a) of the Act or failed to prescribe schedules in accordance with section 1415(a) or section 1416(b) of the Act, he shall notify the State of his findings. Such notice shall:

(1) Identify each public water system for which the finding was made;

(2) Specify the reasons for the finding; and

(3) As appropriate, propose revocation of specific variances or exemptions, or propose revised schedules for specific public water systems.

(b) The Administrator shall also notify the State of a public hearing to be held on the provisions of the notice required by paragraph (a) of this section. Such notice shall specify the time and location for the hearing. If, upon notification of a finding by the Administrator, the State takes adequate corrective action, the Administrator shall rescind his notice to the State of a public hearing, provided that the Administrator is notified of the corrective action prior to the hearing.

(c) The Administrator shall publish notice of the public hearing in the FEDERAL REGISTER and in a newspaper or newspapers of general circulation in the involved State including a summary of the findings made pursuant to paragraph (a) of this section, a statement of the time and location for the hearing, and the address and telephone number of an office at which interested persons may obtain further information concerning the hearing.

(d) Hearings convened pursuant to paragraphs (b) and (c) of this section shall be conducted before a hearing officer to be designated by the Administrator. The hearing shall be conducted by the hearing officer in an informal, orderly and expeditious manner. The hearing officer shall have authority to call witnesses, receive oral and written testimony and take such other action as may be necessary to assure the fair and efficient conduct of the hearing. Following the conclusion of the hearing, the hearing officer shall forward the record of the hearing to the Administrator.

(e) Within 180 days after the date notice is given pursuant to paragraph (b) of this section, the Administrator shall:

(1) Rescind the finding for which the notice was given and promptly notify the State of such rescission, or

(2) Promulgate with any modifications as appropriate such revocation and revised schedules proposed in such notice and promptly notify the State of such action.

(f) A revocation or revised schedule shall take effect 90 days after the State is notified under paragraph (e)(2) of this section.

§142.24 Administrator's rescission.

If, upon notification of a finding by the Administrator under §142.23, the State takes adequate corrective action before the effective date of the revocation or revised schedule, the Administrator shall rescind the application of his finding to that variance, exemption or schedule.

Subpart D—Federal Enforcement

§142.30 Failure by State to assure enforcement.

(a) The Administrator shall notify a State and the appropriate supplier of water whenever he finds during a period in which the State has primary enforcement responsibility for public water systems that a public water system within such State is not in compliance with any primary drinking water regulation contained in part 141 of this chapter or with any schedule or other requirements imposed pursuant to a variance or exemption granted under section 1415 or 1416 of the Act: *Provided,* That the State will be deemed to have been notified of a violation referred to in a report submitted by the State.

(b) The Administrator shall provide advice and technical assistance to such State and public water system as may be appropriate to bring the system into compliance by the earliest feasible time.

[41 FR 2918, Jan. 20, 1976, as amended at 52 FR 20675, June 2, 1987]

§142.31 [Reserved]

§142.32 Petition for public hearing.

(a) If the Administrator makes a finding of noncompliance pursuant to §142.30 with respect to a public water system in a State which has primary enforcement responsibility, the Administrator may, for the purpose of assisting that State in carrying out such responsibility and upon the petition of such State or public water system or persons served by such system, hold, after appropriate notice, public hearings for the purpose of gathering information as described in §142.33.

(b) A petition for a public hearing pursuant to paragraph (a) of this section shall be filed with the Administrator and shall include the following information:

(1) The name, address and telephone number of the individual or other entity requesting a hearing.

(2) If the petition is filed by a person other than the State or public water

system, a statement that the person is served by the system.

(3) A brief statement of information that the requesting person intends to submit at the requested hearing.

(4) The signature of the individual submitting the petition; or, if the petition is filed on behalf of a State, public water system or other entity, the signature of a responsible official of the State or other entity.

§142.33 Public hearing.

(a) If the Administrator grants the petition for public hearing, he shall give appropriate public notice of such hearing. Such notice shall be by publication in the FEDERAL REGISTER and in a newspaper of general circulation or by other appropriate communications media covering the area served by such public water system.

(b) A hearing officer designated by the Administrator shall gather during the public hearing information from technical or other experts, Federal, State, or other public officials, representatives of the public water system, persons served by the system, and other interested persons on:

(1) The ways in which the system can within the earliest feasible time be brought into compliance, and

(2) The means for the maximum feasible protection of the public health during any period in which such system is not in compliance.

(c) On the basis of the hearing and other available information the Administrator shall issue recommendations which shall be sent to the State and public water system and shall be made available to the public and communications media.

§142.34 Entry and inspection of public water systems.

(a) Any supplier of water or other person subject to a national primary drinking water regulation shall, at any time, allow the Administrator, or a designated representative of the Administrator, upon presenting appropriate credentials and a written notice of inspection, to enter any establishment, facility or other property of such supplier or other person to determine whether such supplier or other person has acted or is acting in compliance with the requirements of the Act or subchapter D of this chapter. Such inspection may include inspection, at reasonable times, of records, files, papers, processes, controls and facilities, or testing of any feature of a public water system, including its raw water source.

(b) Prior to entry into any establishment, facility or other property within a State which has primary enforcement responsibility, the Administrator shall notify, in writing, the State agency charged with responsibility for safe drinking water of his intention to make such entry and shall include in his notification a statement of reasons for such entry. The Administrator shall, upon a showing by the State agency that such an entry will be detrimental to the administration of the State's program of primary enforcement responsibility, take such showing into consideration in determining whether to make such entry. The Administrator shall in any event offer the State agency the opportunity of having a representative accompany the Administrator or his representative on such entry.

(c) No State agency which receives notice under paragraph (b) of this section may use the information contained in the notice to inform the person whose property is proposed to be entered of the proposed entry; if a State so uses such information, notice to the agency under paragraph (b) of this section is not required for subsequent inspections of public water systems until such time as the Administrator determines that the agency has provided him satisfactory assurances that it will no longer so use information contained in a notice received under paragraph (b) of this section.

Subpart E—Variances Issued by the Administrator Under Section 1415(a) of the Act

§142.40 Requirements for a variance.

(a) The Administrator may grant one or more variances to any public water system within a State that does not have primary enforcement responsibility from any requirement respecting a maximum contaminant level of an applicable national primary drinking water regulation upon a finding that:

(1) Because of characteristics of the raw water sources which are reasonably available to the system, the system cannot meet the requirements respecting the maximum contaminant levels of such drinking water regulations despite application of the best technology, treatment techniques, or other means, which the Administrator finds are generally available (taking costs into consideration); and

(2) The granting of a variance will not result in an unreasonable risk to the health of persons served by the system.

(b) The Administrator may grant one or more variances to any public water system within a State that does not have primary enforcement responsibility from any requirement of a specified treatment technique of an applicable national primary drinking water regulation upon a finding that the public water system applying for the variance has demonstrated that such treatment technique is not necessary to protect the health of persons because of the nature of the raw water source of such system.

§142.41 Variance request.

A supplier of water may request the granting of a variance pursuant to this subpart for a public water system within a State that does not have primary enforcement responsibility by submitting a request for a variance in writing to the Administrator. Suppliers of water may submit a joint request for variances when they seek similar variances under similar circumstances. Any written request for a variance or variances shall include the following information:

(a) The nature and duration of variance requested.

(b) Relevant analytical results of water quality sampling of the system, including results of relevant tests conducted pursuant to the requirements of the national primary drinking water regulations.

(c) For any request made under §142.40(a):

(1) Explanation in full and evidence of the best available treatment technology and techniques.

(2) Economic and legal factors relevant to ability to comply.

(3) Analytical results of raw water quality relevant to the variance request.

(4) A proposed compliance schedule, including the date each step toward compliance will be achieved. Such schedule shall include as a minimum the following dates:

(i) Date by which arrangement for alternative raw water source or improvement of existing raw water source will be completed.

(ii) Date of initiation of the connection of the alternative raw water source or improvement of existing raw water source.

(iii) Date by which final compliance is to be achieved.

(5) A plan for the provision of safe drinking water in the case of an excessive rise in the contaminant level for which the variance is requested.

(6) A plan for additional interim control measures during the effective period of variance.

(d) For any request made under §142.40(b), a statement that the system will perform monitoring and other reasonable requirements prescribed by the Administrator as a condition to the variance.

(e) Other information, if any, believed to be pertinent by the applicant.

(f) Such other information as the Administrator may require.

[41 FR 2918, Jan. 20, 1976, as amended at 52 FR 20675, June 2, 1987]

§142.42 Consideration of a variance request.

(a) The Administrator shall act on any variance request submitted pursuant to §142.41 within 90 days of receipt of the request.

(b) In his consideration of whether the public water system is unable to comply with a contaminant level required by the national primary drinking water regulations because of the nature of the raw water source, the Administrator shall consider such factors as the following:

(1) The availability and effectiveness of treatment methods for the contaminant for which the variance is requested.

(2) Cost and other economic considerations such as implementing treatment, improving the quality of the source water or using an alternate source.

(c) A variance may be issued to a public water system on the condition that the public water system install the best technology, treatment techniques, or other means, which the Administrator finds are available (taking costs into consideration) and based upon an evaluation satisfactory to the Administrator that indicates that alternative sources of water are not reasonably available to the public water system.

(d) In his consideration of whether a public water system should be granted a variance to a required treatment technique because such treatment is unnecessary to protect the public health, the Administrator shall consider such factors as the following:

(1) Quality of the water source including water quality data and pertinent sources of pollution.

(2) Source protection measures employed by the public water system.

[41 FR 2918, Jan. 20, 1976, as amended at 52 FR 20675, June 2, 1987; 63 FR 43847, Aug. 14, 1998]

§142.43 Disposition of a variance request.

(a) If the Administrator decides to deny the application for a variance, he shall notify the applicant of his intention to issue a denial. Such notice shall include a statement of reasons for the proposed denial, and shall offer the applicant an opportunity to present, within 30 days of receipt of the notice, additional information or argument to the Administrator. The Administrator shall make a final determination on the request within 30 days after receiving any such additional information or argument. If no additional information or argument is submitted by the applicant the application shall be denied.

(b) If the Administrator proposes to grant a variance request submitted pursuant to §142.41, he shall notify the applicant of his decision in writing. Such notice shall identify the variance, the facility covered, and shall specify the period of time for which the variance will be effective.

(1) For the type of variance specified in §142.40(a) such notice shall provide that the variance will be terminated when the system comes into compliance with the applicable regulation, and may be terminated upon a finding by the Administrator that the system has failed to comply with any requirements of a final schedule issued pursuant to §142.44.

(2) For the type of variance specified in §142.40(b) such notice shall provide that the variance may be terminated at any time upon a finding that the nature of the raw water source is such that the specified treatment technique for which the variance was granted is necessary to protect the health of persons or upon a finding that the public water system has failed to comply with monitoring and other requirements prescribed by the Administrator as a condition to the granting of the variance.

(c) For a variance specified in §142.40(a)(1) the Administrator shall propose a schedule for:

(1) Compliance (including increments of progress) by the public water system with each contaminant level requirement covered by the variance; and,

(2) Implementation by the public water system of such additional control measures as the Administrator may require for each contaminant covered by the variance.

(d) The proposed schedule for compliance shall specify dates by which steps towards compliance are to be taken, including at the minimum, where applicable:

(1) Date by which arrangement for an alternative raw water source or improvement of existing raw water source will be completed.

(2) Date of initiation of the connection for the alternative raw water source or improvement of the existing raw water source.

(3) Date by which final compliance is to be achieved.

(e) The proposed schedule may, if the public water system has no access to an alternative raw water source, and can effect or anticipate no adequate improvement of the existing raw water source, specify an indefinite time period for compliance until a new and effective treatment technology is developed at which time a new compliance schedule shall be prescribed by the Administrator.

(f) The proposed schedule for implementation of additional interim control measures during the period of variance shall specify interim treatment techniques, methods and equipment, and dates by which steps toward meeting the additional interim control measures are to be met.

(g) The schedule shall be prescribed by the Administrator at the time of granting of the variance, subsequent to provision of opportunity for hearing pursuant to §142.44.

[41 FR 2918, Jan. 20, 1976, as amended at 52 FR 20675, June 2, 1987]

§142.44 Public hearings on variances and schedules.

(a) Before a variance and schedule proposed by the Administrator pursuant to §142.43 may take effect, the Administrator shall provide notice and opportunity for public hearing on the variance and schedule. A notice given pursuant to the preceding sentence may cover the granting of more than one variance and a hearing held pursuant to such notice shall include each of the variances covered by the notice.

(b) Public notice of an opportunity for hearing on a variance and schedule shall be circulated in a manner designed to inform interested and potentially interested persons of the proposed variance and schedule, and shall include at least the following:

(1) Posting of a notice in the principal post office of each municipality or area served by the public water system, and publishing of a notice in a newspaper or newspapers of general circulation in the area served by the public water system; and

(2) Mailing of a notice to the agency of the State in which the system is located which is responsible for the State's water supply program, and to other appropriate State or local agencies at the Administrator's discretion.

(3) Such notice shall include a summary of the proposed variance and schedule and shall inform interested persons that they may request a public hearing on the proposed variance and schedule.

(c) Requests for hearing may be submitted by any interested person other than a Federal agency. Frivolous or insubstantial requests for hearing may be denied by the Administrator. Requests must be submitted to the Administrator within 30 days after issuance of the public notices provided for in paragraph (b) of this section. Such requests shall include the following information:

(1) The name, address and telephone number of the individual, organization or other entity requesting a hearing;

(2) A brief statement of the interest of the person making the request in the proposed variance and schedule, and of information that the requester intends to submit at such hearing;

(3) The signature of the individual making the request, or, if the request is made on behalf of an organization or other entity, the signature of a responsible official of the organization or other entity.

(d) The Administrator shall give notice in the manner set forth in paragraph (b) of this section of any hearing to be held pursuant to a request submitted by an interested person or on his own motion. Notice of the hearing shall also be sent to the persons requesting the hearing, if any. Notice of the hearing shall include a statement of the purpose of the hearing, information regarding the time and location for the hearing, and the address and telephone number of an office at which interested persons may obtain further information concerning the hearing. At least one hearing location specified in the public notice shall be within the involved State. Notice of hearing shall be given not less than 15 days prior to the time scheduled for the hearing.

(e) A hearing convened pursuant to paragraph (d) of this section shall be conducted before a hearing officer to be designated by the Administrator. The hearing shall be conducted by the hearing officer in an informal, orderly and expeditious manner. The hearing officer shall have authority to call witnesses, receive oral and written testimony and take such other action as may be necessary to assure the fair and efficient conduct of the hearing. Following the conclusion of the hearing, the hearing officer shall forward the record of the hearing to the Administrator.

(f) The variance and schedule shall become effective 30 days after notice of opportunity for hearing is given pursuant to paragraph (b) of this section if no timely request for hearing is submitted and the Administrator does not determine to hold a public hearing on his own motion.

[41 FR 2918, Jan. 20, 1976, as amended at 52 FR 20675, June 2, 1987]

§142.45 Action after hearing.

Within 30 days after the termination of the public hearing held pursuant to §142.44, the Administrator shall, taking into consideration information obtained during such hearing and relevant information, confirm, revise or rescind the proposed variance and schedule.

[52 FR 20675, June 2, 1987]

§142.46 Alternative treatment techniques.

The Administrator may grant a variance from any treatment technique requirement of a national primary drinking water regulation to a supplier of water, whether or not the public water system for which the variance is requested is located in a State which has primary enforcement responsibility, upon a showing from any person that an alternative treatment technique not included in such requirement is at least as efficient in lowering the level of the contaminant with respect to which such requirements was prescribed. A variance under this paragraph shall be conditioned on the use of the alternative treatment technique which is the basis of the variance.

Subpart F—Exemptions Issued by the Administrator

§142.50 Requirements for an exemption.

(a) The Administrator may exempt any public water system within a State that does not have primary enforcement responsibility from any requirement regarding a maximum contaminant level or any treatment technique requirement, or from both, of an applicable national primary drinking water regulation upon a finding that—

(1) Due to compelling factors (which may include economic factors, including qualification of the public water system as a system serving a disadvantaged community pursuant to section 1452(d) of the Act), the public water system is unable to comply with such contaminant level or treatment technique requirement or to implement measures to develop an alternative source of water supply;

(2) The public water system was in operation on the effective date of such contaminant level or treatment technique requirement, or for a public water system that was not in operation by that date, no reasonable alternative source of drinking water is available to such new public water system;

(3) The granting of the exemption will not result in an unreasonable risk to health; and

(4) Management or restructuring changes (or both), as provided in §142.20(b)(1)(i), cannot reasonably be made that will result in compliance with the applicable national primary drinking water regulation or, if compliance cannot be achieved, improve the quality of the drinking water.

(b) No exemption shall be granted unless the public water system establishes that the public water system is taking all practicable steps to meet the standard; and

(1) The public water system cannot meet the standard without capital improvements which cannot be completed prior to the date established pursuant to Section 1412(b)(10) of the Act;

(2) In the case of a public water system which needs financial assistance for the necessary improvements, the public water system has entered into an agreement to obtain such financial assistance or assistance pursuant to Section 1452 of the Act, or any other Federal or State program that is reasonably likely to be available within the period of the exemption; or

(3) The public water system has entered into an enforceable agreement to become a part of a regional public water system.

(c) A public water system may not receive an exemption under this subpart if the public water system was granted a variance under Section 1415(e) of the Act.

[63 FR 43847, Aug. 14, 1998]

§142.51 Exemption request.

A supplier of water may request the granting of an exemption pursuant to this subpart for a public water system within a State that does not have primary enforcement responsibility by submitting a request for exemption in writing to the Administrator. Suppliers of water may submit a joint request for exemptions when they seek similar exemptions under similar circumstances. Any written request for an exemption or exemptions shall include the following information:

(a) The nature and duration of exemption requested.

(b) Relevant analytical results of water quality sampling of the system, including results of relevant tests conducted pursuant to the requirements of the national primary drinking water regulations.

(c) Explanation of the compelling factors such as time or economic factors which prevent such system from achieving compliance.

(d) Other information, if any, believed by the applicant to be pertinent to the application.

(e) A proposed compliance schedule, including the date when each step toward compliance will be achieved.

(f) Such other information as the Administrator may require.

§142.52 Consideration of an exemption request.

(a) The Administrator shall act on any exemption request submitted pursuant to §142.51 within 90 days of receipt of the request.

(b) In his consideration of whether the public water system is unable to comply due to compelling factors, the Administrator shall consider such factors as the following:

(1) Construction, installation, or modification of the treatment equipment or systems.

(2) The time needed to put into operation a new treatment facility to replace an existing system which is not in compliance.

(3) Economic feasibility of compliance.

§142.53 Disposition of an exemption request.

(a) If the Administrator decides to deny the application for an exemption, he shall notify the applicant of his intention to issue a denial. Such notice shall include a statement of reasons for the proposed denial, and shall offer the applicant an opportunity to present, within 30 days of receipt of the notice, additional information or argument to the Administrator. The Administrator shall make a final determination on the request within 30 days after receiving any such additional information or argument. If no additional information or argument is submitted by the applicant, the application shall be denied.

(b) If the Administrator grants an exemption request submitted pursuant to §142.51, he shall notify the applicant of his decision in writing. Such notice shall identify the facility covered, and shall specify the termination date of the exemption. Such notice shall provide that the exemption will be terminated when the system comes into compliance with the applicable regulation, and may be terminated upon a finding by the Administrator that the system has failed to comply with any requirements of a final schedule issued pursuant to §142.55.

(c) The Administrator shall propose a schedule for:

(1) Compliance (including increments of progress or measures to develop an alternative source of water supply) by the public water system with each contaminant level requirement or treatment technique requirement with respect to which the exemption was granted; and

(2) Implementation by the public water system of such control measures as the Administrator may require for each contaminant covered by the exemption.

(d) The schedule shall be prescribed by the Administrator at the time the exemption is granted, subsequent to provision of opportunity for hearing pursuant to §142.54.

[41 FR 2918, Jan. 20, 1976, as amended at 52 FR 20675, June 2, 1987; 63 FR 43848, Aug. 14, 1998]

§142.54 Public hearings on exemption schedules.

(a) Before a schedule proposed by the Administrator pursuant to §142.53 may take effect, the Administrator shall provide notice and opportunity for public hearing on the schedule. A notice given pursuant to the preceding sentence may cover the proposal of more than one such schedule and a hearing held pursuant to such notice shall include each of the schedules covered by the notice.

(b) Public notice of an opportunity for hearing on an exemption schedule shall be circulated in a manner designed to inform interested and potentially interested persons of the proposed schedule, and shall include at least the following:

(1) Posting of a notice in the principal post office of each municipality or area served by the public water system, and publishing of a notice in a newspaper or newspapers of general circulation in the area served by the public water system.

(2) Mailing of a notice to the agency of the State in which the system is located which is responsible for the State's water supply program and to other appropriate State or local agencies at the Administrator's discretion.

(3) Such notices shall include a summary of the proposed schedule and shall inform interested persons that they may request a public hearing on the proposed schedule.

(c) Requests for hearing may be submitted by any interested person other than a Federal agency. Frivolous or insubstantial requests for hearing may be denied by the Administrator. Requests must be submitted to the Administrator within 30 days after issuance of the public notices provided for in paragraph (b) of this section. Such requests shall include the following information:

(1) The name, address and telephone number of the individual, organization or other entity requesting a hearing;

(2) A brief statement of the interest of the person making the request in the proposed schedule and of information that the requesting person intends to submit at such hearing; and

(3) The signature of the individual making the request, or, if the request is made on behalf of an organization or other entity, the signature of a responsible official of the organization or other entity.

(d) The Administrator shall give notice in the manner set forth in paragraph (b) of this section of any hearing to be held pursuant to a request submitted by an interested person or on his own motion. Notice of the hearing shall also be sent to the person requesting the hearing, if any. Notice of the hearing shall include a statement of the purpose of the hearing, information regarding the time and location of the hearing, and the address and telephone number of an office at which interested persons may obtain further information concerning the hearing. At least one hearing location specified in the public notice shall be within the involved State. Notice of the hearing shall be given not less than 15 days prior to the time scheduled for the hearing.

(e) A hearing convened pursuant to paragraph (d) of this section shall be conducted before a hearing officer to be designated by the Administrator. The hearing shall be conducted by the hearing officer in an informal, orderly and expeditious manner. The hearing officer shall have authority to call witnesses, receive oral and written testimony and take such action as may be necessary to assure the fair and efficient conduct of the hearing. Following the conclusion of the hearing, the hearing officer shall forward the record of the hearing to the Administrator.

[41 FR 2918, Jan. 20, 1976, as amended at 52 FR 20675, June 2, 1987]

§142.55 Final schedule.

(a) Within 30 days after the termination of the public hearing pursuant to §142.54, the Administrator shall, taking into consideration information obtained during such hearing, revise the proposed schedule as necessary and prescribe the final schedule for compliance and interim measures for the public water system granted an exemption under §142.52.

(b) Such schedule must require compliance with each contaminant level and treatment technique requirement with respect to which the exemption was granted as expeditiously as practicable but not later than 3 years after the otherwise applicable compliance date established in section 1412(b)(10) of the Act.

(c) [Reserved]

[41 FR 2918, Jan. 20, 1976, as amended at 52 FR 20675, June 2, 1987; 63 FR 43848, Aug. 14, 1998]

§142.56 Extension of date for compliance.

In the case of a public water system which serves a population of not more than 3,300 persons and which needs financial assistance for the necessary improvements, an exemption granted under §142.50(b) (1) or (2) may be renewed for one or more additional 2-year periods, but not to exceed a total of 6 additional years, if the public water system establishes that the public water system is taking all practicable steps to meet the requirements of section 1416(b)(2)(B) of the Act and the established compliance schedule.

[63 FR 43848, Aug. 14, 1998]

§142.57 Bottled water, point-of-use, and point-of-entry devices.

(a) A State may require a public water system to use bottled water, point-of-use devices, or point-of-entry devices as a condition of granting an exemption from the requirements of §§141.61 (a) and (c), and 141.62 of this chapter.

(b) Public water systems using bottled water as a condition of obtaining an exemption from the requirements of §§141.61 (a) and (c) and 141.62(b) must meet the requirements in §142.62(g).

(c) Public water systems that use point-of-use or point-of-entry devices as a condition for receiving an exemption must meet the requirements in §141.62(h).

[56 FR 3596, Jan. 30, 1991, as amended at 56 FR 30280, July 1, 1991]

Subpart G—Identification of Best Technology, Treatment Techniques or Other Means Generally Available

§142.60 Variances from the maximum contaminant level for total trihalomethanes.

(a) The Administrator, pursuant to section 1415(a)(1)(A) of the Act, hereby identifies the following as the best technology, treatment techiques or other means generally available for achieving compliance with the maximum contaminant level for total trihalomethanes (§141.12(c)):

(1) Use of chloramines as an alternate or supplemental disinfectant or oxidant.

(2) Use of chlorine dioxide as an alternate or supplemental disinfectant or oxidant.

(3) Improved existing clarification for THM precursor reduction.

(4) Moving the point of chlorination to reduce TTHM formation and, where necessary, substituting for the use of chlorine as a pre-oxidant chloramines, chlorine dioxide or potassium permanganate.

(5) Use of powdered activated carbon for THM precursor or TTHM reduction seasonally or intermittently at dosages not to exceed 10 mg/L on an annual average basis.

(b) The Administrator in a state that does not have primary enforcement responsibility or a state with primary enforcement responsibility (primacy state) that issues variances shall require a community water system to install and/or use any treatment method identified in §142.60(a) as a condition for granting a variance unless the Administrator or primacy state determines that such treatment method identified in §142.60(a) is not available and effective for TTHM control for the system. A treatment method shall not be considered to be ''available and effective'' for an individual system if the treatment method would not be technically appropriate and technically feasible for that system or would only result in a marginal reduction in TTHM for the system. If, upon application by a system for a variance, the Administrator or primacy state that issues variances determines that none of the treatment methods identified in §142.60(a) is available and effective for the system, that system shall be entitled to a variance under the provisions of section 1415(a)(1)(A) of the Act. The Administrator's or primacy state's determination as to the availability and effectiveness of such treatment methods shall be based upon studies by the system and other relevant information. If a system submits information intending to demonstrate that a treatment method is not available and effective for TTHM control for that system, the Administrator or primacy state shall make a finding whether this information supports a decision that such treatment method is not available and effective for that system before requiring installation and/or use of such treatment method.

(c) Pursuant to §142.43 (c) through (g) or corresponding state regulations, the Administrator or primacy state that issues variances shall issue a schedule of compliance that may require the system being granted the variance to examine the following treatment methods (1) to determine the probability that any of these methods will significantly reduce the level of TTHM for that system, and (2) if such probability exists, to determine whether any of these methods are technically feasible and economically reasonable, and that the TTHM reductions obtained will be commensurate with the costs incurred with the installation and use of such treatment methods for that system:

Introduction of off-line water storage for THM precursor reduction.

Aeration for TTHM reduction, where geographically and environmentally appropriate.

Introduction of clarification where not currently practiced.

Consideration of alternative sources of raw water.

Use of ozone as an alternate or supplemental disinfectant or oxidant.

(d) If the Administrator or primacy state that issues variances determines that a treatment method identified in §142.60(c) is technically feasible, economically reasonable and will achieve TTHM reductions commensurate with the costs incurred with the installation and/or use of such treatment method for the system, the Administrator or primacy state shall require the system to install and/or use that treatment method in connection with a compliance schedule issued under the provisions of section 1415(a)(1)(A) of the Act. The Administrator's or primacy state's determination shall be based upon studies by the system and other relevant information. In no event shall the Administrator require a system to install and/or use a treatment method not described in §142.60 (a) or (c) to obtain or maintain a variance from the TTHM Rule or in connection with any variance compliance schedule.

[48 FR 8414, Feb. 28, 1983]

§142.61 Variances from the maximum contaminant level for fluoride.

(a) The Administrator, pursuant to section 1415(a)(1)(A) of the Act, hereby identifies the following as the best technology, treatment techniques or other means generally available for achieving compliance with the Maximum Contaminant Level for fluoride.

(1) Activated alumina absorption, centrally applied

(2) Reverse osmosis, centrally applied

(b) The Administrator in a state that does not have primary enforcement responsibility or a state with primary enforcement responsibility (primacy state) that issues variances shall require a community water system to install and/or use any treatment method identified in §142.61(a) as a condition for granting a variance unless the Administrator or the primacy state determines that such treatment method identified in §142.61(a) as a condition for granting a variance is not available and effective for fluoride control for the system. A treatment method shall not be considered to be ''available and effective'' for an individual system if the treatment method would not be technically appropriate and technically feasible for that system. If, upon application by a system for a variance, the Administrator or primacy state that issues variances determines that none of the treatment methods identified in §142.61(a) are available and effective for the system, that system shall be entitled to a variance under the provisions of section

1415(a)(1)(A) of the Act. The Administrator's or primacy state's determination as to the availability and effectiveness of such treatment methods shall be based upon studies by the system and other relevant information. If a system submits information to demonstrate that a treatment method is not available and effective for fluoride control for that system, the Administrator or primacy state shall make a finding whether this information supports a decision that such treatment method is not available and effective for that system before requiring installation and/or use of such treatment method.

(c) Pursuant to §142.43 (c)–(g) or corresponding state regulations, the Administrator or primacy state that issues variances shall issue a schedule of compliance that may require the system being granted the variance to examine the following treatment methods (1) to determine the probability that any of these methods will significantly reduce the level of fluoride for that system, and (2) if such probability exists, to determine whether any of these methods are technically feasible and economically reasonable, and that the fluoride reductions obtained will be commensurate with the costs incurred with the installation and use of such treatment methods for that system:

(1) Modification of lime softening;
(2) Alum coagulation;
(3) Electrodialysis;
(4) Anion exchange resins;
(5) Well field management;
(6) Alternate source;
(7) Regionalization.

(d) If the Administrator or primary state that issues variances determines that a treatment method identified in §142.61(c) or other treatment method is technically feasible, economically reasonable, and will achieve fluoride reductions commensurate with the costs incurred with the installation and/or use of such treatment method for the system, the Administrator or primacy state shall require the system to install and/or use that treatment method in connection with a compliance schedule issued under the provisions of section 1415(a)(1)(A) of the Act. The Administrator's or primacy state's determination shall be based upon studies by the system and other relevant information.

[51 FR 11411, Apr. 2, 1986]

§142.62 Variances and exemptions from the maximum contaminant levels for organic and inorganic chemicals.

(a) The Administrator, pursuant to section 1415(a)(1)(A) of the Act hereby identifies the technologies listed in paragraphs (a)(1) through (a)(54) of this section as the best technology, treatment techniques, or other means available for achieving compliance with the maximum contaminant levels for organic chemicals listed in §141.61 (a) and (c):

Contaminant	Best available technologies		
	PTA[1]	GAC[2]	OX[3]
(1) Benzene	X	X	
(2) Carbon tetrachloride	X	X	
(3) 1,2-Dichloroethane	X	X	
(4) Trichloroethylene	X	X	
(5) para-Dichlorobenzene	X	X	
(6) 1,1-Dichloroethylene	X	X	
(7) 1,1,1-Trichloroethane	X	X	
(8) Vinyl chloride	X		
(9) cis-1,2-Dichloroethylene	X	X	
(10) 1,2-Dichloropropane	X	X	
(11) Ethylbenzene	X	X	
(12) Monochlorobenzene	X	X	
(13) o-Dichlorobenzene	X	X	
(14) Styrene	X	X	
(15) Tetrachloroethylene	X	X	
(16) Toluene	X	X	
(17) trans-1,2-Dichloroethylene	X	X	
(18) Xylense (total)	X	X	
(19) Alachlor		X	
(20) Aldicarb		X	
(21) Aldicarb sulfoxide		X	
(22) Aldicarb sulfone		X	

Contaminant	Best available technologies		
	PTA[1]	GAC[2]	OX[3]
(23) Atrazine		X	
(24) Carbofuran		X	
(25) Chlordane		X	
(26) Dibromochloropropane	X	X	
(27) 2,4-D		X	
(28) Ethylene dibromide	X	X	
(29) Heptachlor		X	
(30) Heptachlor epoxide		X	
(31) Lindane		X	
(32) Methoxychlor		X	
(33) PCBs		X	
(34) Pentachlorophenol		X	
(35) Toxaphene		X	
(36) 2,4,5-TP		X	
(37) Benzo[a]pyrene		X	
(38) Dalapon		X	
(39) Dichloromethane	X		
(40) Di(2-ethylhexyl)adipate	X	X	
(41) Di(2-ethylhexyl)phthalate		X	
(42) Dinoseb		X	
(43) Diquat		X	
(44) Endothall		X	
(45) Endrin		X	
(46) Glyphosate			X
(47) Hexachlorobenzene		X	
(48) Hexachlorocyclopentadiene	X	X	
(49) Oxamyl (Vydate)		X	
(50) Picloram		X	
(51) Simazine		X	
(52) 1,2,4-Trichlorobenzene	X	X	
(53) 1,1,2-Trichloroethane	X	X	
(54) 2,3,7,8-TCDD(Dioxin)		X	

[1] Packed Tower Aeration
[2] Granular Activated Carbon
[3] Oxidation (Chlorination or Ozonation)

(b) The Administrator, pursuant to section 1415(a)(1)(A) of the Act, hereby identifies the following as the best technology, treatment techniques, or other means available for achieving compliance with the maximum contaminant levels for the inorganic chemicals listed in §141.62:

BAT FOR INORGANIC COMPOUNDS LISTED IN §141.62(b)

Chemical name	BAT(s)
Antimony	2,7
Arsenic[4]	[5]1, 2, 5, 6, 7, 9, 12
Asbestos	2,3,8
Barium	5,6,7,9
Beryllium	1,2,5,6,7
Cadmium	2,5,6,7
Chromium	2,5,6[2],7
Cyanide	5,7,10
Mercury	2[1],4,6[1],7[1]
Nickel	5,6,7
Nitrite	5,7,9
Nitrate	5,7
Selenium	1,2[3],6,7,9
Thallium	1,5

[1] BAT only if influent Hg concentrations ≤10μg/1.
[2] BAT for Chromium III only.
[3] BAT for Selenium IV only.
[4] BATs for Arsenic V. Pre-oxidation may be required to convert Arsenic III to Arsenic V.
[5] To obtain high removals, iron to arsenic ratio must be at least 20:1.

Key to BATS in Table

1 = Activated Alumina
2 = Coagulation/Filtration (not BAT for systems <500 service connections)
3 = Direct and Diatomite Filtration
4 = Granular Activated Carbon
5 = Ion Exchange
6 = Lime Softening (not BAT for systems <500 service connections)
7 = Reverse Osmosis
8 = Corrosion Control
9 = Electrodialysis
10 = Chlorine
11 = Ultraviolet
12 = Oxidation/Filtration

(c) A State shall require community water systems and non-transient, non-community water systems to install and/or use any treatment method identified in §142.62 (a) and (b) as a condition for granting a variance except as provided in paragraph (d) of this section. If, after the system's installation of the treatment method, the system cannot meet the MCL, that system shall be eligible for a variance under the provisions of section 1415(a)(1)(A) of the Act.

(d) If a system can demonstrate through comprehensive engineering assessments, which may include pilot plant studies, that the treament methods identified in §142.62 (a) and (b) would only achieve a *de minimis* reduction in contaminants, the State may issue a schedule of compliance that requires the system being granted the variance to examine other treatment methods as a condition of obtaining the variance.

(e) If the State determines that a treatment method identified in paragraph (d) of this section is technically feasible, the Administrator or primacy State may require the system to install and/or use that treatment method in connection with a compliance schedule issued under the provisions of section 1415(a)(1)(A) of the Act. The State's determination shall be based upon studies by the system and other relevant information.

(f) The State may require a public water system to use bottled water, point-of-usedevices, point-of-entrydevices or other means as a condition of granting a variance or an exemption from the requirements of §§141.61 (a) and (c) and 141.62, to avoid an unreasonable risk to health. The State may require a public water system to use bottled water and point-of-usedevices or other means, *but not point-of-entry devices,* as a condition for granting an exemption from corrosion control treatment requirements for lead and copper in §§141.81 and 141.82 to avoid an unreasonable risk to health. The State may require a public water system to use point-of-entrydevices as a condition for granting an exemption from the source water and lead service line replacement requirements for lead and copper under §§141.83 or 141.84 to avoid an unreasonable risk to health.

(g) Public water systems that use bottled water as a condition for receiving a variance or an exemption from the requirements of §§141.61 (a) and (c) and 141.62, or an exemption from the requirements of §§141.81–141.84 must meet the requirements specified in either paragraph (g)(1) or (g)(2) and paragraph (g)(3) of this section:

(1) The Administrator or primacy State must require and approve a monitoring program for bottled water. The public water system must develop and put in place a monitoring program that provides reasonable assurances that the bottled water meets all MCLs. The public water system must monitor a representative sample of the bottled water for all contaminants regulated under §§141.61 (a) and (c) and 141.62 during the first three-monthperiod that it supplies the bottled water to the public, and annually thereafter. Results of the monitoring program shall be provided to the State annually.

(2) The public water system must receive a certification from the bottled water company that the bottled water supplied has been taken from an ''approved source'' as defined in 21 CFR 129.3(a); the bottled water company has conducted monitoring in accordance with 21 CFR 129.80(g) (1) through (3); and the bottled water does not exceed any MCLs or quality limits as set out in 21 CFR 165.110, part 110, and part 129. The public water system shall provide the certification to the State the first quarter after it supplies bottled water and annually thereafter. At the State's option a public water system may satisfy the requirements of this subsection if an approved monitoring program is already in place in another State.

(3) The public water system is fully responsible for the provision of sufficient quantities of bottled water to every person supplied by the public water system via door-to-doorbottled water delivery.

(h) Public water systems that use point-of-use or point-of-entry devices as a condition for obtaining a variance or an exemption from NPDWRs must meet the following requirements:

(1) It is the responsibility of the public water system to operate and maintain the point-of-use and/or point-of-entry treatment system.

(2) Before point-of-use or point-of-entry devices are installed, the public water system must obtain the approval of a monitoring plan which ensures

that the devices provide health protection equivalent to that provided by central water treatment.

(3) The public water system must apply effective technology under a State-approved plan. The microbiological safety of the water must be maintained at all times.

(4) The State must require adequate certification of performance, field testing, and, if not included in the certification process, a rigorous engineering design review of the point-of-use and/or point-of-entry devices.

(5) The design and application of the point-of-use and/or point-of-entry devices must consider the potential for increasing concentrations of heterotrophic bacteria in water treated with activated carbon. It may be necessary to use frequent backwashing, post-contactor disinfection, and Heterotrophic Plate Count monitoring to ensure that the microbiological safety of the water is not compromised.

(6) The State must be assured that buildings connected to the system have sufficient point-of-use or point-of-entry devices that are properly installed, maintained, and monitored such that all consumers will be protected.

(7) In requiring the use of a point-of-entry device as a condition for granting an exemption from the treatment requirements for lead and copper under §§141.83 or 141.84, the State must be assured that use of the device will not cause increased corrosion of lead and copper bearing materials located between the device and the tap that could increase contaminant levels at the tap.

[56 FR 3596, Jan. 30, 1991, as amended at 56 FR 26563, June 7, 1991; 57 FR 31848, July 17, 1992; 59 FR 33864, June 30, 1994; 59 FR 34325, July 1, 1994; 66 FR 7066, Jan. 22, 2001; 69 FR 38857, June 29, 2004]

§142.63 Variances and exemptions from the maximum contaminant level for total coliforms.

(a) No variances or exemptions from the maximum contaminant level in §141.63 of this chapter are permitted.

(b) EPA has stayed this section as it relates to the total coliform MCL of §141.63(a) of this chapter for systems that demonstrate to the State that the violation of the total coliform MCL is due to a persistent growth of total coliforms in the distribution system rather than fecal or pathogenic contamination, a treatment lapse or deficiency, or a problem in the operation or maintenance of the distribution system. This stay is applicable until March 31, 2016, at which time the total coliform MCL is no longer applicable.

[54 FR 27568, June 29, 1989, as amended at 56 FR 1557, Jan. 15, 1991; 78 FR 10365, Feb. 13, 2013]

§142.64 Variances and exemptions from the requirements of part 141, subpart H—Filtration and Disinfection.

(a) No variances from the requirements in part 141, subpart H are permitted.

(b) No exemptions from the requirements in §141.72 (a)(3) and (b)(2) to provide disinfection are permitted.

[54 FR 27540, June 29, 1989]

§142.65 Variances and exemptions from the maximum contaminant levels for radionuclides.

(a)(1) Variances and exemptions from the maximum contaminant levels for combined radium-226 and radium-228, uranium, gross alpha particle activity (excluding Radon and Uranium), and beta particle and photon radioactivity.

(i) The Administrator, pursuant to section 1415(a)(1)(A) of the Act, hereby identifies the following as the best available technology, treatment techniques, or other means available for achieving compliance with the maximum contaminant levels for the radionuclides listed in §141.66(b), (c), (d), and (e) of this chapter, for the purposes of issuing variances and exemptions, as shown in Table A to this paragraph.

TABLE A—BAT FOR RADIONUCLIDES LISTED IN §141.66

Contaminant	BAT
Combined radium-226 and radium-228.	Ion exchange, reverse osmosis, lime softening.
Uranium	Ion exchange, reverse osmosis, lime softening, coagulation/filtration.
Gross alpha particle activity (excluding radon and uranium).	Reverse osmosis.
Beta particle and photon radioactivity.	Ion exchange, reverse osmosis.

(ii) In addition, the Administrator hereby identifies the following as the best available technology, treatment techniques, or other means available for achieving compliance with the maximum contaminant levels for the radionuclides listed in §141.66(b), (c), (d), and (e) of this chapter, for the purposes of issuing variances and exemptions to small drinking water systems, defined here as those serving 10,000 persons or fewer, as shown in Table C to this paragraph.

TABLE B—LIST OF SMALL SYSTEMS COMPLIANCE TECHNOLOGIES FOR RADIONUCLIDES AND LIMITATIONS TO USE

Unit technologies	Limitations (see footnotes)	Operator skill level required [1]	Raw water quality range & considerations [1]
1. Ion exchange (IE)	(a)	Intermediate	All ground waters.
2. Point of use (POU [2]) IE	(b)	Basic	All ground waters.
3. Reverse osmosis (RO)	(c)	Advanced	Surface waters usually require pre-filtration.
4. POU [2] RO	(b)	Basic	Surface waters usually require pre-filtration.
5. Lime softening	(d)	Advanced	All waters.
6. Green sand filtration	(e)	Basic.	
7. Co-precipitation with barium sulfate	(f)	Intermediate to Advanced	Ground waters with suitable water quality.
8. Electrodialysis/electrodialysis reversal		Basic to Intermediate	All ground waters.
9. Pre-formed hydrous manganese oxide filtration.	(g)	Intermediate	All ground waters.
10. Activated alumina	(a), (h)	Advanced	All ground waters; competing anion concentrations may affect regeneration frequency.
11. Enhanced coagulation/filtration	(i)	Advanced	Can treat a wide range of water qualities.

[1] National Research Council (NRC). Safe Water from Every Tap: Improving Water Service to Small Communities. National Academy Press. Washington, D.C. 1997.

[2] A POU, or "point-of-use" technology is a treatment device installed at a single tap used for the purpose of reducing contaminants in drinking water at that one tap. POU devices are typically installed at the kitchen tap. See the April 21, 2000 NODA for more details.

Limitations Footnotes: Technologies for Radionuclides:

[a] The regeneration solution contains high concentrations of the contaminant ions. Disposal options should be carefully considered before choosing this technology.

[b] When POU devices are used for compliance, programs for long-term operation, maintenance, and monitoring must be provided by water utility to ensure proper performance.

[c] Reject water disposal options should be carefully considered before choosing this technology. See other RO limitations described in the SWTR compliance technologies table.

[d] The combination of variable source water quality and the complexity of the water chemistry involved may make this technology too complex for small surface water systems.

[e] Removal efficiencies can vary depending on water quality.

[f] This technology may be very limited in application to small systems. Since the process requires static mixing, detention basins, and filtration, it is most applicable to systems with sufficiently high sulfate levels that already have a suitable filtration treatment train in place.

[g] This technology is most applicable to small systems that already have filtration in place.

[h] Handling of chemicals required during regeneration and pH adjustment may be too difficult for small systems without an adequately trained operator.

[i] Assumes modification to a coagulation/filtration process already in place.

TABLE C—BAT FOR SMALL COMMUNITY WATER SYSTEMS FOR THE RADIONUCLIDES LISTED IN §141.66

Contaminant	Compliance technologies [1] for system size categories (population served)		
	25–500	501–3,300	3,300–10,000
Combined radium-226 and radium-228	1, 2, 3, 4, 5, 6, 7, 8, 9	1, 2, 3, 4, 5, 6, 7, 8, 9	1, 2, 3, 4, 5, 6, 7, 8, 9.
Gross alpha particle activity	3, 4	3, 4	3, 4.
Beta particle activity and photon activity	1, 2, 3, 4	1, 2, 3, 4	1, 2, 3, 4.
Uranium	1, 2, 4, 10, 11	1, 2, 3, 4, 5, 10, 11	1, 2, 3, 4, 5, 10, 11.

[1] NOTE: Numbers correspond to those technologies found listed in the table B to this paragraph.

(2) A State shall require community water systems to install and/or use any treatment technology identified in Table A to this section, or in the case of small water systems (those serving 10,000 persons or fewer), Table B and

Table C of this section, as a condition for granting a variance except as provided in paragraph (a)(3) of this section. If, after the system's installation of the treatment technology, the system cannot meet the MCL, that system shall be eligible for a variance under the provisions of section 1415(a)(1)(A) of the Act.

(3) If a community water system can demonstrate through comprehensive engineering assessments, which may include pilot plant studies, that the treatment technologies identified in this section would only achieve a *de minimus* reduction in the contaminant level, the State may issue a schedule of compliance that requires the system being granted the variance to examine other treatment technologies as a condition of obtaining the variance.

(4) If the State determines that a treatment technology identified under paragraph (a)(3) of this section is technically feasible, the Administrator or primacy State may require the system to install and/or use that treatment technology in connection with a compliance schedule issued under the provisions of section 1415(a)(1)(A) of the Act. The State's determination shall be based upon studies by the system and other relevant information.

(5) The State may require a community water system to use bottled water, point-of-usedevices, point-of-entrydevices or other means as a condition of granting a variance or an exemption from the requirements of §141.66 of this chapter, to avoid an unreasonable risk to health.

(6) Community water systems that use bottled water as a condition for receiving a variance or an exemption from the requirements of §141.66 of this chapter must meet the requirements specified in either §142.62(g)(1) or §142.62(g)(2) and (g)(3).

(7) Community water systems that use point-of-useor point-of-entry devices as a condition for obtaining a variance or an exemption from the radionuclides NPDWRs must meet the conditions in §142.62(h)(1) through (h)(6).

(b) [Reserved]

[65 FR 76751, Dec. 7, 2000]

Subpart H—Indian Tribes

SOURCE: 53 FR 37411, Sept. 26, 1988, unless otherwise noted.

§142.72 Requirements for Tribal eligibility.

The Administrator is authorized to treat an Indian tribe as eligible to apply for primary enforcement for the Public Water System Program and the authority to waive the mailing requirements of §141.155(a) if it meets the following criteria:

(a) The Indian Tribe is recognized by the Secretary of the Interior.

(b) The Indian Tribe has a tribal governing body which is currently "carrying out substantial governmental duties and powers" over a defined area, (*i.e.*, is currently performing governmental functions to promote the health, safety, and welfare of the affected population within a defined geographic area).

(c) The Indian Tribe demonstrates that the functions to be performed in regulating the public water systems that the applicant intends to regulate are within the area of the Indian Tribal government's jurisdiction.

(d) The Indian Tribe is reasonably expected to be capable, in the Administrator's judgment, of administering (in a manner consistent with the terms and purposes of the Act and all applicable regulations) an effective Public Water System program.

[53 FR 37411, Sept. 26, 1988, as amended at 59 FR 64344, Dec. 14, 1994; 63 FR 44535, Aug. 19, 1998]

§142.76 Request by an Indian Tribe for a determination of eligibility.

An Indian Tribe may apply to the Administrator for a determination that it meets the criteria of section 1451 of the Act. The application shall be concise and describe how the Indian Tribe will meet each of the requirements of §142.72. The application shall consist of the following information:

(a) A statement that the Tribe is recognized by the Secretary of the Interior.

(b) A descriptive statement demonstrating that the Tribal governing body is currently carrying out substantial governmental duties and powers over a defined area. The statement should:

(1) Describe the form of the Tribal government;

(2) Describe the types of governmental functions currently performed by the Tribal governing body such as, but not limited to, the exercise of police powers affecting (or relating to) the health, safety, and welfare of the affected population; taxation; and the exercise of the power of eminent domain; and

(3) Identify the sources of the Tribal government's authority to carry out the governmental functions currently being performed.

(c) A map or legal description of the area over which the Indian Tribe asserts jurisdiction; a statement by the Tribal Attorney General (or equivalent official) which describes the basis for the Tribe's jurisdictional assertion (including the nature or subject matter of the asserted jurisdiction); a copy of those documents such as Tribal constitutions, by-laws, charters, executive orders, codes, ordinances, and/or resolutions which the Tribe believes are relevant to its assertions regarding jurisdiction; and a description of the locations of the public water systems the Tribe proposes to regulate.

(d) A narrative statement describing the capability of the Indian Tribe to administer an effective Public Water System program. The narrative statement should include:

(1) A description of the Indian Tribe's previous management experience which may include, the administration of programs and services authorized by the Indian Self-Determination and Education Assistance Act (25 U.S.C. 450 *et seq.*), the Indian Mineral Development Act (25 U.S.C. 2101 *et seq.*), or the Indian Sanitation Facilities Construction Activity Act (42 U.S.C. 2004a).

(2) A list of existing environmental or public health programs administered by the Tribal governing body and a copy of related Tribal laws, regulations and policies.

(3) A description of the Indian Tribe's accounting and procurement systems.

(4) A description of the entity (or entities) which exercise the executive, legislative, and judicial functions of the Tribal government.

(5) A description of the existing, or proposed, agency of the Indian Tribe which will assume primary enforcement responsibility, including a description of the relationship between owners/operators of the public water systems and the agency.

(6) A description of the technical and administrative capabilities of the staff to administer and manage an effective Public Water System Program or a plan which proposes how the Tribe will acquire additional administrative and/or technical expertise. The plan must address how the Tribe will obtain the funds to acquire the additional administrative and technical expertise.

(e) The Administrator may, in his discretion, request further documentation necessary to support a Tribe's eligibility.

(f) If the Administrator has previously determined that a Tribe has met the prerequisites that make it eligible to assume a role similar to that of a state as provided by statute under the Safe Drinking Water Act, the Clean Water Act, or the Clean Air Act, then that Tribe need provide only that information unique to the Public Water System program (paragraphs (c), (d)(5) and (6) of this section).

[53 FR 37411, Sept. 26, 1988, as amended at 59 FR 64344, Dec. 14, 1994]

§142.78 Procedure for processing an Indian Tribe's application.

(a) The Administrator shall process a completed application of an Indian Tribe in a timely manner. He shall promptly notify the Indian Tribe of receipt of the application.

(b) A tribe that meets the requirements of §141.72 of this chapter is eligible to apply for development grants and primacy enforcement responsibility for a Public Water System Program and associated funding under section 1443(a) of the Act and for primary enforcement responsibility for public water systems under section 1413 of the Act and for the authority to waive the mailing requirement of §141.155(a) of this chapter.

[53 FR 37411 Sept. 26, 1988, as amended at 59 FR 64345, Dec. 14, 1994; 63 FR 71376, Dec. 28, 1998]

Subpart I—Administrator's Review of State Decisions that Implement Criteria Under Which Filtration Is Required

SOURCE: 54 FR 27540, June 29, 1989, unless otherwise noted.

§142.80 Review procedures.

(a) The Administrator may initiate a comprehensive review of the decisions made by States with primary enforcement responsibility to determine, in accordance with §141.71 of this chapter, if public water systems using surface water sources must provide filtration treatment. The Administrator shall complete this review within one year of its initiation and shall schedule subsequent reviews as (s)he deems necessary.

(b) EPA shall publish notice of a proposed review in the FEDERAL REGISTER. Such notice must:

(1) Provide information regarding the location of data and other information pertaining to the review to be conducted and other information including new scientific matter bearing on the application of the criteria for avoiding filtration; and

(2) Advise the public of the opportunity to submit comments.

(c) Upon completion of any such review, the Administrator shall notify each State affected by the results of the review and shall make the results available to the public.

§142.81 Notice to the State.

(a) If the Administrator finds through periodic review or other available information that a State (1) has abused its discretion in applying the criteria for avoiding filtration under §141.71 of this chapter in determining that a system does not have to provide filtration treatment, or (2) has failed to prescribe compliance schedules for those systems which must provide filtration in accordance with section 1412(b)(7)(C)(ii) of the Act, (s)he shall notify the State of these findings. Such notice shall:

(1) Identify each public water system for which the Administrator finds the State has abused its discretion;

(2) Specify the reasons for the finding;

(3) As appropriate, propose that the criteria of §141.71 of this chapter be applied properly to determine the need for a public water system to provide filtration treatment or propose a revised schedule for compliance by the public water system with the filtration treatment requirements;

(b) The Administrator shall also notify the State that a public hearing is to be held on the provisions of the notice required by paragraph (a) of this section. Such notice shall specify the time and location of the hearing. If, upon notification of a finding by the Administrator that the State has abused its discretion under §141.71 of this chapter, the State takes corrective action satisfactory to the Administrator, the Administrator may rescind the notice to the State of a public hearing.

(c) The Administrator shall publish notice of the public hearing in the FEDERAL REGISTER and in a newspaper of general circulation in the involved State, including a summary of the findings made pursuant to paragraph (a) of this section, a statement of the time and location for the hearing, and the address and telephone number of an office at which interested persons may obtain further information concerning the hearing.

(d) Hearings convened pursuant to paragraphs (b) and (c) of this section shall be conducted before a hearing officer to be designated by the Administrator. The hearing shall be conducted by the hearing officer in an informal, orderly, and expeditious manner. The hearing officer shall have the authority to call witnesses, receive oral and written testimony, and take such other action as may be necessary to ensure the fair and efficient conduct of the hearing. Following the conclusion of the hearing, the hearing officer may make a recommendation to the Administrator based on the testimony presented at the hearing and shall forward any such recommendation and the record of the hearing to the Administrator.

(e) Within 180 days after the date notice is given pursuant to paragraph (b) of this section, the Administrator shall:

(1) Rescind the notice to the State of a public hearing if the State takes corrective action satisfactory to the Administrator; or

(2) Rescind the finding for which the notice was given and promptly notify the State of such rescission; or

(3) Uphold the finding for which the notice was given. In this event, the Administrator shall revoke the State's decision that filtration was not required or revoke the compliance schedule approved by the State, and promulgate, as appropriate, with any appropriate modifications, a revised filtration decision or compliance schedule and promptly notify the State of such action.

(f) Revocation of a State's filtration decision or compliance schedule and/or promulgation of a revised filtration decision or compliance schedule shall take effect 90 days after the State is notified under paragraph (e)(3) of this section.

Subpart J [Reserved]

Subpart K—Variances for Small System

SOURCE: 63 FR 43848, Aug. 14, 1998, unless otherwise noted.

GENERAL PROVISIONS

§142.301 What is a small system variance?

Section 1415(e) of the Act authorizes the issuance of variances from the requirement to comply with a maximum contaminant level or treatment technique to systems serving fewer than 10,000 persons. The purpose of this subpart is to provide the procedures and criteria for obtaining these variances. The regulations in this subpart shall take effect on September 14, 1998.

§142.302 Who can issue a small system variance?

A small system variance under this subpart may only be issued by either:

(a) A State that is exercising primary enforcement responsibility under Subpart B for public water systems under the State's jurisdiction; or

(b) The Administrator, for a public water system in a State which does not have primary enforcement responsibility.

§142.303 Which size public water systems can receive a small system variance?

(a) A State exercising primary enforcement responsibility for public water systems (or the Administrator for other systems) may grant a small system variance to public water systems serving 3,300 or fewer persons.

(b) With the approval of the Administrator pursuant to §142.312, a State exercising primary enforcement responsibility for public water systems may grant a small system variance to public water systems serving more than 3,300 persons but fewer than 10,000 persons.

(c) In determining the number of persons served by the public water system, the State or Administrator must include persons served by consecutive systems. A small system variance granted to a public water system would also apply to any consecutive system served by it.

§142.304 For which of the regulatory requirements is a small system variance available?

(a) A small system variance is not available under this subpart for a national primary drinking water regulation for a microbial contaminant (including a bacterium, virus, or other organism) or an indicator or treatment technique for a microbial contaminant.

(b) A small system variance under this subpart is otherwise only available for compliance with a requirement specifying a maximum contaminant level or treatment technique for a contaminant with respect to which;

(1) a national primary drinking water regulation was promulgated on or after January 1, 1986; and

(2) the Administrator has published a small system variance technology pursuant to Section 1412(b)(15) of the Act.

NOTE TO PARAGRAPH (b)(1): Small system variances are not available for public water systems above the pre-1986 maximum contaminant level even if subsequently revised. If the Agency revises a pre-1986 maximum contaminant level and makes it more stringent, then a variance would be available for that contaminant, but only up to the pre-1986 maximum contaminant level.

§142.305 When can a small system variance be granted by a State?

No small system variance can be granted by a State until the later of the following:

(a) 90 days after the State proposes to grant the small system variance;

(b) If a State is proposing to grant a small system variance to a public water system serving 3,300 or fewer persons and the Administrator objects to the small system variance, the date on which the State makes the recommended modifications or responds in writing to each objection; or

(c) If a State is proposing to grant a small system variance to a public water system serving a population more than 3,300 and fewer than 10,000 persons, the date the Administrator approves the small system variance. The Administrator must approve or disapprove the variance within 90 days after it is submitted to the Administrator for review.

REVIEW OF SMALL SYSTEM VARIANCE APPLICATION

§142.306 What are the responsibilities of the public water system, State and the Administrator in ensuring that sufficient information is available and for evaluation of a small system variance application?

(a) A public water system requesting a small system variance must provide accurate and correct information to the State or the Administrator to issue a small system variance in accordance with this subpart. A State may assist a public water system in compiling information required for the State or the Administrator to issue a small system variance in accordance with this subpart.

(b) Based upon an application for a small system variance and other information, and before a small system variance may be proposed under this subpart, the State or the Administrator must find and document the following:

(1) The public water system is eligible for a small system variance pursuant to §§142.303 (*i.e.*, the system serves a population of fewer than 10,000 persons) and 142.304 (*i.e.*, the contaminant for which the small system variance is sought is not excluded from variance eligibility);

(2) The public water system cannot afford to comply, in accordance with the affordability criteria established by the State (or by the Administrator in States which do not have primary enforcement responsibility), with the national primary drinking water regulation for which a small system variance is sought, including by:

(i) Treatment;

(ii) Alternative sources of water supply;

(iii) Restructuring or consolidation changes, including ownership change and/or physical consolidation with another public water system; or

(iv) Obtaining financial assistance pursuant to Section 1452 of the Act or any other Federal or State program;

(3) The public water system meets the source water quality requirements for installing the small system variance technology developed pursuant to guidance published under section 1412(b)(15) of the Act;

(4) The public water system is financially and technically capable of installing, operating and maintaining the applicable small system variance technology; and

(5) The terms and conditions of the small system variance, as developed through compliance with §142.307, ensure adequate protection of human health, considering the following:

(i) The quality of the source water for the public water system; and

(ii) Removal efficiencies and expected useful life of the small system variance technology.

§142.307 What terms and conditions must be included in a small system variance?

(a) A State or the Administrator must clearly specify enforceable terms and conditions of a small system variance.

(b) The terms and conditions of a small system variance issued under this subpart must include, at a minimum, the following requirements:

(1) Proper and effective installation, operation and maintenance of the applicable small system variance technology in accordance with guidance

published by the Administrator pursuant to section 1412(b)(15) of the Act, taking into consideration any relevant source water characteristics and any other site-specific conditions that may affect proper and effective operation and maintenance of the technology;

(2) Monitoring requirements, for the contaminant for which a small system variance is sought, as specified in 40 CFR part 141; and

(3) Any other terms or conditions that are necessary to ensure adequate protection of public health, which may include:

(i) Public education requirements; and

(ii) Source water protection requirements.

(c) The State or the Administrator must establish a schedule for the public water system to comply with the terms and conditions of the small system variance which must include, at a minimum, the following requirements:

(1) Increments of progress, such as milestone dates for the public water system to apply for financial assistance and begin capital improvements;

(2) Quarterly reporting to the State or Administrator of the public water system's compliance with the terms and conditions of the small system variance;

(3) Schedule for the State or the Administrator to review the small system variance under paragraph (d) of this section; and

(4) Compliance with the terms and conditions of the small system variance as soon as practicable but not later than 3 years after the date on which the small system variance is granted. The Administrator or State may allow up to 2 additional years if the Administrator or State determines that additional time is necessary for the public water system to:

(i) Complete necessary capital improvements to comply with the small system variance technology, secure an alternative source of water, or restructure or consolidate; or

(ii) Obtain financial assistance provided pursuant to section 1452 of the Act or any other Federal or State program.

(d) The State or the Administrator must review each small system variance granted not less often than every 5 years after the compliance date established in the small system variance to determine whether the public water system continues to meet the eligibility criteria and remains eligible for the small system variance and is complying with the terms and conditions of the small system variance. If the public water system would no longer be eligible for a small system variance, the State or the Administrator must determine whether continuing the variance is in the public interest. If the State or the Administrator finds that continuing the variance is not in the public interest, the variance must be withdrawn.

PUBLIC PARTICIPATION

§142.308 What public notice is required before a State or the Administrator proposes to issue a small system variance?

(a) At least fifteen (15) days before the date of proposal, and at least thirty (30) days prior to a public meeting to discuss the proposed small system variance, the State, Administrator, or public water system as directed by the State or Administrator, must provide notice to all persons served by the public water system. For billed customers, identified in paragraph (a)(1) of this section, this notice must include the information listed in paragraph (c) of this section. For other persons regularly served by the system, identified in paragraph (a)(2) of this section, the notice shall include the information identified in paragraph (d) of this section. Notice must be provided to all persons served by:

(1) Direct mail or other home delivery to billed customers or other service connections, and

(2) Any other method reasonably calculated to notify, in a brief and concise manner, other persons regularly served by the system. Such methods may include publication in a local newspaper, posting in public places or delivery to community organizations.

(b) At the time of proposal, the State must publish a notice in the State equivalent to the FEDERAL REGISTER or a newspaper or newspapers of wide circulation in the State, or, in the case of the Administrator, in the FEDERAL

REGISTER. This notice shall include the information listed in paragraph (c) of this section.

(c) The notice in paragraphs (a)(1) and (b) of this section must include, at a minimum, the following:

(1) Identification of the contaminant[s] for which a small system variance is sought;

(2) A brief statement of the health effects associated with the contaminant[s] for which a small system variance is sought using language in appendix C of part 141 subpart O of this chapter;

(3) The address and telephone number at which interested persons may obtain further information concerning the contaminant and the small system variance;

(4) A brief summary, in easily understandable terms, of the terms and conditions of the small system variance;

(5) A description of the consumer petition process under §142.310 and information on contacting the EPA Regional Office;

(6) a brief statement announcing the public meeting required under §142.309(a), including a statement of the purpose of the meeting, information regarding the time and location for the meeting, and the address and telephone number at which interested persons may obtain further information concerning the meeting; and

(7) In communities with a large proportion of non-English-speaking residents, as determined by the primacy agency, information in the appropriate language regarding the content and importance of the notice.

(d) The notice in paragraph (a)(2) of this section must provide sufficient information to alert readers to the proposed variance and direct them where to receive additional information.

(e) At its option, the State or the Administrator may choose to issue separate notices or additional notices related to the proposed small system variance, provided that the requirements in paragraphs (a) through (d) of this section are satisfied.

(f) Prior to promulgating the final variance, the State or the Administrator must respond in writing to all significant public comments received relating to the small system variance. Response to public comment and any other documentation supporting the issuance of a variance must be made available to the public after final promulgation.

§142.309 What are the public meeting requirements associated with the proposal of a small system variance?

(a) A State or the Administrator must provide for at least one (1) public meeting on the small system variance no later than 15 days after the small system variance is proposed.

(b) At the time of the public meeting, the State or Administrator must prepare and make publicly available, in addition to the information listed in §142.308(c), either:

(1) The proposed small system variance, if the public meeting occurs after proposal of the small system variance; or

(2) A draft of the proposed small system variance, if the public meeting occurs prior to proposal of the proposed small system variance.

(c) Notice of the public meeting must be provided in the manner required under §142.308 at least 30 days in advance of the public meeting. This notice must be provided by the State, the Administrator, or the public water system as directed by the State or Administrator.

§142.310 How can a person served by the public water system obtain EPA review of a State proposed small system variance?

(a) Any person served by the public water system may petition the Administrator to object to the granting of a small system variance within 30 days after a State proposes to grant a small system variance for a public water system.

(b) The Administrator must respond to a petition filed by any person served by the public water system and determine whether to object to the small system variance under §142.311, no later than 60 days after the receipt of the petition.

EPA REVIEW AND APPROVAL OF SMALL SYSTEM VARIANCES

§142.311 What procedures allow the Administrator to object to a proposed small system variance or overturn a granted small system variance for a public water system serving 3,300 or fewer persons?

(a) At the time a State proposes to grant a small system variance under this subpart, the State must submit to the Administrator the proposed small system variance and all supporting information, including any written public comments received prior to proposal.

(b) The Administrator may review and object to any proposed small system variance within 90 days of receipt of the proposed small system variance. The Administrator must notify the State in writing of each basis for the objection and propose a modification to the small system variance to resolve the concerns of the Administrator. The State must make the recommended modification, respond in writing to each objection, or withdraw the proposal to grant the small system variance.

(c) If the State issues the small system variance without resolving the concerns of the Administrator, the Administrator may overturn the State decision to grant the variance if the Administrator determines that the State decision does not comply with the Act or this rule.

§142.312 What EPA action is necessary when a State proposes to grant a small system variance to a public water system serving a population of more than 3,300 and fewer than 10,000 persons?

(a) At the time a State proposes to grant a small system variance to a public water system serving a population of more than 3,300 and fewer than 10,000 persons, the State must submit the proposed small system variance and all supporting information, including public comments received prior to proposal, to the Administrator.

(b) The Administrator must approve or disapprove the small system variance within 90 days of receipt of the proposed small system variance and supporting information. The Administrator must approve the small system variance if it meets each requirement within the Act and this rule.

(c) If the Administrator disapproves the small system variance, the Administrator must notify the State in writing of the reasons for disapproval and the small system variance does not become effective. The State may resubmit the small system variance for review and approval with modifications to address the objections stated by the Administrator.

§142.313 How will the Administrator review a State's program under this subpart?

(a) The Administrator must periodically review each State program under this subpart to determine whether small system variances granted by the State comply with the requirements of the Act, this rule and the affordability criteria developed by the State.

(b) If the Administrator determines that small system variances granted by a State are not in compliance with the requirements of the Act, this rule or the affordability criteria developed by the State, the Administrator shall notify the State in writing of the deficiencies and make public the determinations.

(c) The Administrator's review will be based in part on quarterly reports prepared by the States pursuant to §142.15(a)(1) relating to violations of increments of progress or other violated terms or conditions of small system variances.

PART 143—NATIONAL SECONDARY DRINKING WATER REGULATIONS

Sec.
143.1 Purpose.
143.2 Definitions.
143.3 Secondary maximum contaminant levels.
143.4 Monitoring.

AUTHORITY: 42 U.S.C. 300f *et seq.*

SOURCE: 44 FR 42198, July 19, 1979, unless otherwise noted.

§143.1 Purpose.

This part establishes National Secondary Drinking Water Regulations pursuant to section 1412 of the Safe

Drinking Water Act, as amended (42 U.S.C. 300g–1). These regulations control contaminants in drinking water that primarily affect the aesthetic qualities relating to the public acceptance of drinking water. At considerably higher concentrations of these contaminants, health implications may also exist as well as aesthetic degradation. The regulations are not Federally enforceable but are intended as guidelines for the States.

§143.2 Definitions.

(a) *Act* means the Safe Drinking Water Act as amended (42 U.S.C. 300f *et seq.).*

(b) *Contaminant* means any physical, chemical, biological, or radiological substance or matter in water.

(c) *Public water system* means a system for the provision to the public of piped water for human consumption, if such a system has at least fifteen service connections or regularly serves an average of at least twenty-five individuals daily at least 60 days out of the year. Such term includes (1) any collection, treatment, storage, and distribution facilities under control of the operator of such system and used primarily in connection with such system, and (2) any collection or pretreatment storage facilities not under such control which are used primarily in connection with such system. A public water system is either a ''community water system'' or a ''non-community water system.''

(d) *State* means the agency of the State or Tribal government which has jurisdiction over public water systems. During any period when a State does not have responsibility pursuant to section 1443 of the Act, the term ''State'' means the Regional Administrator, U.S. Environmental Protection Agency.

(e) *Supplier of water* means any person who owns or operates a public water system.

(f) *Secondary maximum contaminant levels* means SMCLs which apply to public water systems and which, in the judgement of the Administrator, are requisite to protect the public welfare. The SMCL means the maximum permissible level of a contaminant in water which is delivered to the free flowing outlet of the ultimate user of public water system. Contamimants added to the water under circumstances controlled by the user, except those resulting from corrosion of piping and plumbing caused by water quality, are excluded from this definition.

[44 FR 42198, July 19, 1979, as amended at 53 FR 37412, Sept. 26, 1988]

§143.3 Secondary maximum contaminant levels.

The secondary maximum contaminant levels for public water systems are as follows:

Contaminant	Level
Aluminum	0.05 to 0.2 mg/l.
Chloride	250 mg/l.
Color	15 color units.
Copper	1.0 mg/l.
Corrosivity	Non-corrosive.
Fluoride	2.0 mg/l.
Foaming agents	0.5 mg/l.
Iron	0.3 mg/l.
Manganese	0.05 mg/l.
Odor	3 threshold odor number.
pH	6.5–8.5.
Silver	0.1 mg/l.
Sulfate	250 mg/l.
Total dissolved solids (TDS)	500 mg/l.
Zinc	5 mg/l.

These levels represent reasonable goals for drinking water quality. The States may establish higher or lower levels which may be appropriate dependent upon local conditions such as unavailability of alternate source waters or other compelling factors, provided that public health and welfare are not adversely affected.

[44 FR 42198, July 19, 1979, as amended at 51 FR 11412, Apr. 2, 1986; 56 FR 3597, Jan. 30, 1991]

§143.4 Monitoring.

(a) It is recommended that the parameters in these regulations should be monitored at intervals no less frequent than the monitoring performed for inorganic chemical contaminants listed in the National Interim Primary Drinking Water Regulations as applicable to community water systems. More frequent monitoring would be appropriate for specific parameters such as pH, color, odor or others under certain circumstances as directed by the State.

(b) Measurement of pH, copper and fluoride to determine compliance under

§143.3 may be conducted with one of the methods in §141.23(k)(1). Analyses of aluminum, chloride, foaming agents, iron, manganese, odor, silver, sulfate, total dissolved solids (TDS) and zinc to determine compliance under §143.3 may be conducted with the methods in the following table or alternative methods listed in appendix A to subpart C of part 141. Criteria for analyzing aluminum, copper, iron, manganese, silver and zinc samples with digestion or directly without digestion, and other analytical test procedures are contained in *Technical Notes on Drinking Water Methods,* EPA–600/R–94–173, October 1994. This document is available from the National Service Center for Environmental Publications (NSCEP), P.O. Box 42419, Cincinnati, OH 45242–0419 or *http://www.epa.gov/nscep/.*

Contaminant	EPA	ASTM[3]	SM[4] 18th and 19th ed.	SM[4] 20th ed.	SM[7] Online	Other
1. Aluminum	200.7[2]		3120 B	3120 B	3120 B–99.	
	200.8[2]		3113 B		3113 B–99.	
	200.9[2]		3111 D		3111 D–99.	
2. Chloride	300.0[1], 300.1[6]	D4327–97, 03	4110 B	4110 B	4110 B–00.	
			4500–Cl^- D	4500–Cl^- D	4500–Cl^- D–97.	
		D512–89 (Reapproved 1999) B.	4500–Cl^- B	4500–Cl^- B	4500–Cl^- B–97.	
						D6508, Rev. 2[8]
3. Color			2120 B	2120 B	2120 B–01.	
4. Foaming Agents			5540 C	5540 C	5540 C–00.	
5. Iron	200.7[2]		3120 B	3120 B	3120 B–99.	
	200.9[2]		3111 B		3111 B–99.	
			3113 B		3113 B–99.	
6. Manganese	200.7[2]		3120 B	3120 B	3120 B–99.	
	200.8[2]		3111 B		3111 B–99.	
	200.9[2]		3113 B		3113 B–99.	
7. Odor			2150 B	2150 B	2150 B–97.	
8. Silver	200.7[2]		3120 B	3120 B	3120 B–99.	I–3720–85[5]
	200.8[2]		3111 B		3111 B–99.	
	200.9[2]		3113 B		3113 B–99.	
9. Sulfate	300.0[1], 300.1[6]	D4327–97, 03	4110 B	4110 B	4110 B–00.	
	375.2[1]		4500–SO_4^{2-} F	4500–SO_4^{2-} F.		
			4500–SO_4^{2-} C, D	4500–SO_4^{2-} C, D.		
		D516–90, 02	4500–SO_4^{2-} E	4500–SO_4^{2-} E.		
						D6508, Rev. 2[8]
10. Total Dissolved Solids			2540 C	2540 C	2540 C–97.	
11. Zinc	200.7[2]		3120 B	3120 B	3120 B–99.	
	200.8[2]		3111 B		3111 B–99.	

The procedures shall be done in accordance with the documents listed below. The incorporation by reference of the following documents was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. Copies of the documents may be obtained from the sources listed below. Information regarding obtaining these documents can be obtained from the Safe Drinking Water Hotline at 800–426–4791. Documents may be inspected at EPA's Drinking Water Docket, EPA West, 1301 Constitution Avenue, NW., Room 3334, Washington, DC (Telephone: 202–566–2426); or at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202–741–6030, or go to: *http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html.*

[1] "Methods for the Determination of Inorganic Substances in Environmental Samples," EPA/600/R–93–100, August 1993. Available at NTIS, PB94–120821.

[2] "Methods for the Determination of Metals in Environmental Samples—Supplement I," EPA/600/R–94–111, May 1994. Available at NTIS, PB 95–125472.

[3] *Annual Book of ASTM Standards,* 1994, 1996, 1999, or 2004, Vols. 11.01 and 11.02, ASTM International; any year containing the cited version of the method may be used. Copies may be obtained from the ASTM International, 100 Barr Harbor Drive, West Conshohocken, PA 19428.

[4] *Standard Methods for the Examination of Water and Wastewater,* 18th edition (1992), 19th edition (1995), or 20th edition (1998). American Public Health Association, 1015 Fifteenth Street, NW., Washington, DC 20005. The cited methods published in any of these three editions may be used, except that the versions of 3111 B, 3111 D, and 3113 B in the 20th edition may not be used.

[5] Method I–3720–85, *Techniques of Water Resources Investigation of the U.S. Geological Survey,* Book 5, Chapter A–1, 3rd ed., 1989. Available from Information Services, U.S. Geological Survey, Federal Center, Box 25286, Denver, CO 80225–0425.

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[6] "Methods for the Determination of Organic and Inorganic Compounds in Drinking Water," Vol. 1, EPA 815R–00–014, August 2000. Available at NTIS, PB2000–106981.

[7] Standard Methods Online are available at *http://www.standardmethods.org*. The year in which each method was approved by the Standard Methods Committee is designated by the last two digits in the method number. The methods listed are the only online versions that may be used.

[8] Method D6508, Rev. 2, "Test Method for Determination of Dissolved Inorganic Anions in Aqueous Matrices Using Capillary Ion Electrophoresis and Chromate Electrolyte," available from Waters Corp, 34 Maple St., Milford, MA, 01757, Telephone: 508/482–2131, Fax: 508/482–3625.

[44 FR 42198, July 19, 1979, as amended at 53 FR 5147, Feb. 19, 1988; 56 FR 30281, July 1, 1991; 59 FR 62470, Dec. 5, 1994; 64 FR 67466, Dec. 1, 1999; 67 FR 65252, Oct. 23, 2002; 69 FR 18803, Apr. 9, 2004; 72 FR 11248, Mar. 12, 2007; 74 FR 30959, June 29, 2009]

Importance of pipe deposits to Lead and Copper Rule compliance

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When Madison, Wis., exceeded the lead action level in 1992, residential and off-line tests suggested that lead release into the water was more complex than a lead solubility mechanism. Scale analyses (color and texture as well as mineralogical and elemental composition) of five excavated lead service lines (LSLs) revealed that accumulation of manganese (and iron) onto pipe walls had implications for lead corrosion by providing a high-capacity sink for lead. Manganese that accumulated from source well water onto pipe scales (up to 10% by weight of scale composition) served to capture and eventually transport lead to consumer taps. In addition, manganese sometimes obstructed the predominance of an insoluble (and thus potentially protective) plattnerite [Pb(IV) solid] scale layer. Full LSL replacement in Madison achieved Lead and Copper Rule compliance and a major reduction in lead contamination and exposure, supplemented by unidirectional flushing of water mains and manganese control in the source well water.

Keywords: *corrosion scale, lead service lines, manganese, mineralogy, Pb(II), Pb(IV)*

In 1992 when Madison, Wis., was found to be out of compliance with the Lead and Copper Rule (LCR), the regulation required that action be taken to combat the corrosion of lead and the resulting contamination of drinking water. Observations from residential and off-line tests, however, suggested that the lead contamination was more complex than a simple "plumbosolvency" or lead solubility mechanism. So began a decade of exploration to delineate the pathway of lead into Madison's water from the pipes to the consumers' taps. This article describes the process and analyses that eventually found manganese scale on pipe walls to be implicated in the lead release in the Madison water system.

INTRODUCTION

Literature review. Deposition of manganese, iron, and other metals in drinking water distribution systems has been predicted, documented, and referenced extensively (Hill et al, 2010; Peng et al, 2010; Friedman et al, 2009; Schock, 2005; Lytle et al, 2004; Seth et al, 2004; Snoeyink et al, 2003; Reiber & Dostal, 2000; Gauthier et al, 1996; Sly et al, 1990), and up to nearly 18% by weight of manganese was found in scales of lead service lines from 26 public water systems (Schock et al, 2008). Manganese and iron are not regulated in drinking water for health concerns, and their nonenforceable secondary maximum contaminant levels (SMCLs) of 50 µg/L and 0.30 mg/L, respectively, were set because of aesthetic concerns centered on staining and metallic taste (USEPA, 2012). However, the ability of manganese and iron to sorb or accumulate regulated metals renders them an important consideration for public health.

Iron particulates from galvanized iron pipe corrosion scales have been implicated directly in sorbing, releasing, and causing erratic levels of regulated metals (such as arsenic and lead) at the tap (McFadden et al, 2011; Lytle et al, 2010; McFadden et al, 2009). Only a small subset of the abundant geochemical references demonstrating manganese as an effective scavenger of lead and other metals can be cited here (Kwon et al, 2013; Puppa et al, 2013; Rout et al, 2013; Wang et al, 2012; Eren et al, 2011; Kwon et al, 2010; Zhao et al, 2010; Feng et al, 2007; Tonkin et al, 2004; Dong et al, 2003; O'Reilly & Hochella, 2003; Ohta & Kawabe, 2001; Pretorius & Linder, 2001; Kiratisevee et al, 2000; Tessier et al, 1996; Manceau et al, 1992). Manganese media have found direct application to the removal of both arsenic (Chang et al, 2012; Ouvrard et al, 2005; Chakravarty et al, 2002) and radium (Qureshi & Nelson, 2003; Mott et al, 1993; Brinck et al, 1978), further verifying the ability of manganese solids to accumulate contaminants of potential health concern. As such, manganese could function similarly to iron if present in drinking water flowing through pipes.

Clearly, deposited manganese on pipe surfaces could provide a reservoir for the accumulation of lead from upstream sources and from in situ corrosion of lead piping. Sources of lead found at residential consumers' taps in the United States are primarily lead service lines (LSLs), followed by premise plumbing and faucets (Sandvig et al, 2008). Accumulated lead from these sources in manganese and iron scales on pipe walls could eventually be released into the water because of sporadic and unpredictable hydraulic nuances.

Study objective. The goal of this study was to gain insight into lead release mechanisms from LSLs into Madison's drinking

TABLE 1 Typical quality of Madison drinking water originating from representative wells 3, 6, 14, and 19

	Well 3		Well 6		Well 14		Well 19	
Parameter	**Median**	**Min–Max**	**Median**	**Min–Max**	**Median**	**Min–Max**	**Median**	**Min–Max**
pH	7.3	7.1–7.5	7.4	7.4–7.5	7.4	7.3–7.5	7.5	7.4–7.6
Alkalinity—*mg/L* $CaCO_3$	304	293–318	307	305–313	330	330–336	284	259–288
Calcium—*mg/L*	80	72–98	82	81–83	95	92–96	65	64–66
Magnesium—*mg/L*	46	41–53	42	41–42	50	47–50	34	33–34
Free chlorine—*mg/L*	0.2	0.01–0.4	0.2	0.00–0.4	0.2	0.04–0.4	0.2	0.04–0.4
Manganese—*µg/L*	120	74–202	12	0.6–1.4	0.3	0.2–0.4	39	22–45
Iron—*mg/L*	0.09	0.06–0.14	0.02	< 0.01–0.03	< 0.01	< 0.01	0.20	0.17–0.23
Chloride—*mg/L*	29	19–56	28	26–29	69	60–77	5.1	4.7–5.4
Sulfate—*mg/L*	58	40–106	24	23–25	23	23–24	6.4	6.1–6.7
Total solids—*mg/L*	482	394–596	396	324–444	530	476–576	306	240–448
Conductivity—*umhos/cm*	738	669–930	701	691–729	877	853–917	536	530–546

$CaCO_3$—calcium carbonate, max—maximum, min—minimum, *n*—number

The four wells are representative of the relative variability in manganese content among all wells; wells 3, 6, 14, and 19 represent high, low, low, and intermediate manganese content, respectively. Sampling was conducted at distribution system entry point. Data were provided by the drinking water utility and reflect annual measurements from 2001 to 2006 (*n* = 6), with the exception of the free chlorine measurements, which reflect only the year 2005. (Free chlorine values > 0.4 mg/L were believed by the water utility to be erroneous; free chlorine has been boosted to 0.3 mg/L since 2007.)

water by undertaking visual, mineralogical, and chemical characterization of excavated LSL corrosion scales. Emphasis was placed on the accumulation of manganese and iron from the flowing water onto the corrosion scale and on the distinction between the Pb(II) corrosion by-product solids and the less-soluble Pb(IV) corrosion by-product solids. Before presentation of this research work, Madison source water quality data and historical tap water lead data are described to provide background and a better understanding of the city's experience with the LCR.

MADISON'S LCR EXPERIENCE

Water source. Madison Water Utility supplies groundwater from 22 wells, following chlorine disinfection and fluoride addition at each well (no corrosion inhibitor added). The chlorinated water has high alkalinity of approximately 300 mg/L as calcium carbonate ($CaCO_3$) at a pH of approximately 7.5; however, water quality varies among neighborhoods, depending on the specific wells serving those areas (Table 1). For example, during the time frame of this study, water originating from well 3 contained 120 µg/L manganese (higher than the SMCL), whereas water from well 19 contained 39 µg/L manganese—i.e., lower than the SMCL (Table 1). Water from wells 6 and 14 had negligible amounts of manganese at 1.2 and 0.3 µg/L, respectively (Table 1).

Indeed, although water from individual wells may be fairly consistent in its manganese content, differences among the wells attributable to variations in the strata are fairly common and have also been reported at other groundwater utilities (Brandhuber et al, 2013). High manganese was not always associated with high iron in a given Madison well (Table 1). A free chlorine residual of water that had been previously measured at approximately 0.2 mg/L (Table 1) has been boosted to approximately 0.3 mg/L by the water utility since 2007. The water's oxidation reduction potential (a complex function of oxidant strength, oxidant concentration, and reactivity with waterborne and pipe surface/scale reductants) was not monitored.

Case in which the LCR was exceeded. Madison's water was distributed via mostly metallic water mains and service lines (PSCW, 2001), with approximately 10,000 LSLs in service in 1992 (Denig-Chakroff, 2001). After exceeding the LCR lead action level in 1992 (90th percentile lead = 16 µg/L in 100 sampled sites), Madison Water Utility undertook extensive off-line testing in 1992–2001; the testing consisted of jar testing of lead coupons and subsequent pilot testing of old and new lead pipes for chemical adjustments to water corrosivity (Cantor, 2010; Denig-Chakroff, 2001). Figure 1 shows a timeline of testing and related response actions by the utility.

An increase in pH caused excessive $CaCO_3$ scaling in off-line tests, whereas addition of a polyphosphate product to the water increased lead release by four times, compared with no treatment (Cantor et al, 2000). Orthophosphate was the most effective treatment in reducing lead release into the water in off-line tests. The treatment was discouraged, however, for several reasons. First, the distribution system at that time had 23 entry points (i.e., 23 wells) that would require chemical dosing; second, landscaping water would run off to lakes already overloaded with nutrients; and third, the phosphorus loading to a new biological phosphorus removal system at the local wastewater treatment plant would have increased to levels outside of design specifications (Cantor, 2010; Denig-Chakroff, 2001).

Full LSL replacement. Madison Water Utility chose to address the 1992 case of exceeding the LCR by implementing full LSL replacement during 2001–2010 as a way to eliminate a significant source of lead in the water system. Monitoring was conducted at 60 home taps after full LSL replacement in 2003 (Cantor, 2004). The monitoring found that lead levels were still high at sites where LSLs had been replaced within the previous four years, as evidenced by a 90th percentile lead level of 22 µg/L (Figure 1). Information was not available on the presence of leaded solder joints or leaded brass in the sampled homes. Still, it was surprising that elevated lead could persist for so long after full LSL removal. The erratic lead concentrations were attributed to particulate (and not dissolved) lead in water, suggesting that particulate matter had accumulated in the premise plumbing and was dislodging into the water even after LSL replacement (Cantor, 2006a, 2004).

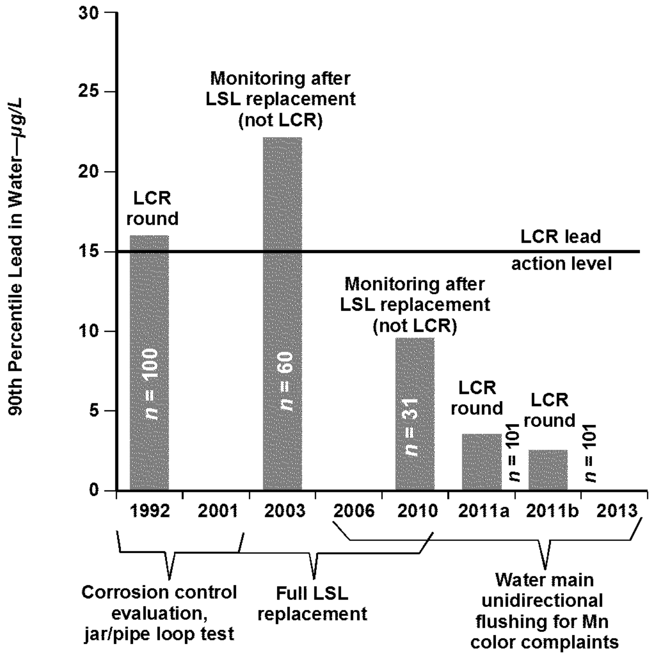
Manganese color complaints and unidirectional flushing (UDF) of water mains. A separate water quality issue arose in 2004 concerning manganese color complaints (Schlenker et al, 2008). In response, the Madison Water Utility began a program to control source water manganese and clean existing manganese scale from water mains by means of UDF. UDF of water mains and some water service lines was initiated in 2006 and has been performed ever since. The program involves closing valves on side branches of water mains to achieve a high velocity flow—i.e., ≥ 5 fps (≥ 1.5 m/s)—through straight pipe sections in order to scour out pipe scales with the goal of achieving < 1 ntu turbidity in the flushing water (Antoun et al, 1999; Oberoi, 1994).

When the UDF program began in 2006, flushing water samples from six water mains (unlined/lined cast iron or ductile iron) were analyzed and found to contain 3,500–36,000 µg/L (13,000 µg/L on average) of manganese (Cantor, 2006b), suggesting that significant accumulation of manganese from the well water onto water mains was successfully flushed out. In addition, aluminum, arsenic, lead, and nickel were found in the flushing water at concentrations considerably above detection and entry point levels (Cantor, 2006b). The metal concentrations flushed from the water mains at that time represented long-term scale accumulation not previously removed by conventional flushing.

Lead in water after full LSL replacement and UDF. Of the initial 100 sampling sites for LCR compliance in 1992 (Figure 1), 49 sampling sites were homes with LSLs that were subsequently removed as part of the city's full LSL replacement program. Of those sites, 31 were available for followup sampling in 2010. Before full LSL replacement, lead concentrations in water at those sites ranged from 3.6 µg/L (at home 1) to 55 µg/L (at home 31), with nine out of 31 home taps exceeding the 15-µg/L lead action level in 1992 (Figure 2). Other LCR sampling sites, with copper water service lines but lead solder, had lead concentrations ranging from < 0.4 to 5.7 µg/L with a 90th percentile of 3.5 µg/L in the 1992 data set. After full LSL replacement at the 31 LSL sites and UDF of nearby water mains, subsequent sampling by Madison Water Utility at the same locations in 2010 found lower lead levels in 28 of the 31 residences, ranging from < 0.5 to 18.2 µg/L (Figure 2) and a 90th percentile lead concentration of 7.4 µg/L (Figure 1). Of the 31 homes, only one (home 17) exceeded 15 µg/L of lead in 2010 (Figure 2).

The most recent LCR sampling rounds of 2011 showed 90th percentile lead of 2.6–3.6 µg/L (Figure 1), attributable to the strategy of full LSL replacement in the city. The implementation of a UDF program and the control of manganese concentrations that enter the distribution system may also have contributed to lowering lead levels in residences awaiting LSL replacement (from 2006, when the manganese control program began, to 2010 when the LSL replacement program was completed). With the manganese control program, both dissolved manganese and particulate manganese in water were reduced in order to avoid the accumulation of scale in the plumbing, which serves as a sink for lead.

FIGURE 1 Timeline of water lead problems and relevant actions at Madison Water Utility



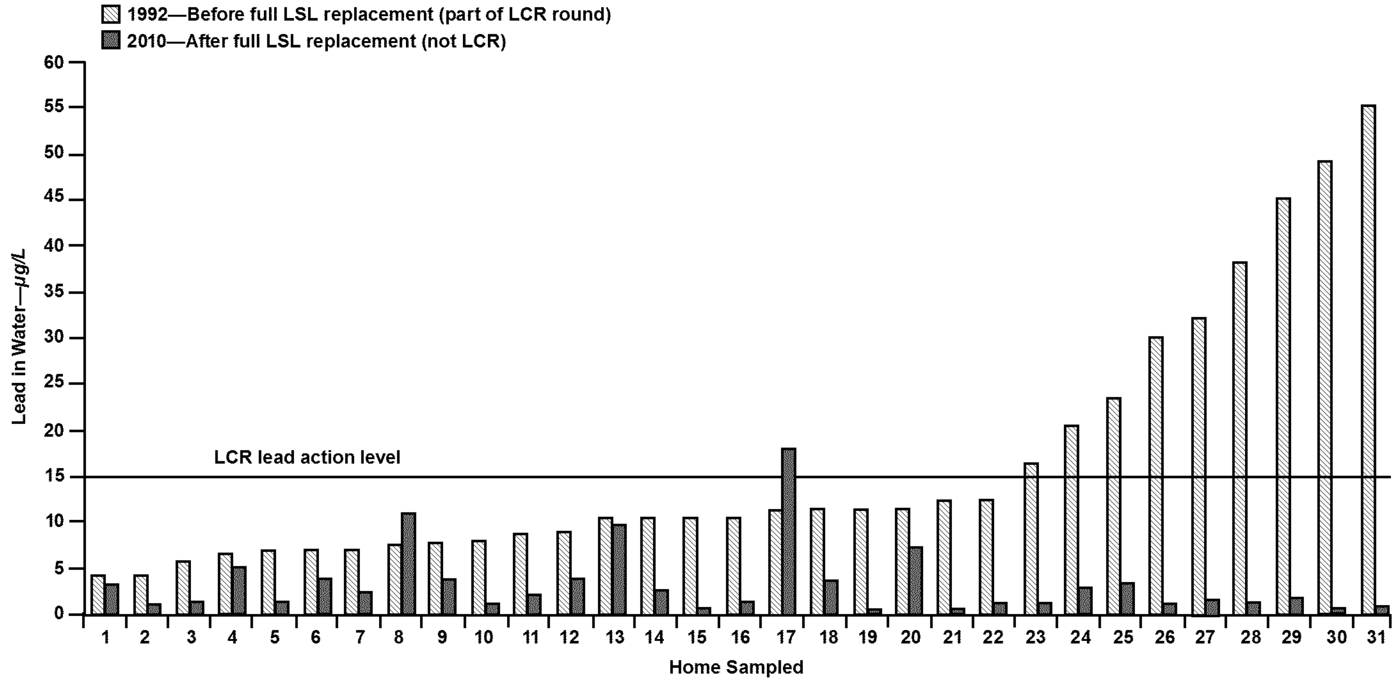
LCR—Lead and Copper Rule, LSL—lead service line, Mn—manganese, *n*—number of sites sampled

2011a signifies the first LCR round of the year, and 2011b signifies the second LCR round.

MATERIALS AND METHODS

Lead pipe samples. *Pipe collection.* Five lead pipe samples were excavated from five separate street locations in Madison from 2001 through 2006 (Table 2). As shown in the table, each pipe received water from a combination of three or more wells, and the five pipes were collectively supplied with water by nine wells overall (out of the total 22 Madison wells). The excavated lead pipes were installed during the years 1910–1927 and were removed as part of the city's full LSL replacement program after 74–95 years in service (Table 2). After excess water was removed, the pipe ends were plugged with rubber stoppers to maintain interior humidity, and the pipes were wrapped airtight. They were then immediately shipped to the Advanced Materials and Solids Analysis Resources Core (AMSARC) laboratory of the US Environmental Protection Agency (USEPA) in Cincinnati, Ohio, for corrosion scale analysis.

FIGURE 2 Lead in tap water before and after full LSL replacement at 31 homes in Madison, Wis.



LCR—Lead and Copper Rule, LSL—lead service line

Unlike the 1992 sampling, the 2010 sampling was not intended for LCR compliance but did follow the LCR sampling protocol (the resampled homes were no longer LCR sampling sites after full LSL replacement).

Pipe preparation. When the pipe was received in the laboratory and before any processing, the outer pipe surface was washed of all loose material that could pose a cross-contamination risk. The stoppers were removed from the ends of the pipes, and any loose solid material mobilized during the disturbance of extraction and shipping was carefully poured out and collected. The pipe segments were first cut into pieces approximately 12 in. (30 cm) in length, which subsequently were cut longitudinally. Longitudinal cutting exposed the inner corrosion scale and the inner pipe wall. The cutting created small, fresh metallic lead particles from the inner pipe wall; these occasionally scattered throughout the pipe internal surface and became embedded in the existing corrosion scale. To the extent possible, these new metallic lead particles were blown off the existing corrosion scale with a laboratory air jet or were manually removed using fine-tipped tools (e.g., forceps or dental picks).

Visual corrosion-scale observations. Macrophotographs of the corrosion scales were obtained using a digital camera, and visual observations were made regarding corrosion-scale texture and color. Colors were identified using the Munsell color chart, which rigorously classifies colors on the basis of three color attributes: hue, value, and chroma.

Corrosion-scale harvesting. Following photography and visual observations, scale material was harvested from each pipe in operationally defined layers. These different layers of scale were harvested using soft brushes and metal spatulas that were either fresh or cleaned with detergent and rinsed with deionized water. Determination of a layer was based on color and/or textural change in scale composition. On the basis of these criteria, most pipes appeared to have three layers; these layers were sequentially classified from outermost to innermost and are termed in this work as outer, intermediate, and inner. This distinction aimed to differentiate the scale material that represented the most dynamic interactions with flowing water constituents (the outer scale layer), the material that probably still interacted at a slower rate limited by diffusion (intermediate scale layer), and the innermost scale (inner

TABLE 2 Extracted lead pipe sample information

Sample	Year Extracted	Wells Supplying Water at Year of Extraction*	Years in Service
Lead pipe 1	2001	6, 14, **19**	> 74†
Lead pipe 2	2005	6, 14, **17**, 18, **19**, **27**	94
Lead pipe 3	2005	**3**, **8**, 11	> 78†
Lead pipe 4	2005	6, 14, **17**, 18, **19**, **27**	85–95
Lead pipe 5	2006	6, 14, **19**	79–87

*Wells that supplied water with manganese ≥ 40 μg/L are shown in bold type. Remaining wells had water with < 12 μg/L of manganese. Well classification is based on average annual manganese data from each well at the entry point to the distribution system, for the listed year or pipe extraction.
†estimated

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layer), which was often somewhat isolated from recent water contact. For some samples, scale material that was occasionally dislodged during transport and initial handling was classified as an additional "loose" scale layer. Harvested scale material was manually ground with an agate mortar and pestle until the material was able to pass through a 200-mesh (< 75-μm grain size) stainless-steel sieve. Material from each layer was stored in a labeled 2-mL glass vial with snap-fit colored plastic cap.

Analytical methods. ***Powder x-ray diffraction (PXRD).*** Aliquots of the ground material from each corrosion scale layer were used for PXRD analysis to determine the composition of crystalline solids in each layer. Powder samples were top-loaded into silicon or quartz zero-background sample holders. In cases with very little material, a small mass of the powdered sample was mixed with amyl acetate to create a slurry that was then transferred by pipette to a quartz zero-background plate. The amyl acetate was evaporated before sample analysis. PXRD patterns were obtained at the AMSARC laboratory with a diffractometer[1] using copper Ka radiation at 1.6 kW (40 kV, 40 mA). Scans were performed in step-scan mode with a step size of 0.02° 2• and a count time of 1–3 s. Pattern analysis for mineralogical composition was performed using appropriate software[2] and was compared with a reference library.[3] The relative abundance of each identified mineral was then determined from the PXRD patterns by measuring the integrated peak intensities (area under the curve) for the different phases and using the reference intensity ratio method to calculate the amount of each material.

X-ray absorption near-edge spectroscopy (XANES). Common Pb(II) corrosion by-product solids—particularly, but not exclusively, tetragonal PbO (litharge) and the normal lead carbonate $PbCO_3$ (cerussite)—have diffraction lines that typically overlap with many key features of the XRD pattern for b-PbO_2 (plattnerite; Schock et al, 2005). Interpretation uncertainty is added by lattice distortions from natural substitutions and stresses that can cause small peak position shifts and by peak broadening from the nanocrystalline nature of most lead scale solids. Therefore, XANES was used to validate the identification by PXRD of Pb(IV) compounds in some corrosion scales, and an additional analysis was performed to approximately quantify lead speciation in selected scale layers. Reference samples of Pb standard compounds and minerals were prepared and analyzed under the same experimental conditions for comparison with the scale samples. The Pb L_{III}-edge absorption spectra were collected at Sector 20-BM (Pacific Northwest Consortium/X-ray Operations and Research) at the Advanced Photon Source, Argonne National Laboratory, Argonne, Ill.

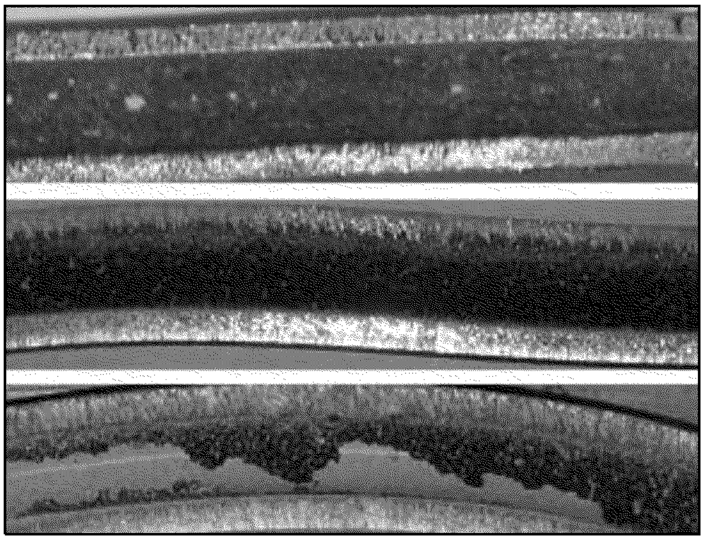
For XANES, the corrosion scales were smeared onto polyimide tape[4] to form a thin layer of sample sandwiched between two layers of tape. Three scans were collected at ambient temperature in fluorescence mode. The monochromator was calibrated by assigning the first inflection of the absorption edge of lead metal foil to 13035 eV. Estimation of the likely number of solid phases contained in the samples by principal component analysis of the normalized sample spectra was performed using appropriate software[5] (Webb, 2005). Target transformation was used to identify relevant standards for linear combination fitting (LCF) of the sample spectra (Malinowski, 1991). Scan averaging, background removal, data normalization, and LCF were performed using appropriate software (Ravel & Newville, 2005). Fitting range was –30 to +100 eV relative to the Pb L_{III}-edge. For each sample, the combination of standards with the lowest residual parameter was chosen as the most likely set of components. Estimation of the fraction of sorbed lead was calibrated using a standard of 2,000 mg/kg of adsorbed Pb(II) on ferrihydrite using established methodology (Strawn & Sparks, 2000, 1999; Strawn et al, 1998).

Inductively coupled plasma/atomic emission spectroscopy (ICP/AES). If enough scale material was available for additional analyses, an aliquot of the remaining material was placed in a separate labeled vial, and vials were shipped to the US Geological Survey in Denver, Colo., to determine 40 elements (atomic number > 10). Analyses were performed with a simultaneous spectrometer[6] after a sequential, multiacid digestion method with hydrochloric, nitric, perchloric, and hydrofluoric acids at low temperature (USGS, 1996).

RESULTS AND DISCUSSION

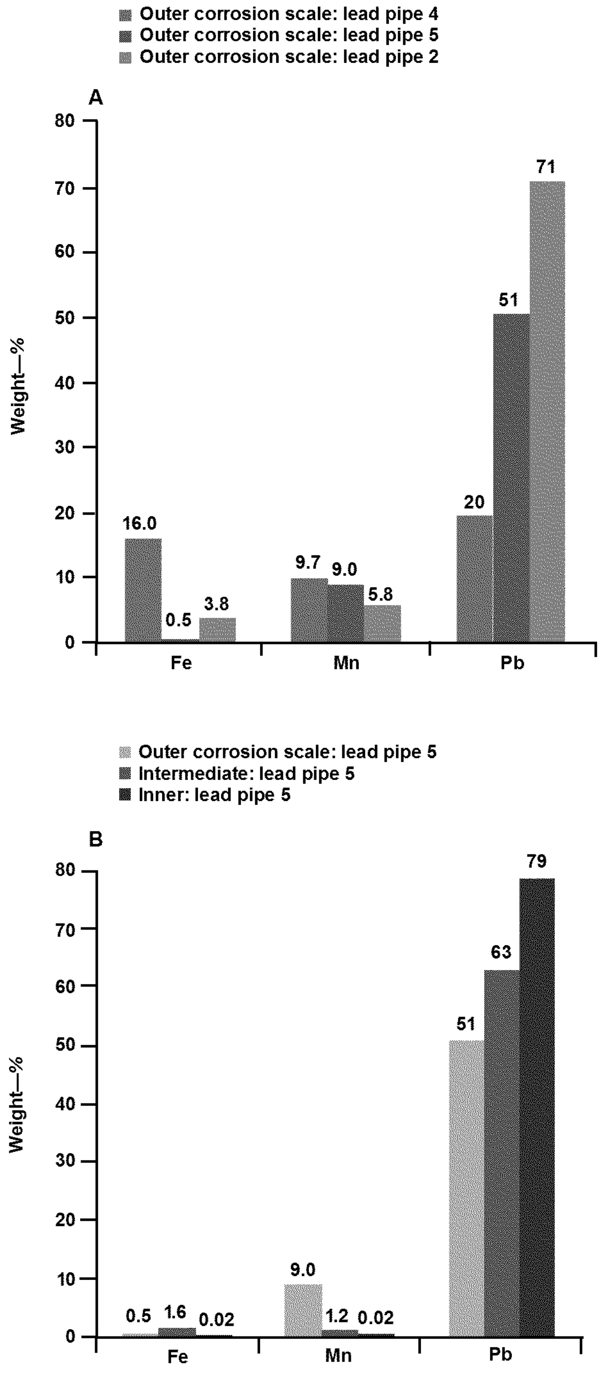
Visual corrosion scale observations. Visual inspection revealed some distinct differences in the internal pipe scale among the five pipes. The visual differences between lead pipes 1 and 4 were pronounced in terms of color and apparent tendency to detach (flake off) from the pipe surface. Lead pipe 4 had a generally thicker scale, on the order of approximately 1.3 mm, versus approximately 0.7 mm for lead pipe 1.

On the basis of the Munsell color chart, the outer scale of lead pipe 1 could be described as dark reddish brown to dusky red in color whereas the outer scale of lead pipe 4 could be described as reddish black to black (top and middle photographs, respectively, on this page). This color difference suggested that different



Longitudinal cross-sections of lead pipe 1 (top) and lead pipe 4 (middle) show the distinct color difference of the corrosion scale; the freshly exposed inner lead pipe wall has shiny metallic grey color and can be distinguished from the existing corrosion scales. Unlike lead pipe 1 (top), lead pipe 4's outer corrosion scale flaked off more readily, revealing another corrosion-scale layer underneath (bottom).

FIGURE 3 ICP/AES elemental analysis of iron, manganese, and lead on specific lead samples



Fe—iron, ICP/AES—inductively coupled plasma/atomic emission spectroscopy, Mn—manganese, Pb—lead

Part A of the figure shows outer corrosion scale of lead pipes 2, 4, and 5. Part B shows sequential corrosion layers of lead pipe 5.

corrosion solids or other solids had accumulated on the pipes when they were in service, potentially affecting lead release from the pipe surface into the flowing drinking water. Color differences in the remaining extracted lead pipes were more subtle.

Texturally, both pipe scales were granular and lumpy, but the outer scale on lead pipe 4 cracked more easily in the form of flakes that detached from the pipe surface, revealing another light yellowish red scale underneath (bottom photograph on page E340). Lead pipe 1's scale would not detach as readily into flakes, even though some powdery loose material was dislodged during transport. This suggested that outer corrosion scale on lead pipe 4 may have been more likely to detach into the water because of scour (e.g., high water flows) and thereby contaminate the water with detached flaky particulates.

Elemental composition of selective lead corrosion scales. Elemental analysis via ICP/AES could be performed only for the outer corrosion scale layer of lead pipes 2, 4, and 5, for which sufficient scale material remained after PXRD. Enough scale material was available for all three corrosion scale layers of lead pipe 5. Scale layers for lead pipes 1 and 3 could not be analyzed by ICP/AES because of insufficient scale layer material.

For all of the elements tested, lead, manganese, and sometimes iron were the most abundant metals in outer corrosion pipe scales. Specifically, lead was the most abundant at 20, 51, and 71% by weight in the outer (water contact) corrosion scale layer of lead pipes 4, 5, and 2, respectively (Figure 3, part A). Manganese was present at approximately 9–10% by weight in the outer scale layer of lead pipes 4 and 5, whereas it was present at a lower 6% by weight content in the outer scale layer of lead pipe 2 (Figure 3, part A). In the outer scale layer, iron was present at 16% by weight in lead pipe 4, 4% by weight in lead pipe 2, and virtually absent in lead pipe 5 (Figure 3, part A). Manganese presence was attributed entirely to the source water, whereas iron presence could be attributable to the source water and iron pipes upstream. This elemental analysis suggested that manganese and iron accumulated on the pipe surfaces. Other elements such as aluminum, calcium, potassium, magnesium, sodium, phosphorus, silicon, copper, and zinc were each present at ≤ 1.5% by weight (Table 3). The remainder of the scale composition consisted of light elements (e.g., oxygen, hydrogen, nitrogen, and carbon) that could not be analyzed and trace constituents.

For lead pipe 5, manganese was substantial on the outer corrosion scale but decreased drastically in the intermediate and inner corrosion-scale layers (Figure 3, part B). This suggested that the outer scale was generated by direct interaction with particles transported with the flowing water, but inner corrosion layers were not affected by that interaction. They were instead mostly influenced by the pipe material itself, as evidenced by increasingly higher lead content (Figure 3, part B). As shown in the figure, iron concentrations were relatively low for all of the corrosion scale layers in this specimen (≤ 1.6% in all three corrosion layers).

Mineralogical composition of lead corrosion scales. ***Pipe mineralogy based on PXRD.*** The importance of characterizing and interpreting the pipe scale compositions as an assemblage of discrete layers rather than as a single, scraped bulk phase is

TABLE 3 Elemental composition (ICP/AES analysis) of the outer corrosion scale of lead pipe samples 4, 5, and 2

	Sample—*% by weight*		
Element	**Lead Pipe 4**	**Lead Pipe 5**	**Lead Pipe 2**
Pb	20	51	71
Mn	9.7	9.0	5.8
Fe	16	0.5	3.8
Ca	14	0.5	0.7
Al	0.2	0.2	0.2
Mg	0.2	0.1	0.1
Si	NA	15	NA
P	0.3	0.1	0.2
K	0.04	< 0.005	0.06
Na	0.01	< 0.005	0.03
Zn	0.14	0.08	0.04
Cu	0.01	0.5	0.07

Al—aluminum, Ca—calcium, Cu—copper, Fe—iron, ICP/AES—inductively coupled plasma/atomic emission spectroscopy, K—potassium, Mg—magnesium, Mn—manganese, Na—sodium, NA—not analyzed, P—phosphorus, Pb—lead, Si—silicon, Zn—zinc

shown by Figure 4. On the basis of the bulk abundances, lead minerals that are highly soluble (up to hundreds of µg/L), such as cerussite and litharge, would dominate lead release into the water, and Madison would have had a widespread plumbosolvency problem that was more pronounced than the utility's observed instance of exceeding the LCR by only 1 µg/L lead in 1992. Analysis of multiple scale layers at the appropriate level of detail revealed more accurately the true nature of the utility's lead problem and guided its mitigation.

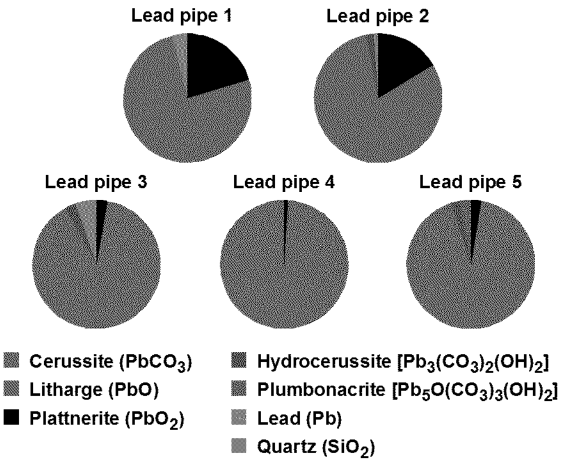
A close examination of PXRD patterns for lead pipe 1 (Figure 5) and lead pipe 4 (Figure 6) on a layer-by-layer basis revealed two distinct categories of corrosion mineralogy, primarily depending on the presence of unidentified amorphous solids versus Pb(IV) and Pb(II) crystalline phases on the outer pipe scale. The loose, outermost scale layer of lead pipe 1 essentially consisted of material dislodged during transport rather than the outer (attached) scale layer harvested from the pipe. The loose corrosion scale of this pipe mainly comprised plattnerite (b-PbO_2), an insoluble Pb(IV) solid that would tend to protect water from lead dissolution and/or contamination, when it was attached to the pipe surface during service (Figure 5). Traces of elemental lead shown in the figure were artifacts of pipe cutting. Both the outer and inner scale layers were predominantly composed of cerussite ($PbCO_3$) and litharge (a-PbO). Both of these identified crystalline solids are Pb(II) phases and have much higher solubility than the Pb(IV) phase plattnerite. Therefore, the water was likely protected from lead release by the insoluble Pb(IV)-rich layer that formed on top of cerussite and litharge.

Loose material did not dislodge during transport of lead pipe 4, but parts of the outer scale were already missing (see bottom photograph on page E340). The outer scale layer of this pipe was mainly made up of x-ray amorphous solids (rather than plattnerite), as evidenced by broad elevation of background between about 20° and 40° 2• and absence of sharp crystalline peaks in the PXRD pattern (Figure 6). No specific iron or manganese crystalline phases were identified. Hypothetically, poorly crystalline (and thus, unidentifiable by PXRD) manganic or ferric oxyhydroxide phases dominated the outer layer. This hypothesis is based on four factors: the background noise in the PXRD pattern, the knowledge that water from some wells was rich in manganese and iron, the dark brown–black color of the pipe scales that would describe such solids, and the relatively high concentration of iron and/or manganese from the elemental analyses. The intermediate corrosion-scale layer (not shown) and the inner corrosion-scale layer (Figure 6) were composed of crystalline Pb(II) phases, primarily cerussite and then litharge. In the absence of an insoluble plattnerite layer, lead pipe 4 is believed to have contributed to greater water lead contamination when in service, compared with lead pipe 1. The remaining samples (lead pipes 2, 3, and 5) could also be categorized (Figure 7) on the basis of PXRD patterns (not shown) similar to those of either lead pipe 1 or 4.

These observations seem to roughly agree with other parallel PXRD work on different excavated LSLs from Madison (Maynard & Mast, 2006), which used different corrosion-scale layering methodology and different instrumentation to identify plattnerite predominance in some, but not all, of the outer LSL scale layers.

Reinforcement of mineralogical findings based on XANES. Derivative XANES spectral shape characteristics (Figure 8)

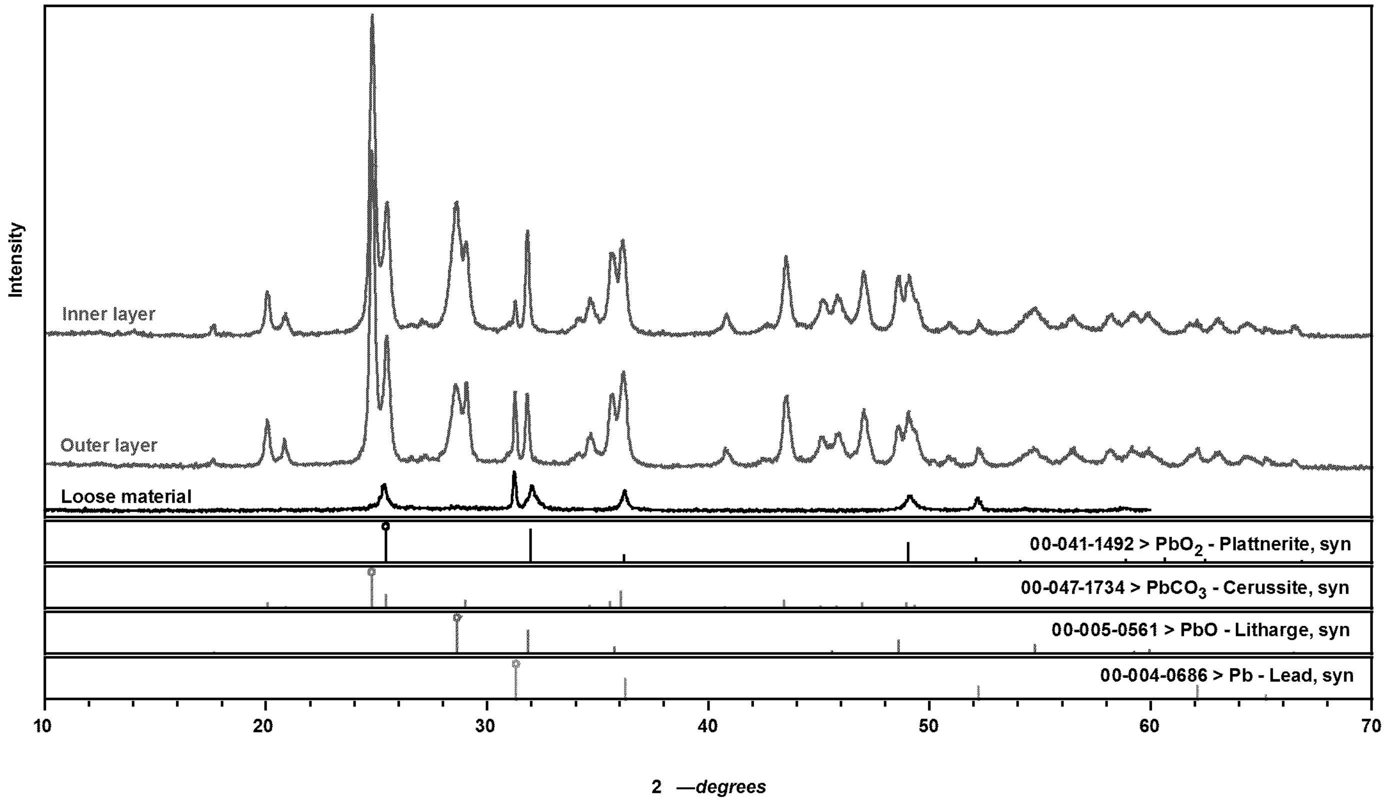
FIGURE 4 Distribution of minerals in the bulk scale of all the lead pipes



PXRD—powder x-ray diffraction

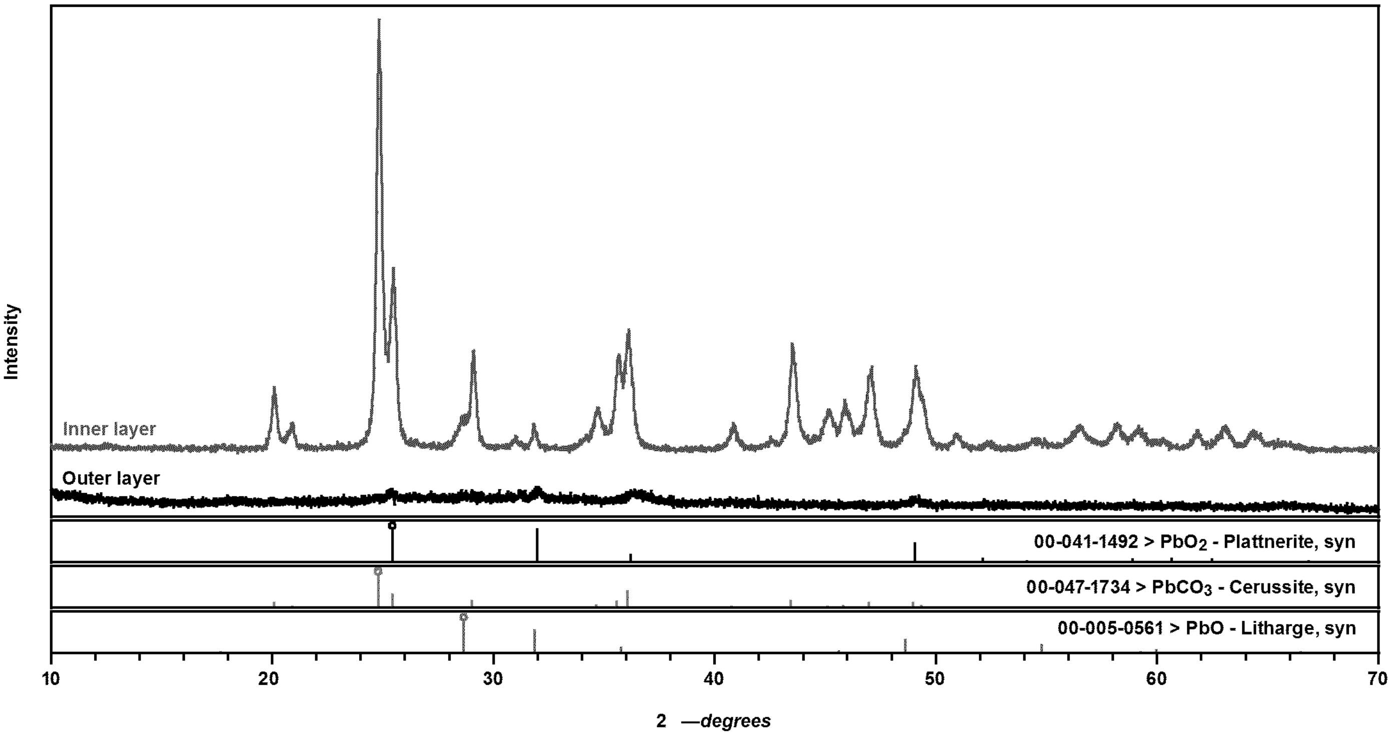
Distribution of minerals in the bulk scale was determined on the basis of integration of peak intensities of the PXRD patterns, when all scale layers of each pipe (loose, outer, intermediate, and inner) were merged to represent the overall bulk scale of that pipe.

FIGURE 5 PXRD patterns of loose, inner, and outer corrosion scale for lead pipe 1

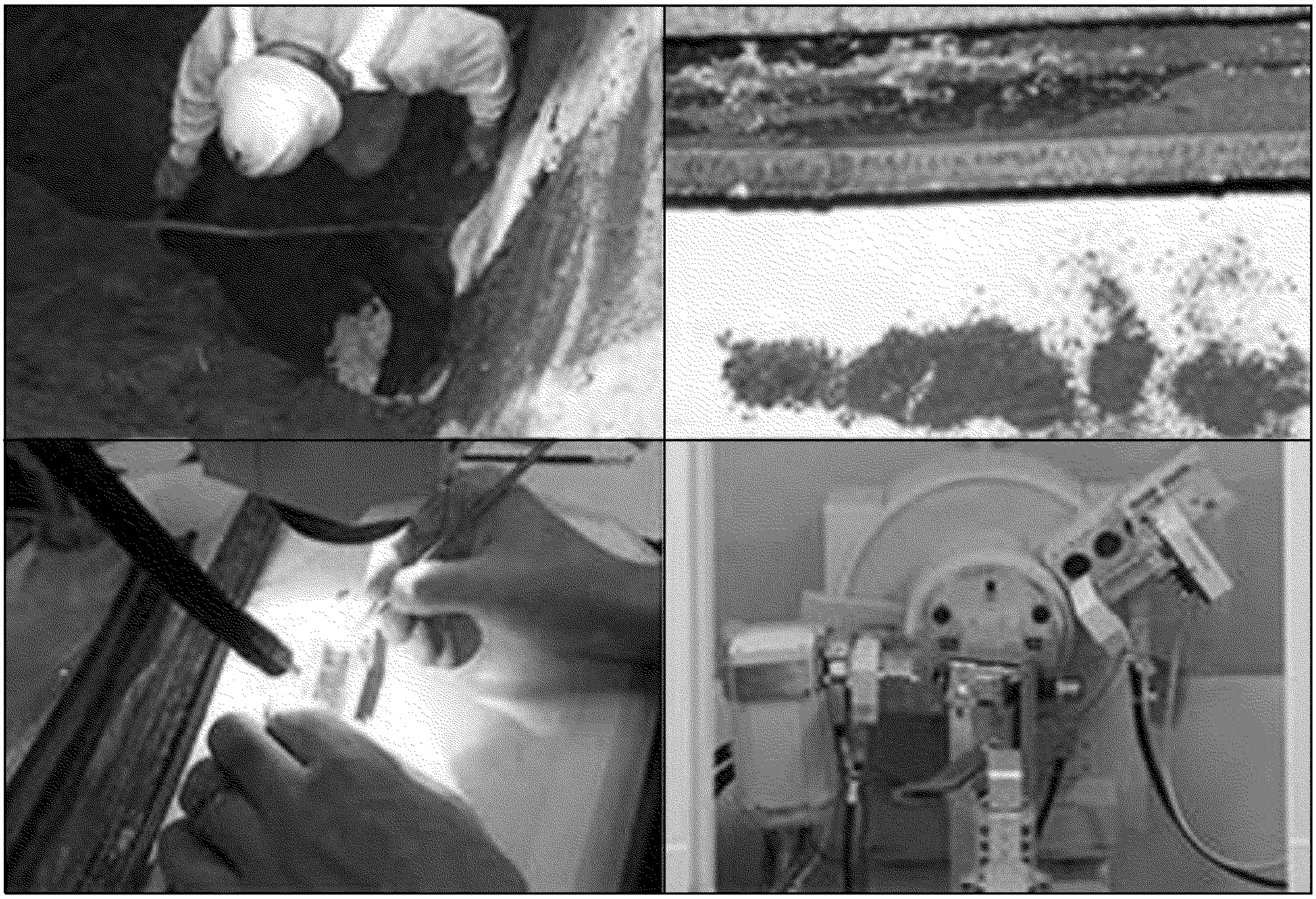


PXRD—powder x-ray diffraction

FIGURE 6 PXRD patterns of inner and outer corrosion scale for lead pipe 4



PXRD—powder x-ray diffraction



Lead service lines in Madison, Wis., were removed by water utility personnel (top left) and shipped to Cincinnati, Ohio, for scale analysis at the US Environmental Protection Agency Advanced Materials and Solids Analysis Resources Core laboratory. Pipe samples were cut longitudinally in the lab to expose the corrosion scales and any loose corrosion material dislodged during transport (top right). Operationally defined scale layers were then carefully harvested under the microscope (bottom left) and analyzed by powder x-ray diffraction (bottom right) to identify crystalline lead corrosion solids.

corroborated the predominance of plattnerite in the outer corrosion scales of lead pipes 1 and 2, consistent with the PXRD interpretations. Derivative XANES spectra for lead pipe 3 more closely approximated the reference material spectrum of a Pb(II) solid, such as cerussite (Figure 8).

Categorization of the pipes in Figure 7 was further supported by the XANES-derivative LCF analysis of lead speciation in the surface layer of the four pipes analyzed by this technique (Table 4). Only LCF analysis can provide reasonably quantitative estimates of the fraction of the lead existing in sorbed form on the nonlead substrate (presumably the amorphous iron- and manganese-oxyhydroxides). For the grouping of lead pipes 1 and 2, the amount of plattnerite on the surface was 60%, approximately 4–5 times higher than on lead pipes 3 and 4, making it the dominant species of lead. Less than 10–20% of the lead was present in sorbed form, consistent with the lower abundance of deposits of iron and manganese. Inversely, for lead pipes 3 and 4, the sorbed lead was the most prevalent species identified, and plattnerite was the least prevalent. Therefore, as expected from the iron and manganese surface-binding literature for divalent metals, there was a strong accumulation of lead with the nonlead substrate material.

Mineralogical findings relevant to source water quality. The five street locations of excavated LSLs were each served by a combination of wells before LSL extraction (Table 2). As shown in Table 2, measurements conducted by Madison Water Utility indicated that the five lead pipes were each receiving mixed water from some wells with low manganese content (< 12 µg/L) and from some wells with high manganese content (≥ 40 µg/L). The iron content of the well water was not always proportional to its manganese content (e.g., see Table 1). Therefore, although mineralogical observations classified lead pipes into two distinct categories, it was not possible to definitively associate one or the other category with specific wells that were rich in manganese and/or iron or poor in manganese and/or iron. Any such analysis was complicated by the fact that water from different wells (both manganese-rich and manganese-poor) was mixing at varying unknown degrees, depending on the hydraulic conditions of the system at any given moment.

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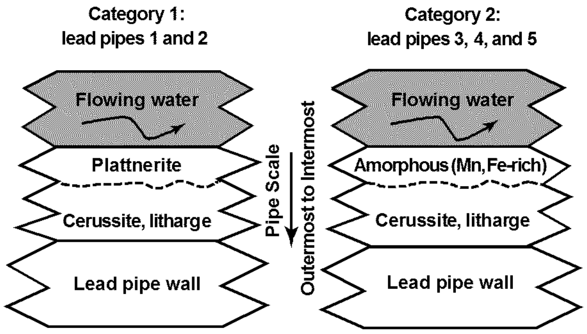
FIGURE 7 Predominant lead mineral in outer and intermediate/inner pipe scales based on PXRD patterns



Fe—iron, Mn—manganese, PXRD—powder x-ray diffraction

The outer pipe scale is in direct contact with the flowing water and, as such, is believed to affect water lead contamination the most. Plattnerite, an insoluble Pb(IV) scale, protects water from lead contamination.

A case study informed by Madison's experience. LCR experiences at Marshfield Utilities in Marshfield, Wis., reinforced certain observations made in Madison. Groundwater supplied from the utility's 13 wells exceeded the LCR lead action level in 2005 (Figure 9). A 90th percentile lead level of 32 µg/L was detected, with a maximum lead detection of 220 µg/L (Figure 9). When taps at 12 homes with LSLs were sampled in 2006, lead contamination of water was mostly in the form of particulate (and not soluble) lead, with a mild correlation of particulate lead to particulate manganese (R^2 = 0.615) as shown in Figure 10. Particulate iron did not correlate well with particulate lead (R^2 = 0.374, data not shown), nor did any of the other measured water parameters as detailed elsewhere (Cantor, 2006c).

Unlike Madison, the city of Marshfield chose not to remove the LSLs (Cantor, 2006c). However, on the basis of knowledge from the Madison case study's experience at the time, Marshfield Utilities started implementing UDF in 2007 to remove manganese scale from water mains. The city also took steps to reduce the mass of manganese that entered the distribution system by minimizing the use of wells high in manganese that were not connected to the existing manganese removal plant (Cantor, 2006c). The city has since been able to comply with the federal LCR protocol of first-litre first-draw samples (Figure 9). In 2010, UDF was not performed to the same extent as in previous years, and lead levels increased somewhat. Although the 90th percentile lead was still below the action level at 9.4 µg/L, the maximum lead detected was 59 µg/L, higher than the maximum lead of 10 µg/L detected in 2009 (Figure 9). LCR compliance sampling in Marshfield underscored the benefits of UDF and manganese control in removing particulate lead from a water system with a known manganese scale problem.

CONCLUSION

Visual observations (color and texture), chemical analysis (ICP/AES), and mineralogical analysis (PXRD, XANES) of five LSL corrosion scales helped elucidate lead release mechanisms into tap water in Madison. A protective insoluble brown plattnerite scale layer that formed on top of soluble cerussite and litharge kept lead in water down in some parts of the city (results for lead pipes 1 and 2). The ability to form insoluble Pb(IV) scales on LSLs in those areas is believed to have protected water from lead contamination. In other parts of the city, an amorphous scale layer seemed to obstruct plattnerite formation on LSL surfaces (results for lead pipes 3, 4, and 5). That darker layer was visually consistent with identification of manganese (and sometimes iron) in the corrosion scales and also consistent with the concurrent high fraction of sorbed lead. Soluble cerussite and litharge solids—i.e., Pb(II) solids—dominated underneath the unidentifiable manganese-rich scale layer.

This understanding of the pipe scale composition has provided a plausible explanation for historical observations of lead concentration in Madison tap water. Before LSL replacement, lead concentrations were highly erratic from residence to residence and were also erratic over time within a residence (Cantor, 2006c). The 2003 investigation of residences where LSLs had been replaced showed that the lead release was mostly in par-

TABLE 4 Lead phases in the outer corrosion scale of lead pipe samples*

Lead Phase	Oxidation State	Typical Color	Relative Solubility†	Normalized Pb Signal—%			
				Lead Pipe 1	Lead Pipe 2	Lead Pipe 3	Lead Pipe 4
Cerussite ($PbCO_3$)	Pb(II)	White	High	22	29	24	–
Litharge (PbO)	Pb(II)	Dusky red to weak red	Very high	–	–	21	19
Plattnerite (PbO_2)	Pb(IV)	Dark reddish brown	Very low	59	62	10	15
Sorbed lead	Pb(II)	Color of matrix	‡	19	9	45	67

Pb—lead, XANES—x-ray absorption near-edge spectroscopy

*Based on linear combination fitting of the derivative XANES sample spectra. These analyses were not conducted for lead pipe 5.
†Presumes each mineral to be in stable redox state
‡Direct comparison of relative solubility of sorbed lead cannot be made.

Dashes indicate the specified lead solid phase either was not present or could not be identified by the analytical methods used in this study.

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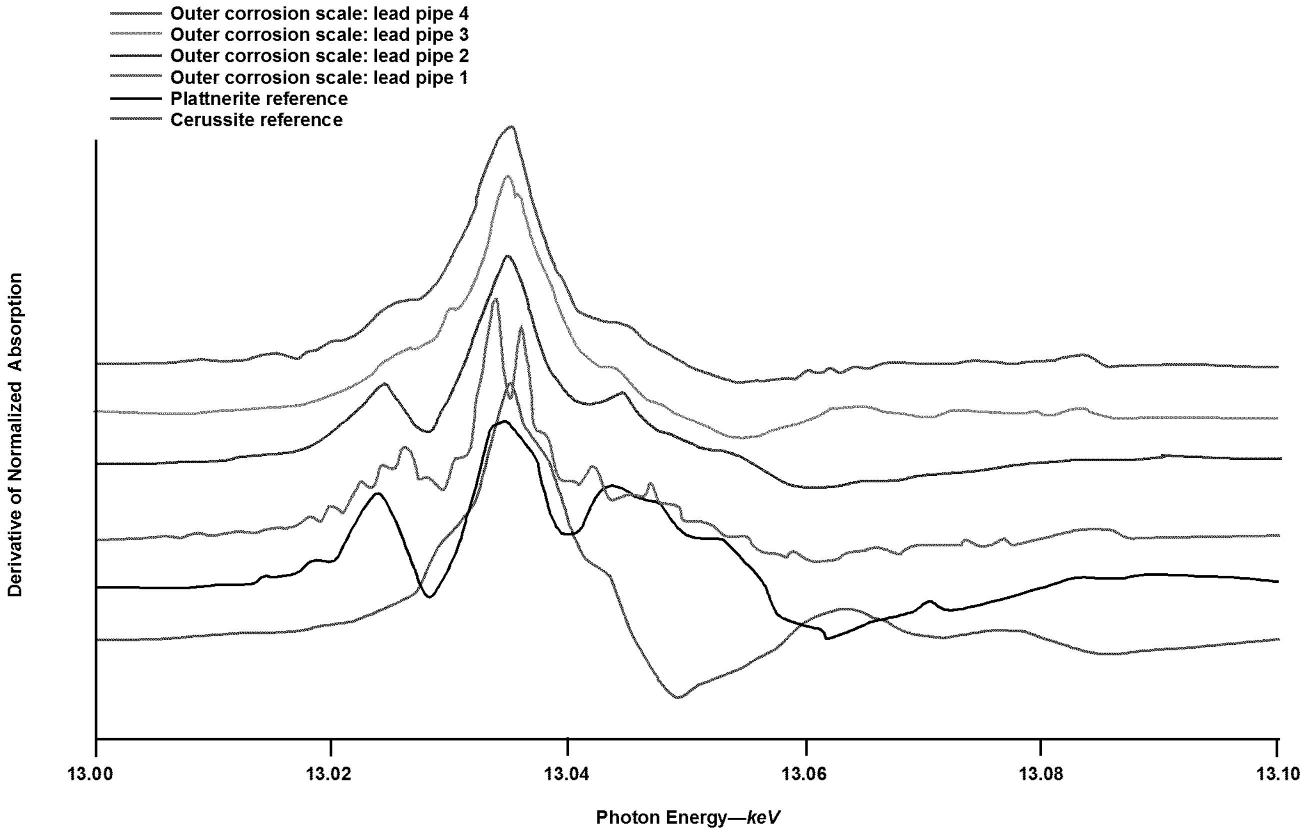
FIGURE 8 Derivative XANES spectra of outer corrosion scale for lead pipes 1, 2, 3, and 4



XANES—x-ray absorption near-edge spectroscopy

Distinct peaks and valleys differentiate between plattnerite [Pb(IV) solid] versus cerussite [Pb(II) solid].

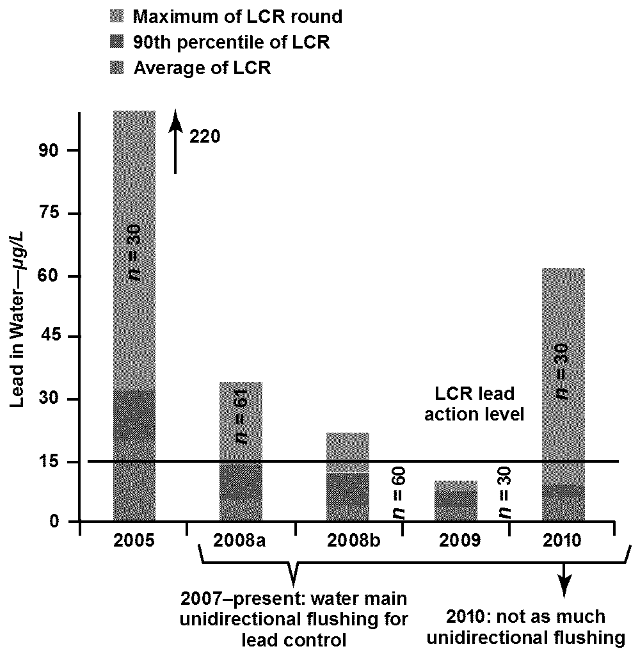
ticulate form (Cantor, 2006c). In addition, the same erratic pattern of lead release occurred up to four years after complete LSL replacement (Cantor, 2006c). The lingering question at that time was, What was holding lead particulates in the plumbing systems for that period of time? The analysis of pipe scales described in this article provides a possible answer by implicating the iron- and manganese-rich scale.

Madison's experience illustrated that removing the source of lead (i.e., full LSL replacement) that resupplies the lead accumulation on manganese- and iron-rich scale can eventually eliminate the significant particulate lead concentration found at the faucets. Marshfield's experience showed that if the lead source remains in the system but the manganese source is diminished through control of dissolved and particulate manganese entering a residence, the erratically high lead concentrations can also be lowered. In other words, purposefully eliminating manganese (and iron) from source water or from existing distribution system pipe-wall scales (e.g., via UDF) can protect public health by helping to control other regulated contaminants in water.

The previous conclusions lead to the following corollaries:

- That it took longer than expected (e.g., more than four years for some sites) to achieve demonstrably lower first-litre water lead levels in Madison following full LSL replacement can be logically explained. Following the removal of the principal lead source, the interior premise-pipe scales were no longer being resupplied by the lead pipe. However, it took time—in some cases, more than four years—for the accumulated lead to be released and then additional time for re-equilibration with the "new" relatively lead-free water. A recent study in Halifax, N.S., similarly implicated iron particulates as an important factor in elevated lead levels following partial LSL replacement (Camera et al, 2013). Conversely, Guelph, Ont., which had a high-alkalinity groundwater that was similar to Madison's water supply except for lower manganese (Muylwyk et al, 2011, 2009; Gilks, 2008) had a full LSL replacement experience that proved successful in rapidly, consistently, and permanently removing any LSL contribution to premise plumbing or exposure. The beneficial effects even included dramatically reduced fully flushed lead levels.
- The Madison data support not only the analysis of the US Environmental Protection Agency (USEPA) Scientific Advisory

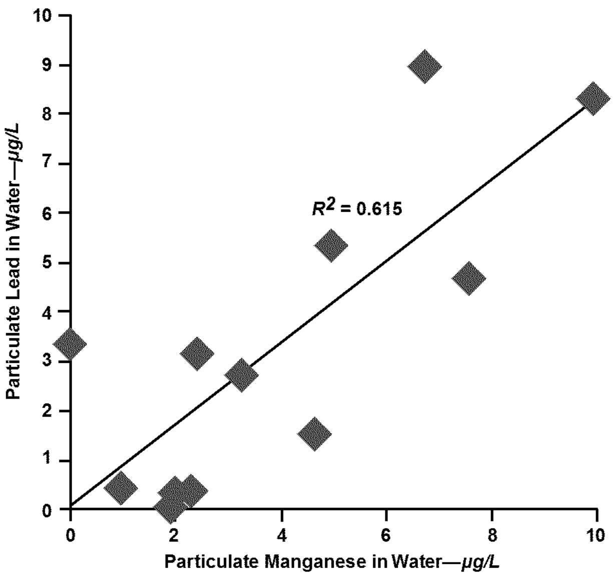
FIGURE 9 LCR sampling results in Marshfield, Wis., and relevant actions by the water utility



LCR—Lead and Copper Rule, *n*—number of sites sampled

Unlike in Madison, lead service lines were not removed in Marshfield. 2008a signifies the first LCR round of the year, and 2008b signifies the second LCR round.

FIGURE 10 Correlation between particulate lead and particulate manganese in samples from 12 Marshfield homes with LSLs



LSL—lead service line

Board (SAB) on the effectiveness of full LSL replacement (USEPA SAB, 2011) but also the strong, positive long-term benefits of the practice. The Madison experience, in which some lead residual remained in interior premise plumbing, should not be misconstrued to underestimate the benefits of eliminating the major lead source. Analysis of several studies of both full and partial LSL replacement led the SAB to recommend that the priority strategy for reducing lead in drinking water should be full LSL removal. Managers of water utilities should strive to fully remove LSLs by budgeting for feasible annual removal goals.

- All sources of iron and manganese scale in a water system should be considered as potential sinks for accumulating and controlling lead release into water. Whereas manganese scale typically develops from a source water constituent, iron scale can develop from either source water composition or from the corrosion of iron pipes (cast-iron water mains and galvanized-iron premise piping). Determining the mineralogy and the chemical content of harvested pipe scales can assist in elucidating the mechanisms of lead accumulation and eventual release into drinking water.

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FOOTNOTES

[1] SDS 2000 theta–theta diffractometer, Scintag, Cupertino, Calif.
[2] JADE Versions 7–9, Materials Data, Livermore, Calif.
[3] PDF-2 database 1995–2002, International Centre for Diffraction Data, Newtown Square, Pa.
[4] Kapton™ tape, DuPont, Wilmington, Del.
[5] IFEFFIT, cars9.uchicago.edu/ifeffit/FAQ/Installing_Ifeffit.
[6] Optima 3000, Perkin-Elmer, Waltham, Mass.

PEER REVIEW

Date of submission: 08/26/2013
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To: Cook, Pat (DEQ)[COOKP@michigan.gov]
Cc: Porter, Andrea[porter.andrea@epa.gov]; Crooks, Jennifer[crooks.jennifer@epa.gov]; Poy, Thomas[poy.thomas@epa.gov]
From: Deltoral, Miguel
Sent: Sat 4/25/2015 2:11:28 PM
Subject: Re: Flint Corrosion Control?

Hi Pat,

I'll be heading out to MI for RTCR tomorrow and won't see email until next Tuesday, but I wanted to follow up on this because Flint has essentially not been using any corrosion control treatment since April 30, 2014 and they have LSLs. Given the very high lead levels found at one home and the pre-flushing happening at Flint, I'm worried that the whole town may have much higher lead levels than the compliance results indicated, since they are using pre-flushing ahead of their compliance sampling.

If the source water lead is non-detect (zero), then according to 141.89(a)(3) they should use zero for that source water value:

"All lead and copper levels measured between the PQL and MDL must be either reported as measured or they can be reported as one-half the PQL specified for lead and copper in paragraph (a)(1)(ii) of this section. All levels below the lead and copper MDLs must be reported as zero."

As far as the treatment determination, there are only two scenarios for a large system to be deemed to have optimized corrosion control without treatment and Flint does not appear to meet either:

The first is at 141.81(b)(3)

Any water system is deemed to have optimized corrosion control if it submits results of tap water monitoring conducted in accordance with § 141.86 and source water monitoring conducted in accordance with § 141.88 that demonstrates for two consecutive 6-month monitoring periods that the difference between the 90th percentile tap water lead level computed under §141.80(c)(3), and the highest source water lead concentration is less than the Practical Quantitation Level for lead specified in § 141.89(a)(1)(ii).

If Flint's highest source water lead was zero, and their 90th percentile was 0.006, then Flint does not meet this criteria, because the difference must be LESS THAN the PQL (i.e., 0.004 or less). 0.006 - 0 = 0.006.

The second is at 141.81(b)(3)(i):

Those systems whose highest source water lead level is below the Method Detection Limit may also be deemed to have optimized corrosion control under this paragraph if the 90th percentile tap water lead level is less than or equal to the Practical Quantitation Level for lead for two consecutive 6-month monitoring periods.

Although Flint's source water lead was non-detect (zero), the 90th percentile lead level is 0.006 which is above the PQL of 0.005, so Flint would not meet this criteria either.

Am I missing something?

Miguel A. Del Toral
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Phone: (312) 886-5253

From: Cook, Pat (DEQ) <COOKP@michigan.gov>
Sent: Friday, April 24, 2015 12:45 PM
To: Deltoral, Miguel
Subject: RE: Flint Corrosion Control?

Total Lead collected from the plant tap on 5/22/14 was zero.

pat

From: Deltoral, Miguel [mailto:deltoral.miguel@epa.gov]
Sent: Friday, April 24, 2015 11:59 AM
To: Cook, Pat (DEQ)
Cc: Poy, Thomas; Porter, Andrea
Subject: Re: Flint Corrosion Control?

What was the source water lead level?

Miguel A. Del Toral

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From: Cook, Pat (DEQ) <COOKP@michigan.gov>
Sent: Friday, April 24, 2015 10:43 AM
To: Deltoral, Miguel
Cc: Poy, Thomas; Porter, Andrea
Subject: RE: Flint Corrosion Control?

Hi Miguel - Flint is currently not practicing corrosion control treatment at the WTP. When they started treating water at their WTP last spring, we placed them on full chart (100 sites) Pb/Cu monitoring for two consecutive 6 month periods. WQ monitoring is also being conducted. The first round of samples after switch-over from DWSD (July 1, 2014 – Dec 31, 2014) had 90th percentiles of 6 ppb for Lead and 110 ppb for Copper. The second round of samples (Jan 1, 2015 – June 30, 2015) is underway with approximately 20 of the 100 sample site results in. The highest lead result out of the 20 received thus far is 13 ppb.

Based on the matrix of recommended corrosion control study components for Large PWS's for both Lead and Copper, there are no additional requirements for the City of Flint based on the levels of lead and copper in the current source water and the results of the lead and copper distribution monitoring. The only provision of the Lead & Copper Rule which classifies the existing treatment of large PWSs as optimized for corrosion control is when the difference between the 90% Pb-TAP and Pb-POE is less than the lead practical quantitative level (PQL) for each six-month period of the initial monitoring program. By definition, the PQL for lead is 0.005 mg/L; and the lead value for the source water used in this determination is the highest source water lead concentration. If this condition is met, then no study or testing is required. We believe this condition has been met for Flint. However, we will re-evaluate this after the 2nd round of 6 month sampling is completed.

If you have any further questions, please contact the Lansing District Supervisor, Steve Busch at (517) 643-2314 or at buschs@michigan.gov.

Have a good (and hopefully warm) weekend!

Patrick Cook, P.E.

Community Drinking Water Unit

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From: Deltoral, Miguel [mailto:deltoral.miguel@epa.gov]
Sent: Thursday, April 23, 2015 12:33 PM
To: Cook, Pat (DEQ)
Cc: Poy, Thomas; Porter, Andrea
Subject: Flint Corrosion Control?

Hi Pat,

What's Flint doing now (post Detroit) for corrosion control treatment?

Miguel A. Del Toral

Regulations Manager

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Phone: (312) 886-5253

To: Citizen name / Ex. 6
Cc: Crooks, Jennifer[crooks.jennifer@epa.gov]
From: Deltoral, Miguel
Sent: Sat 4/25/2015 3:02:44 PM
Subject: Re: Questions
Flint 90th Percentile Lead Results 1992 - 2011.pdf

Hello Citizen name / Ex. 6

I wanted to respond quickly as I will be largely unavailable for the next week or so. I will be out until next Friday (May 1) as I am leaving for a training conference tomorrow and will not return until late Monday night. On Tues/Wed I have all-day meetings and on Thursday I have another trip to Wisconsin.

Lead and copper treatment - We received confirmation yesterday from the Michigan Department of Environmental Quality (MDEQ) that the City of Flint has not had corrosion control treatment in place for lead and copper since they disconnected from Detroit on April 30, 2014. There is an exemption from treatment for systems with low lead levels and we are following up with the State to determine if the city meets that criteria.

Regarding the operational reports - it may be a while before I can look at these.

As far as requesting copies of the lead and copper results for Flint, if you are interested in the most recent results (since the transition to Flint River), you can request the following under the freedom of information act: Copies of all individual lead and copper rule compliance results for the City of Flint collected from January 2014 through April 2015 (use current date).

I am also attaching the historical 90th percentile values for lead compliance monitoring results from when Flint received water from Detroit. The value in the last column is the 90th percentile value, indicating that 90 percent of the compliance results were at or below that number. Please note that the values are in milligrams per liter (mg/L). To adjust the values to micrograms per liter (ug/L), just multiply the value by 1,000, so a value of 0.015 mg/L would be 15 ug/L.

An important note on these test results - I would strongly caution on using these numbers as indicators of what the lead levels are in Flint as EPA is aware that the compliance monitoring being conducted by public water systems with lead service lines is flawed and these reported test results may significantly underestimate the levels of lead that in the water. EPA is working to change the national regulations to address this issue. Also, please note that the sampling protocol used by Flint may also result in the capture of lower lead levels than what is actually in the water and we are following up with the MDEQ on that issue as well.

I just want to stress these issues again so that you are reminded of them because they can provide a false sense of assurance that the lead levels are low which can lead residents not to take precautions against lead exposure from the water.

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From: Citizen name / Ex. 6
Sent: Friday, April 24, 2015 02:26 PM
To: Deltoral, Miguel
Subject: Questions

Miguel,
So I have a couple of questions and not sure if you can answer them but figured it doesn't hurt to ask. I have all the Operational Reports from the city May 2014-February 2015 and I started looking and I don't understand where there are days where zero million gallons were treated. On some of those zero days chemicals were still added. Is this normal? The dates for zero treatment are May 13, 2014, December 7,2014 and December 8, 2014. Other days the water treated drop as low as 6 million gallons. The drop down dates are May 12, 2014 at 8.5 million, November 18, 2014 at 6.0 million, December 6, 2014 at 6.4 million. The next thing I notices is on the first page of the Operational Reports the maximum water treated does not match the maximum number treated on the second page, there is only one month that matches, July 2014.

I can send you all the Operational Reports if you like. I also have copies of the raw water data too if you are interested in looking at those. The Genesee County Health Department finally responded yesterday to my emails in February and told me I should have my kids tested for lead. How is it that they don't know about Citizen name / Ex. 6's lead poisoning already?

I want to ask the city for the documentation on the 90% tests on lead and copper that we were talking about the other day, can you tell me what the actual name is so I can request it.

Here is the link to the KWA page to show you that we will be getting raw water once the pipeline is complete. If you look at the Did you section on the first page it talks about and then again the About link at the top of the page.
http://www.karegnondi.com/

I know this is a lot but I have been busy. I am attaching the first part of the December Operational Report so you can look at what I am talking about. I will send the rest of December in the next email because its too big to send as one document through

gmail. Please let me know if you want the others and the raw water data reports that I do have. I hope you are feeling better. Thank you again for all of your help.
Sincerely
Citizen name / Ex. 6

To: Poy, Thomas[poy.thomas@epa.gov]
Cc: Porter, Andrea[porter.andrea@epa.gov]; Bair, Rita[bair.rita@epa.gov]; Crooks, Jennifer[crooks.jennifer@epa.gov]
From: Deltoral, Miguel
Sent: Mon 4/27/2015 11:53:03 AM
Subject: Flint Sampling Update

Good morning, Tom

Just an update on the Flint sampling so folks know what's going on. As we had initially discussed, the only way to really see what the lead levels are throughout and where the lead is actually coming from at Citizen name / Ex. 6 place is to do sequential sampling prior to the removal of the LSL. I spoke to Citizen name / Ex. 6 and she said that the water was shut off inside her home, so it can actually be turned back on, so Jennifer and I picked up sample bottles from the R5 office and we will be dropping them off at Citizen name / Ex. 6 place today on the way home from the MDEQ RTCR meeting. Pat Cook has confirmed that following the disconnection from Detroit, Flint has not been operating any corrosion control treatment, which is very concerning given the likelihood of LSLs in the city. We do not know how many LSLs there are in Flint and according to Citizen name / Ex. 6 neither does the city. She said that they do not know where any LSLs are, based on their records, so other than what appears to be a very long one at Citizen name / Ex. 6 place, we don't have confirmation of any others at this point. Since they were used extensively here in R5, it is likely there are more. No idea how many, though.

Marc Edwards was kind enough to offer to analyze this round of samples so she will shipping the samples to Marc for analysis. I asked that he measure phosphate as well, so that we have some data on that. As we discussed, R5 will send an additional set of bottles to Citizen name / Ex. 6 for the follow-up monitoring once the LSL is removed. I spoke to Mike Prysby on Friday and he said that the city was going to remove the LSL fully this Wednesday. I also brought a camera with me and will take some pictures while we are at Citizen name / Ex. 6 place as well.

Apparently, according to Citizen name / Ex. 6 the water director appears to be telling residents that the high lead from Citizen name / Ex. 6 residence is from the internal plumbing and that a reporter she was talking to, as well as others, has confirmed that this is what residents are being told. Citizen name / Ex. 6 indicated that the line coming into the home appears to be galvanized pipe. If this is true, it is possible that her portion of the service line, from the home to the property line, is not lead and that the city-owned portion of the service line is the only source of lead here. The sample results should help to clarify where the lead is coming from.

Call me on the cell if you need to: Personal Phone / Ex. 6

Miguel A. Del Toral
Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

To: Deltoral, Miguel[deltoral.miguel@epa.gov]
Cc: Porter, Andrea[porter.andrea@epa.gov]; Crooks, Jennifer[crooks.jennifer@epa.gov]; Poy, Thomas[poy.thomas@epa.gov]; Benzie, Richard (DEQ)[BENZIER@michigan.gov]; Busch, Stephen (DEQ)[BUSCHS@michigan.gov]
From: Cook, Pat (DEQ)
Sent: Fri 5/1/2015 3:38:01 PM
Subject: RE: Flint Corrosion Control?

Hi Miguel - sorry, I should have been more specific in my previous email. The rules you stated below allow large systems to be considered having optimal corrosion control if they have data from two consecutive 6 month monitoring periods that meet specific criteria. DEQ-ODWMA has not made a formal decision as to whether or not the City of Flint meets the exemption criteria or will be required to do a corrosion control study since Flint has only completed one round of 6 month monitoring. The City of Flint's second round of monitoring will be completed by June 30, 2015, and we will make a formal decision at that time. If my memory is correct, this is consistent with the process followed in the early 1990's for large systems when the Pb/Cu rule was first implemented. The Department waits until large systems complete both rounds of full scale, 6 month monitoring before making a decision about optimal corrosion control. If it is determined that Flint has to install corrosion control treatment, the rule allows up to 2 years to complete a study and 2 additional years to install the treatment unless we set a shorter time frame.

As Flint will be switching raw water sources in a just over one year from now, raw water quality will be completely different than what they currently use. Requiring a study at the current time will be of little to no value in the long term control of these chronic contaminants.

Finally, the City of Flint's sampling protocols for lead and copper monitoring comply will all current state and federal requirements. Any required modifications will be implemented at the time when such future regulatory requirements take effect.

Patrick Cook, P.E.

Community Drinking Water Unit

Office of Drinking Water & Municipal Assistance

Michigan Department of Environmental Quality

Phone: (517) 284-6514

cookp@michigan.gov

From: Deltoral, Miguel [mailto:deltoral.miguel@epa.gov]
Sent: Saturday, April 25, 2015 10:11 AM
To: Cook, Pat (DEQ)
Cc: Porter, Andrea; Crooks, Jennifer; Poy, Thomas
Subject: Re: Flint Corrosion Control?

Hi Pat,

I'll be heading out to MI for RTCR tomorrow and won't see email until next Tuesday, but I wanted to follow up on this because Flint has essentially not been using any corrosion control treatment since April 30, 2014 and they have LSLs. Given the very high lead levels found at one home and the pre-flushing happening at Flint, I'm worried that the whole town may have much higher lead levels than the compliance results indicated, since they are using pre-flushing ahead of their compliance sampling.

If the source water lead is non-detect (zero), then according to 141.89(a)(3) they should use zero for that source water value:

"All lead and copper levels measured between the PQL and MDL must be either reported as measured or they can be reported as one-half the PQL specified for lead and copper in paragraph (a)(1)(ii) of this section. All levels below the lead and copper MDLs must be reported as zero."

As far as the treatment determination, there are only two scenarios for a large system to be deemed to have optimized corrosion control without treatment and Flint does not appear to meet either:

The first is at 141.81(b)(3)

Any water system is deemed to have optimized corrosion control if it submits results of tap water monitoring conducted in accordance with § 141.86 and source water monitoring conducted in accordance with § 141.88 that demonstrates for two consecutive 6-month monitoring periods that the difference between the 90th percentile tap water lead level computed under §141.80(c)(3), and the highest source water lead concentration is less than the Practical Quantitation Level for lead specified in § 141.89(a)(1)(ii).

If Flint's highest source water lead was zero, and their 90th percentile was 0.006, then Flint does not meet this criteria, because the difference must be LESS THAN the PQL (i.e., 0.004 or less). 0.006 - 0 = 0.006.

The second is at 141.81(b)(3)(i):

Those systems whose highest source water lead level is below the Method Detection Limit may also be deemed to have optimized corrosion control under this paragraph if the 90th percentile tap water lead level is less than or equal to the Practical Quantitation Level for lead for two consecutive 6-month monitoring periods.

Although Flint's source water lead was non-detect (zero), the 90th percentile lead level is 0.006 which is above the PQL of 0.005, so Flint would not meet this criteria either.

Am I missing something?

Miguel A. Del Toral

Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

From: Cook, Pat (DEQ) <COOKP@michigan.gov>
Sent: Friday, April 24, 2015 12:45 PM
To: Deltoral, Miguel
Subject: RE: Flint Corrosion Control?

Total Lead collected from the plant tap on 5/22/14 was zero.

pat

From: Deltoral, Miguel [mailto:deltoral.miguel@epa.gov]
Sent: Friday, April 24, 2015 11:59 AM
To: Cook, Pat (DEQ)
Cc: Poy, Thomas; Porter, Andrea
Subject: Re: Flint Corrosion Control?

What was the source water lead level?

Miguel A. Del Toral

Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

From: Cook, Pat (DEQ) <COOKP@michigan.gov>
Sent: Friday, April 24, 2015 10:43 AM
To: Deltoral, Miguel
Cc: Poy, Thomas; Porter, Andrea
Subject: RE: Flint Corrosion Control?

Hi Miguel - Flint is currently not practicing corrosion control treatment at the WTP. When they started treating water at their WTP last spring, we placed them on full chart (100 sites) Pb/Cu monitoring for two consecutive 6 month periods. WQ monitoring is also being conducted. The first round of samples after switch-over from DWSD (July 1, 2014 – Dec 31, 2014) had 90th percentiles of 6 ppb for Lead and 110 ppb for Copper. The second round of samples (Jan 1, 2015 – June 30, 2015) is underway with approximately 20 of the 100 sample site results in. The highest lead result out of the 20 received thus far is 13 ppb.

Based on the matrix of recommended corrosion control study components for Large PWS's for both Lead and Copper, there are no additional requirements for the City of Flint based on the levels of lead and copper in the current source water and the results of the lead and copper distribution monitoring. The only provision of the Lead & Copper Rule which classifies the existing treatment of large PWSs as optimized for corrosion control is when the difference between the 90% Pb-TAP and Pb-POE is less than the lead practical quantitative level (PQL) for each six-month period of the initial monitoring program. By definition, the PQL for lead is 0.005 mg/L; and the lead value for the source water used in this determination is the highest source water lead concentration. If this condition is met, then no study or testing is required. We believe this condition has been met for Flint. However, we will re-evaluate this after the 2nd round of 6 month sampling is completed.

If you have any further questions, please contact the Lansing District Supervisor, Steve Busch at (517) 643-2314 or at buschs@michigan.gov.

Have a good (and hopefully warm) weekend!

Patrick Cook, P.E.

Community Drinking Water Unit

Office of Drinking Water & Municipal Assistance

Michigan Department of Environmental Quality

Phone: (517) 284-6514

cookp@michigan.gov

From: Deltoral, Miguel [mailto:deltoral.miguel@epa.gov]
Sent: Thursday, April 23, 2015 12:33 PM
To: Cook, Pat (DEQ)
Cc: Poy, Thomas; Porter, Andrea
Subject: Flint Corrosion Control?

Hi Pat,

What's Flint doing now (post Detroit) for corrosion control treatment?

Miguel A. Del Toral

Regulations Manager

Ground Water and Drinking Water Branch

77 West Jackson Blvd (WG-15J)

Chicago, IL 60604

Phone: (312) 886-5253

To: Poy, Thomas[poy.thomas@epa.gov]
Cc: Bair, Rita[bair.rita@epa.gov]; Porter, Andrea[porter.andrea@epa.gov]; Damato, Nicholas[damato.nicholas@epa.gov]; Shoven, Heather[shoven.heather@epa.gov]
From: Deltoral, Miguel
Sent: Tue 5/5/2015 3:09:19 PM
Subject: Fw: Flint Home

fyi...

Miguel A. Del Toral
Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

From: Marc Edwards <edwardsm@vt.edu>
Sent: Tuesday, May 5, 2015 09:48 AM
To: Deltoral, Miguel
Subject: Flint Home

Miguel,

As per the phone call, I will forward you results of sampling at the Flint Michigan home I told you about.

The lead levels were astronomical, and appear to be associated with sloughing of a lead phosphate corrosion scale.

There is evidence that a lot of the lead originated from galvanized iron pipe.

Marc

To: Deltoral, Miguel[deltoral.miguel@epa.gov]
Cc: Thomas Poy[Poy.Thomas@epa.gov]; Porter, Andrea[porter.andrea@epa.gov]
From: Crooks, Jennifer
Sent: Mon 5/11/2015 1:10:36 PM
Subject: Follow-up from last couple of weeks at Ms. Walters' home

Hi, Miguel. I know you're putting together a summary of your findings over the past couple of weeks, and you're planning to brief us on your findings. I had my check-in with Tom P, and after we discuss your findings, I'm sure you'll have some ideas of next steps. Some questions that came up:

---Should State start adding phosphates/conduct corrosion control now, since the study isn't really feasible since 100% of Flint River for drinking water is just interim;

---Will we verify that Citizen name / Ex. 6 water has much lower lead levels now that her service line is copper?

---Now that Citizen name / Ex. 6 service line has been replaced, you talked about doing some lead sampling at her home to see if there was a lead build-up in her plastic piping within her house.

Thank you, Miguel, for all your time and effort to help Citizen name / Ex. 6 and to figure out if this lead problem is widespread in Flint.

Jen

From: Crooks, Jennifer
Location: R5Metcalfe-ConfRm-R1515B/R5-Metcalfe---15th-Floor; R5WD-ConfCallLine-C/Conference-Call-Line/R5-WATER
Importance: High
Subject: TODAY! Note Time Chg to 11amEST; 10amCST: Michigan semi-annual call
Start Date/Time: Wed 6/10/2015 3:00:00 PM
End Date/Time: Wed 6/10/2015 4:30:00 PM

Agenda is below. If you have additional items to discuss, please let me know.

Heather saw the latest Flint TTHM results on-line. All samples below the TTHM MCL; one site still has an LRAA above the MCL but decreased from 105 ppb in Feb to 93.5 ppb in May. https://www.cityofflint.com/2015/06/01/may-water-testing-results-show-all-locations-are-within-acceptable-limits-for-tthm/

The call-in number is:
Call-in no.: Nonresponsive Conference Code
Code: Nonresponsive Conference Code

Agenda Topics for Michigan Semi-Annual Call on Wednesday June 10, 9am CST

Nonresponsive

sampling site selection criteria, and explanation(s) for any changes in sampling sites.

Nonresponsive

3. Status of Flint
    a. TTHM levels for May--Due to MDEQ district engineer June 10-RECEIVED; see link to results https://www.cityofflint.com/2015/06/01/may-water-testing-results-show-all-locations-are-within-acceptable-limits-for-tthm/
    All samples below the TTHM MCL; one site still has an LRAA above the MCL but decreased from 105 ppb in Feb to 93.5 ppb in May.
    b. Lead in Flint

Our discussions with MDEQ indicate that no phosphates/corrosion control has been added to the system since April 2014 when the source of drinking water changed to the Flint River. We understand that the City is just finishing up its second set of 6-month initial monitoring for lead; where the results will probably warrant a Corrosion Control Study to be conducted. Since Flint has lead service lines, we understand some citizen-requested lead sampling is exceeding the Action Level, and the source of drinking water will be changing again in 2016, so to start a Corrosion Control Study now doesn't make sense. The idea to ask Flint to simply add phosphate may be premature; there are many other issues and factors that must be taken into account which would require a comprehensive look at the water quality and the system before any treatment recommendations can/should be made. Miguel is recommending MDEQ and EPA? approach Flint about formally requesting EPA's Office of Research and Development in Cincinnati support on the lead in Flint drinking water issue, and request that Mike Schock, ORD, and possibly Darren Lytle, ORD, to participate in Flint's drinking water advisory committee so that a comprehensive evaluation on how to proceed can be discussed.

Nonresponsive

Nonresponsive

Thank you!

Jennifer

To: Poy, Thomas[poy.thomas@epa.gov]
Cc: Bair, Rita[bair.rita@epa.gov]; Damato, Nicholas[damato.nicholas@epa.gov]; Porter, Andrea[porter.andrea@epa.gov]; Crooks, Jennifer[crooks.jennifer@epa.gov]
From: Deltoral, Miguel
Sent: Thur 5/28/2015 10:48:34 PM
Subject: Citizen name / Ex. 6 llow-up sampling results
1505006 FINAL EXCEL 28 May 15 1621.xls
1505006 FINAL May 28 15 1621.PDF
1505006_work order.pdf

Attached are the results from Citizen name / Ex. 6 esting following the replacement of her service line. Lead levels look good and copper is less than 1/2 the action level through the new copper service line.

The first 15 samples were the sequential samples (kitchen tap to water main) which came back fine. Sample 16 is the bathroom tap which came back fine. Samples 17 and 18 were from the hot water heater where one result was high, likely from residual particulate lead from before the service line work.

Miguel A. Del Toral
Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

From: Griffin, Sylvia
Sent: Thursday, May 28, 2015 04:29 PM
To: Deltoral, Miguel
Cc: Wroble, Amanda
Subject: FW: 1505006; ICP-MS metals (DW) (Cu, Pb, Zn); Flint, MI

Please see the final results report. Should you encounter any problems with this transmittal, please email or give me a call.

Thank you.

-Sylvia

From: Wroble, Amanda
Sent: Thursday, May 28, 2015 4:26 PM

To: Griffin, Sylvia
Subject: 1505006; ICP-MS metals (DW) (Cu, Pb, Zn); Flint, MI

Amanda Wroble, Ph.D.

Chemist and Sample Coordinator

USEPA Region 5 Chicago Regional Laboratory

536 S. Clark St. ML-10C

Chicago, IL 60605

(312) 353-0375

To: Deltoral, Miguel[deltoral.miguel@epa.gov]
From: Crooks, Jennifer
Sent: Mon 6/1/2015 7:03:32 PM
Subject: Re [redacted] Follow-up sampling results

Miguel--do you want to wait until you have a timeline and summary written up to share these results with the State? Or do you want me to forward to the State now?

Jen

From: Deltoral, Miguel
Sent: Thursday, May 28, 2015 5:48 PM
To: Poy, Thomas
Cc: Bair, Rita; Damato, Nicholas; Porter, Andrea; Crooks, Jennifer
Subject: [redacted] Follow-up sampling results

Attached are the results from [redacted] testing following the replacement of her service line. Lead levels look good and copper is less than 1/2 the action level through the new copper service line.

The first 15 samples were the sequential samples (kitchen tap to water main) which came back fine. Sample 16 is the bathroom tap which came back fine. Samples 17 and 18 were from the hot water heater where one result was high, likely from residual particulate lead from before the service line work.

Miguel A. Del Toral
Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

From: Griffin, Sylvia
Sent: Thursday, May 28, 2015 04:29 PM
To: Deltoral, Miguel
Cc: Wroble, Amanda
Subject: FW: 1505006; ICP-MS metals (DW) (Cu, Pb, Zn); Flint, MI

Please see the final results report. Should you encounter any problems with this transmittal, please email or give me a call.

Thank you.

-Sylvia

From: Wroble, Amanda
Sent: Thursday, May 28, 2015 4:26 PM
To: Griffin, Sylvia
Subject: 1505006; ICP-MS metals (DW) (Cu, Pb, Zn); Flint, MI

Amanda Wroble, Ph.D.

Chemist and Sample Coordinator

USEPA Region 5 Chicago Regional Laboratory

536 S. Clark St. ML-10C

Chicago, IL 60605

(312) 353-0375

To: Deltoral, Miguel[deltoral.miguel@epa.gov]
From: Crooks, Jennifer
Sent: Mon 6/1/2015 7:04:59 PM
Subject: Re Citizen name / Ex. 6 Follow-up sampling results

This is GREAT news, Miguel. So this shows that no lead was inside her plastic plumbing and is not continuing to seep lead into their drinking water, right?

From: Deltoral, Miguel
Sent: Thursday, May 28, 2015 5:48 PM
To: Poy, Thomas
Cc: Bair, Rita; Damato, Nicholas; Porter, Andrea; Crooks, Jennifer
Subject: Citizen name / Ex. 6 Follow-up sampling results

Attached are the results from Citizen name / Ex. 6 testing following the replacement of her service line. Lead levels look good and copper is less than 1/2 the action level through the new copper service line.

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From: Wroble, Amanda
Sent: Thursday, May 28, 2015 4:26 PM
To: Griffin, Sylvia
Subject: 1505006; ICP-MS metals (DW) (Cu, Pb, Zn); Flint, MI

Amanda Wroble, Ph.D.

Chemist and Sample Coordinator

USEPA Region 5 Chicago Regional Laboratory

536 S. Clark St. ML-10C

Chicago, IL 60605

(312) 353-0375

To: Crooks, Jennifer[crooks.jennifer@epa.gov]
From: Deltoral, Miguel
Sent: Tue 6/2/2015 10:37:52 AM
Subject: Re: Citizen name / Ex. 6 Follow-up sampling results

Hi Jen,

Yes, I thought you had done that. I am tied up with RTCR primacy reviews, so I have not had a chance to finish the write-up.

Miguel A. Del Toral
Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

From: Crooks, Jennifer
Sent: Monday, June 1, 2015 02:03 PM
To: Deltoral, Miguel
Subject: Re: Citizen name / Ex. 6 Follow-up sampling results

Miguel--do you want to wait until you have a timeline and summary written up to share these results with the State? Or do you want me to forward to the State now?

Jen

From: Deltoral, Miguel
Sent: Thursday, May 28, 2015 5:48 PM
To: Poy, Thomas
Cc: Bair, Rita; Damato, Nicholas; Porter, Andrea; Crooks, Jennifer
Subject: Citizen name / Ex. 6 Follow-up sampling results

Attached are the results from Citizen name / Ex. 6 testing following the replacement of [redacted] service line. Lead levels look good and copper is less than 1/2 the action level through the new copper service line.

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Miguel A. Del Toral
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Chicago, IL 60604
Phone: (312) 886-5253

From: Griffin, Sylvia
Sent: Thursday, May 28, 2015 04:29 PM
To: Deltoral, Miguel
Cc: Wroble, Amanda
Subject: FW: 1505006; ICP-MS metals (DW) (Cu, Pb, Zn); Flint, MI

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-Sylvia

From: Wroble, Amanda
Sent: Thursday, May 28, 2015 4:26 PM
To: Griffin, Sylvia
Subject: 1505006; ICP-MS metals (DW) (Cu, Pb, Zn); Flint, MI

Amanda Wroble, Ph.D.

Chemist and Sample Coordinator

USEPA Region 5 Chicago Regional Laboratory

536 S. Clark St. ML-10C

Chicago, IL 60605

(312) 353-0375

To: Deltoral, Miguel[deltoral.miguel@epa.gov]
From: Crooks, Jennifer
Sent: Tue 6/2/2015 12:01:01 PM
Subject: RE: Citizen name / Ex. 6 Follow-up sampling results

Thank you, Miguel. Sorry for the miscommunication. Yes, I have been sending the State updates and lab results, but only if I got your OK. So, I'll send these off to the State, and then we'll be caught up.

Jen

From: Deltoral, Miguel
Sent: Tuesday, June 02, 2015 5:38 AM
To: Crooks, Jennifer
Subject: Re: Citizen name / Ex. 6 Follow-up sampling results

Hi Jen,

Yes, I thought you had done that. I am tied up with RTCR primacy reviews, so I have not had a chance to finish the write-up.

Miguel A. Del Toral

Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

From: Crooks, Jennifer
Sent: Monday, June 1, 2015 02:03 PM
To: Deltoral, Miguel
Subject: Re: Citizen name / Ex. 6 Follow-up sampling results

Miguel--do you want to wait until you have a timeline and summary written up to share these results with the State? Or do you want me to forward to the State now?

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To: Poy, Thomas
Cc: Bair, Rita; Damato, Nicholas; Porter, Andrea; Crooks, Jennifer
Subject: Citizen name / Ex. 6 Follow-up sampling results

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Miguel A. Del Toral

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From: Griffin, Sylvia
Sent: Thursday, May 28, 2015 04:29 PM
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Cc: Wroble, Amanda
Subject: FW: 1505006; ICP-MS metals (DW) (Cu, Pb, Zn); Flint, MI

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Sent: Thursday, May 28, 2015 4:26 PM
To: Griffin, Sylvia
Subject: 1505006; ICP-MS metals (DW) (Cu, Pb, Zn); Flint, MI

Amanda Wroble, Ph.D.

Chemist and Sample Coordinator

USEPA Region 5 Chicago Regional Laboratory

536 S. Clark St. ML-10C

Chicago, IL 60605

(312) 353-0375

To: Crooks, Jennifer[crooks.jennifer@epa.gov]
From: Deltoral, Miguel
Sent: Tue 6/2/2015 12:08:25 PM
Subject: Re: Citizen name / Ex. 6 Follow-up sampling results

You don't need my ok for anything, Jen. I think the original concern I had with your sending stuff was that we would talk and then what you sent was not accurate, so I didn't want the State flipping out over incorrect information. I did not want to have to keep sending corrections and I had hoped to have the write-up done some time ago but I keep getting pulled into other things.

Miguel A. Del Toral
Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

From: Crooks, Jennifer
Sent: Tuesday, June 2, 2015 07:01 AM
To: Deltoral, Miguel
Subject: RE: Citizen name / Ex. 6 Follow-up sampling results

Thank you, Miguel. Sorry for the miscommunication. Yes, I have been sending the State updates and lab results, but only if I got your OK. So, I'll send these off to the State, and then we'll be caught up.

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From: Deltoral, Miguel
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To: Crooks, Jennifer
Subject: Re: Citizen name / Ex. 6 ollow-up sampling results

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Miguel A. Del Toral

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Chicago, IL 60604
Phone: (312) 886-5253

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Sent: Monday, June 1, 2015 02:03 PM
To: Deltoral, Miguel
Subject: Re: Citizen name / Ex. 6 Follow-up sampling results

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Jen

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To: Poy, Thomas
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Miguel A. Del Toral

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To: Deltoral, Miguel
Cc: Wroble, Amanda
Subject: FW: 1505006; ICP-MS metals (DW) (Cu, Pb, Zn); Flint, MI

Please see the final results report. Should you encounter any problems with this transmittal, please email or give me a call.

Thank you.

-Sylvia

From: Wroble, Amanda
Sent: Thursday, May 28, 2015 4:26 PM
To: Griffin, Sylvia
Subject: 1505006; ICP-MS metals (DW) (Cu, Pb, Zn); Flint, MI

Amanda Wroble, Ph.D.

Chemist and Sample Coordinator

USEPA Region 5 Chicago Regional Laboratory

536 S. Clark St. ML-10C

Chicago, IL 60605

(312) 353-0375

To: Busch, Stephen (DEQ)[BUSCHS@michigan.gov]; Prysby, Mike (DEQ)[PRYSBYM@michigan.gov]; cookp@michigan.gov[cookp@michigan.gov]
Cc: Richard Benzie[benzier@michigan.gov]; kris philip[philipk@michigan.gov]; Shekter Smith, Liane (DNRE)[SHEKTERL@michigan.gov]
From: Crooks, Jennifer
Sent: Tue 6/2/2015 12:18:26 PM
Subject: FW: Citizen name / Ex. 6 Follow-up sampling results
1505006 FINAL EXCEL 28 May 15 1621.xls
1505006 FINAL May 28 15 1621.PDF
1505006_work order.pdf

FYI from Miguel.

From: Deltoral, Miguel
Sent: Thursday, May 28, 2015 5:49 PM
To: Poy, Thomas
Cc: Bair, Rita; Damato, Nicholas; Porter, Andrea; Crooks, Jennifer
Subject: Citizen name / Ex. 6 Follow-up sampling results

Attached are the results from Citizen name / Ex. 6 testing following the replacement of her service line. Lead levels look good and copper is less than 1/2 the action level through the new copper service line.

The first 15 samples were the sequential samples (kitchen tap to water main) which came back fine. Sample 16 is the bathroom tap which came back fine. Samples 17 and 18 were from the hot water heater where one result was high, likely from residual particulate lead from before the service line work.

Miguel A. Del Toral

Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

From: Griffin, Sylvia
Sent: Thursday, May 28, 2015 04:29 PM
To: Deltoral, Miguel
Cc: Wroble, Amanda

Subject: FW: 1505006; ICP-MS metals (DW) (Cu, Pb, Zn); Flint, MI

Please see the final results report. Should you encounter any problems with this transmittal, please email or give me a call.

Thank you.

-Sylvia

From: Wroble, Amanda
Sent: Thursday, May 28, 2015 4:26 PM
To: Griffin, Sylvia
Subject: 1505006; ICP-MS metals (DW) (Cu, Pb, Zn); Flint, MI

Amanda Wroble, Ph.D.

Chemist and Sample Coordinator

USEPA Region 5 Chicago Regional Laboratory

536 S. Clark St. ML-10C

Chicago, IL 60605

(312) 353-0375

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5 CHICAGO REGIONAL LABORATORY
536 SOUTH CLARK STREET
CHICAGO, ILLINOIS 60605

Date: 5/28/2015

Subject: Review of Region 5 Data for Flint, Michigan

To: Water Division, Drinking Water
77 West Jackson Boulevard
Chicago, IL 60604

From: Amanda Wroble, Chemist
US EPA Region 5 Chicago Regional Laboratory

The data transmitted under this cover memo successfully passed CRL's data review procedures as documented in the current Quality Management Plan and applicable Standard Operating Procedures. In accordance with EPA's *Guidance on Environmental Data Verification and Data Validation* (Document EPA QA/G-8), CRL verified and validated the data but does not perform data quality assessment based on project plans.

This report was reviewed and the information provided herein accurately represents the analysis performed.

X ______________________________

Please contact the analyst with any technical report issues, Amanda Wroble at (312)-353-0375 for sample project concerns, and Sylvia Griffin at (312)-353-9073 with data transmittal questions. Thank you.

Attached are Results for: Flint, Michigan

______________________________ / /
Data Management Coordinator and Date Transmitted

Analyses included in this report:

Metals ICP-MS (DW)

ANALYSIS CASE NARRATIVE

GENERAL INFORMATION

CRL received 18 drinking water samples for copper, lead, and zinc analysis by inductively coupled plasma-mass spectrometry (ICP-MS) on 14 May 2015 that were assigned to work order 1505006. The designated analyst for these samples, Amanda Wroble, can be reached at Personal Phone / Ex. 6

The samples were received unpreserved. Therefore, 2 mL of nitric acid was added to each 1 L sample. At least twenty-four hours elapsed before subsampling began. All holding times were met.

No digestion is required for drinking water samples. Samples were analyzed in batch B15E029 over two runs using CRL SOP METALS001 (EPA Method 200.8), Revision 3. Copper dilutions for samples 1505006-07 thru -09 and a zinc dilution for sample 1505006-17 were reported from Run 2.

SAMPLE ANALYSIS AND RESULTS

The data reported herein meet the data quality objectives referenced in personal email communication with the project manager dated May 12, 2015 and the quality assurance project plan "Impacts on Lead Concentration in Drinking Water Samples Due to Sample Location and Sample Collection Protocols" dated January 20, 2011 referenced therein.

QUALITY CONTROL

All quality control audits were within CRL limits for the requested analytes or did not result in qualification of the data.

Environmental Protection Agency Region5

Chicago Regional Laboratory

536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Water Division, Drinking Water	Project: Flint, Michigan	
77 West Jackson Boulevard	Project Number: [none]	**Reported:**
Chicago IL, 60604	Project Manager: Miguel Del Toral	May-28-15 16:21

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
1	1505006-01	Water	May-13-15 09:00	May-14-15 11:00
2	1505006-02	Water	May-13-15 09:00	May-14-15 11:00
3	1505006-03	Water	May-13-15 09:01	May-14-15 11:00
4	1505006-04	Water	May-13-15 09:01	May-14-15 11:00
5	1505006-05	Water	May-13-15 09:02	May-14-15 11:00
6	1505006-06	Water	May-13-15 09:02	May-14-15 11:00
7	1505006-07	Water	May-13-15 09:03	May-14-15 11:00
8	1505006-08	Water	May-13-15 09:03	May-14-15 11:00
9	1505006-09	Water	May-13-15 09:04	May-14-15 11:00
10	1505006-10	Water	May-13-15 09:04	May-14-15 11:00
11	1505006-11	Water	May-13-15 09:05	May-14-15 11:00
12	1505006-12	Water	May-13-15 09:05	May-14-15 11:00
13	1505006-13	Water	May-13-15 09:07	May-14-15 11:00
14	1505006-14	Water	May-13-15 09:07	May-14-15 11:00
15	1505006-15	Water	May-13-15 09:08	May-14-15 11:00
16	1505006-16	Water	May-13-15 20:15	May-14-15 11:00
17	1505006-17	Water	May-13-15 20:16	May-14-15 11:00
18	1505006-18	Water	May-13-15 21:19	May-14-15 11:00

Water Division, Drinking Water	Project: Flint, Michigan	
77 West Jackson Boulevard	Project Number: [none]	**Reported:**
Chicago IL, 60604	Project Manager: Miguel Del Toral	May-28-15 16:21

Metals by ICP-MS using EPA 200.8 (modified)
US EPA Region 5 Chicago Regional Laboratory

1 (1505006-01) Water Sampled: May-13-15 09:00 Received: May-14-15 11:00

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Lead	**1.30**			0.500	ug/L	1	B15E029	May-19-15	May-19-15
Copper	**13.1**			1.00	"	"	"	"	"
Zinc	**70.9**			10.0	"	"	"	"	"

2 (1505006-02) Water Sampled: May-13-15 09:00 Received: May-14-15 11:00

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Lead	**0.687**			0.500	ug/L	1	B15E029	May-19-15	May-19-15
Copper	**20.1**			1.00	"	"	"	"	"
Zinc	**23.2**			10.0	"	"	"	"	"

3 (1505006-03) Water Sampled: May-13-15 09:01 Received: May-14-15 11:00

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Lead	**3.01**			0.500	ug/L	1	B15E029	May-19-15	May-19-15
Copper	**141**			1.00	"	"	"	"	"
Zinc	**76.8**			10.0	"	"	"	"	"

4 (1505006-04) Water Sampled: May-13-15 09:01 Received: May-14-15 11:00

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Lead	**1.76**			0.500	ug/L	1	B15E029	May-19-15	May-19-15
Copper	**336**			1.00	"	"	"	"	"
Zinc	**45.4**			10.0	"	"	"	"	"

5 (1505006-05) Water Sampled: May-13-15 09:02 Received: May-14-15 11:00

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Lead	**1.17**			0.500	ug/L	1	B15E029	May-19-15	May-19-15
Copper	**419**			1.00	"	"	"	"	"
Zinc	**32.2**			10.0	"	"	"	"	"

Environmental Protection Agency Region5
Chicago Regional Laboratory

536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Water Division, Drinking Water	Project: Flint, Michigan	
77 West Jackson Boulevard	Project Number: [none]	**Reported:**
Chicago IL, 60604	Project Manager: Miguel Del Toral	May-28-15 16:21

Metals by ICP-MS using EPA 200.8 (modified)

US EPA Region 5 Chicago Regional Laboratory

6 (1505006-06) Water Sampled: May-13-15 09:02 Received: May-14-15 11:00

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Lead	**1.03**			0.500	ug/L	1	B15E029	May-19-15	May-19-15
Copper	**463**			1.00	"	"	"	"	"
Zinc	**24.8**			10.0	"	"	"	"	"

7 (1505006-07) Water Sampled: May-13-15 09:03 Received: May-14-15 11:00

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Lead	**0.800**			0.500	ug/L	1	B15E029	May-19-15	May-19-15
Copper	**529**			10.0	"	10	"	"	May-20-15
Zinc	**19.6**			10.0	"	1	"	"	May-19-15

8 (1505006-08) Water Sampled: May-13-15 09:03 Received: May-14-15 11:00

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Lead	**0.666**			0.500	ug/L	1	B15E029	May-19-15	May-19-15
Copper	**554**			10.0	"	10	"	"	May-20-15
Zinc	**14.9**			10.0	"	1	"	"	May-19-15

9 (1505006-09) Water Sampled: May-13-15 09:04 Received: May-14-15 11:00

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Lead	**3.07**			0.500	ug/L	1	B15E029	May-19-15	May-19-15
Copper	**571**			10.0	"	10	"	"	May-20-15
Zinc	**11.6**			10.0	"	1	"	"	May-19-15

10 (1505006-10) Water Sampled: May-13-15 09:04 Received: May-14-15 11:00

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Lead	**3.93**			0.500	ug/L	1	B15E029	May-19-15	May-19-15
Copper	**345**			1.00	"	"	"	"	"
Zinc	**10.3**			10.0	"	"	"	"	"

Environmental Protection Agency Region5
Chicago Regional Laboratory

536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Water Division, Drinking Water	Project: Flint, Michigan	
77 West Jackson Boulevard	Project Number: [none]	**Reported:**
Chicago IL, 60604	Project Manager: Miguel Del Toral	May-28-15 16:21

Metals by ICP-MS using EPA 200.8 (modified)
US EPA Region 5 Chicago Regional Laboratory

11 (1505006-11) Water Sampled: May-13-15 09:05 Received: May-14-15 11:00

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Lead	**1.94**			0.500	ug/L	1	B15E029	May-19-15	May-19-15
Copper	**233**			1.00	"	"	"	"	"
Zinc	**U**			10.0	"	"	"	"	"

12 (1505006-12) Water Sampled: May-13-15 09:05 Received: May-14-15 11:00

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Lead	**1.17**			0.500	ug/L	1	B15E029	May-19-15	May-19-15
Copper	**171**			1.00	"	"	"	"	"
Zinc	**U**			10.0	"	"	"	"	"

13 (1505006-13) Water Sampled: May-13-15 09:07 Received: May-14-15 11:00

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Lead	**0.864**			0.500	ug/L	1	B15E029	May-19-15	May-19-15
Copper	**139**			1.00	"	"	"	"	"
Zinc	**U**			10.0	"	"	"	"	"

14 (1505006-14) Water Sampled: May-13-15 09:07 Received: May-14-15 11:00

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Lead	**0.670**			0.500	ug/L	1	B15E029	May-19-15	May-19-15
Copper	**110**			1.00	"	"	"	"	"
Zinc	**U**			10.0	"	"	"	"	"

15 (1505006-15) Water Sampled: May-13-15 09:08 Received: May-14-15 11:00

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Lead	**0.505**			0.500	ug/L	1	B15E029	May-19-15	May-19-15
Copper	**91.5**			1.00	"	"	"	"	"
Zinc	**U**			10.0	"	"	"	"	"

Environmental Protection Agency Region5
Chicago Regional Laboratory

536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

Water Division, Drinking Water	Project: Flint, Michigan	
77 West Jackson Boulevard	Project Number: [none]	**Reported:**
Chicago IL, 60604	Project Manager: Miguel Del Toral	May-28-15 16:21

Metals by ICP-MS using EPA 200.8 (modified)
US EPA Region 5 Chicago Regional Laboratory

16 (1505006-16) Water Sampled: May-13-15 20:15 Received: May-14-15 11:00

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Lead	**5.52**			0.500	ug/L	1	B15E029	May-19-15	May-19-15
Copper	**29.7**			1.00	"	"	"	"	"
Zinc	**71.3**			10.0	"	"	"	"	"

17 (1505006-17) Water Sampled: May-13-15 20:16 Received: May-14-15 11:00

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Lead	**31.7**			0.500	ug/L	1	B15E029	May-19-15	May-19-15
Copper	**70.4**			1.00	"	"	"	"	"
Zinc	**883**			100	"	10	"	"	May-20-15

18 (1505006-18) Water Sampled: May-13-15 21:19 Received: May-14-15 11:00

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed
Lead	**9.74**			0.500	ug/L	1	B15E029	May-19-15	May-19-15
Copper	**35.0**			1.00	"	"	"	"	"
Zinc	**346**			10.0	"	"	"	"	"

Water Division, Drinking Water	Project: Flint, Michigan	
77 West Jackson Boulevard	Project Number: [none]	**Reported:**
Chicago IL, 60604	Project Manager: Miguel Del Toral	May-28-15 16:21

Metals by ICP-MS using EPA 200.8 (modified) - Quality Control
US EPA Region 5 Chicago Regional Laboratory

Batch B15E029 - 200.8/no digestion

Blank (B15E029-BLK1) **Prepared & Analyzed: May-19-15**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Lead	**U**			0.500	ug/L						
Copper	**U**			1.00	"						
Zinc	**U**			10.0	"						

LCS (B15E029-BS1) **Prepared & Analyzed: May-19-15**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Lead	**18.9**			0.500	ug/L	20.00		94.4%	85-115		
Copper	**18.9**			1.00	"	20.00		94.6%	85-115		
Zinc	**18.9**			10.0	"	20.00		94.5%	85-115		

Duplicate (B15E029-DUP1) **Source: 1505006-01** **Prepared & Analyzed: May-19-15**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Lead	**1.28**			0.500	ug/L		1.30			1.77	20
Copper	**13.0**			1.00	"		13.1			0.326	20
Zinc	**70.9**			10.0	"		70.9			0.0163	20

Duplicate (B15E029-DUP2) **Source: 1505006-11** **Prepared & Analyzed: May-19-15**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Lead	**1.94**			0.500	ug/L		1.94			0.129	20
Copper	**237**			1.00	"		233			1.76	20
Zinc	**8.23**			10.0	"		8.14			1.11	20

Matrix Spike (B15E029-MS1) **Source: 1505006-01** **Prepared & Analyzed: May-19-15**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Lead	**21.2**			0.500	ug/L	20.00	1.30	99.6%	75-125		
Copper	**32.9**			1.00	"	20.00	13.1	99.2%	75-125		
Zinc	**92.3**			10.0	"	20.00	70.9	107%	75-125		

Water Division, Drinking Water 77 West Jackson Boulevard Chicago IL, 60604	Project: Flint, Michigan Project Number: [none] Project Manager: Miguel Del Toral	**Reported:** May-28-15 16:21

Metals by ICP-MS using EPA 200.8 (modified) - Quality Control
US EPA Region 5 Chicago Regional Laboratory

Batch B15E029 - 200.8/no digestion

Matrix Spike (B15E029-MS2) **Source: 1505006-11** **Prepared & Analyzed: May-19-15**

Analyte	Result	Flags / Qualifiers	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Lead	**22.1**			0.500	ug/L	20.00	1.94	101%	75-125		
Copper	**256**			1.00	"	20.00	233	115%	75-125		
Zinc	**28.8**			10.0	"	20.00	8.14	103%	75-125		

Water Division, Drinking Water	Project: Flint, Michigan	
77 West Jackson Boulevard	Project Number: [none]	**Reported:**
Chicago IL, 60604	Project Manager: Miguel Del Toral	May-28-15 16:21

Notes and Definitions

U	Not Detected
NR	Not Reported

Environmental Protection Agency Region 5
Chicago Regional Laboratory

536 South Clark Street, Chicago, IL 60605
Phone:(312)353-8370 Fax:(312)886-2591

WORK ORDER

Printed: 5/20/2015 8:35:08AM

1505006

US EPA Region 5 Chicago Regional Laboratory

Client:	**Water Division, Drinking Water**	**Project Manager:**	**Greg Mitsakopoulos**
Project:	**Flint, Michigan**	**Project Number:**	**[none]**

Report To:

Miguel Del Toral
Water Division, Drinking Water

77 West Jackson Boulevard
Chicago, IL 60604

Phone: (312) 886-5253
Fax: (312) 886-2001

Date Due:	Jul-15-15 15:00 (60 day TAT)		
Received By:	Robert Snyder	Date Received:	May-14-15 11:00
Logged In By:	Robert Snyder	Date Logged In:	May-14-15 16:20

Samples Received at:	17.9°C
Sample tags/labels	Yes
Seals Intact	Yes
Received on ice	No
Paperwork Included	Yes

Analysis	Due	TAT	Expires	Comments
1505006-01 1 [Water] Sampled May-13-15 09:00 (GMT-06:00) Central Time (US & Canada)				
Metals ICP-MS (DW)	Jul-15-15 12:00	60	Nov-09-15 09:00	pH = 6
Metals ICP (DW)	Jul-15-15 12:00	60	Nov-09-15 09:00	pH = 6
1505006-02 2 [Water] Sampled May-13-15 09:00 (GMT-06:00) Central Time (US & Canada)				
Metals ICP (DW)	Jul-15-15 12:00	60	Nov-09-15 09:00	pH = 6
Metals ICP-MS (DW)	Jul-15-15 12:00	60	Nov-09-15 09:00	pH = 6
1505006-03 3 [Water] Sampled May-13-15 09:01 (GMT-06:00) Central Time (US & Canada)				
Metals ICP (DW)	Jul-15-15 12:00	60	Nov-09-15 09:01	pH = 6
Metals ICP-MS (DW)	Jul-15-15 12:00	60	Nov-09-15 09:01	pH = 6
1505006-04 4 [Water] Sampled May-13-15 09:01 (GMT-06:00) Central Time (US & Canada)				
Metals ICP (DW)	Jul-15-15 12:00	60	Nov-09-15 09:01	pH = 6
Metals ICP-MS (DW)	Jul-15-15 12:00	60	Nov-09-15 09:01	pH = 6
1505006-05 5 [Water] Sampled May-13-15 09:02 (GMT-06:00) Central Time (US & Canada)				
Metals ICP (DW)	Jul-15-15 12:00	60	Nov-09-15 09:02	pH = 6
Metals ICP-MS (DW)	Jul-15-15 12:00	60	Nov-09-15 09:02	pH = 6

WORK ORDER **Printed: 5/20/2015 8:35:08AM**

1505006

US EPA Region 5 Chicago Regional Laboratory

Client: **Water Division, Drinking Water** **Project Manager:** **Greg Mitsakopoulos**
Project: **Flint, Michigan** **Project Number:** **[none]**

Analysis	Due	TAT	Expires	Comments
1505006-06 6 [Water] Sampled May-13-15 09:02 (GMT-06:00) Central Time (US & Canada)				
Metals ICP-MS (DW)	Jul-15-15 12:00	60	Nov-09-15 09:02	pH = 6
Metals ICP (DW)	Jul-15-15 12:00	60	Nov-09-15 09:02	pH = 6
1505006-07 7 [Water] Sampled May-13-15 09:03 (GMT-06:00) Central Time (US & Canada)				
Metals ICP (DW)	Jul-15-15 12:00	60	Nov-09-15 09:03	pH = 6
Metals ICP-MS (DW)	Jul-15-15 12:00	60	Nov-09-15 09:03	pH = 6
1505006-08 8 [Water] Sampled May-13-15 09:03 (GMT-06:00) Central Time (US & Canada)				
Metals ICP (DW)	Jul-15-15 12:00	60	Nov-09-15 09:03	pH = 6
Metals ICP-MS (DW)	Jul-15-15 12:00	60	Nov-09-15 09:03	pH = 6
1505006-09 9 [Water] Sampled May-13-15 09:04 (GMT-06:00) Central Time (US & Canada)				
Metals ICP (DW)	Jul-15-15 12:00	60	Nov-09-15 09:04	pH = 6
Metals ICP-MS (DW)	Jul-15-15 12:00	60	Nov-09-15 09:04	pH = 6
1505006-10 10 [Water] Sampled May-13-15 09:04 (GMT-06:00) Central Time (US & Canada)				
Metals ICP-MS (DW)	Jul-15-15 12:00	60	Nov-09-15 09:04	pH = 6
Metals ICP (DW)	Jul-15-15 12:00	60	Nov-09-15 09:04	pH = 6
1505006-11 11 [Water] Sampled May-13-15 09:05 (GMT-06:00) Central Time (US & Canada)				
Metals ICP (DW)	Jul-15-15 12:00	60	Nov-09-15 09:05	pH = 6
Metals ICP-MS (DW)	Jul-15-15 12:00	60	Nov-09-15 09:05	pH = 6
1505006-12 12 [Water] Sampled May-13-15 09:05 (GMT-06:00) Central Time (US & Canada)				
Metals ICP (DW)	Jul-15-15 12:00	60	Nov-09-15 09:05	pH = 6
Metals ICP-MS (DW)	Jul-15-15 12:00	60	Nov-09-15 09:05	pH = 6
1505006-13 13 [Water] Sampled May-13-15 09:07 (GMT-06:00) Central Time (US & Canada)				
Metals ICP (DW)	Jul-15-15 12:00	60	Nov-09-15 09:07	pH = 6
Metals ICP-MS (DW)	Jul-15-15 12:00	60	Nov-09-15 09:07	pH = 6
1505006-14 14 [Water] Sampled May-13-15 09:07 (GMT-06:00) Central Time (US & Canada)				
Metals ICP (DW)	Jul-15-15 12:00	60	Nov-09-15 09:07	pH = 6
Metals ICP-MS (DW)	Jul-15-15 12:00	60	Nov-09-15 09:07	pH = 6

WORK ORDER **Printed: 5/20/2015 8:35:08AM**

1505006

US EPA Region 5 Chicago Regional Laboratory

Client: **Water Division, Drinking Water** **Project Manager:** **Greg Mitsakopoulos**
Project: **Flint, Michigan** **Project Number:** **[none]**

Analysis	Due	TAT	Expires	Comments
1505006-15 15 [Water] Sampled May-13-15 09:08 (GMT-06:00) Central Time (US & Canada)				
Metals ICP (DW)	Jul-15-15 12:00	60	Nov-09-15 09:08	pH = 6
Metals ICP-MS (DW)	Jul-15-15 12:00	60	Nov-09-15 09:08	pH = 6
1505006-16 16 [Water] Sampled May-13-15 20:15 (GMT-06:00) Central Time (US & Canada)				
Metals ICP-MS (DW)	Jul-15-15 12:00	60	Nov-09-15 20:15	pH = 6
Metals ICP (DW)	Jul-15-15 12:00	60	Nov-09-15 20:15	pH = 6
1505006-17 17 [Water] Sampled May-13-15 20:16 (GMT-06:00) Central Time (US & Canada)				
Metals ICP-MS (DW)	Jul-15-15 12:00	60	Nov-09-15 20:16	pH = 6
Metals ICP (DW)	Jul-15-15 12:00	60	Nov-09-15 20:16	pH = 6
1505006-18 18 [Water] Sampled May-13-15 21:19 (GMT-06:00) Central Time (US & Canada)				
Metals ICP (DW)	Jul-15-15 12:00	60	Nov-09-15 21:19	pH = 6
Metals ICP-MS (DW)	Jul-15-15 12:00	60	Nov-09-15 21:19	pH = 6

Reviewed By

Date

To: Busch, Stephen (DEQ)[BUSCHS@michigan.gov]; Prysby, Mike (DEQ)[PRYSBYM@michigan.gov]; cookp@michigan.gov[cookp@michigan.gov]
Cc: Richard Benzie[benzier@michigan.gov]; kris philip[philipk@michigan.gov]; Shekter Smith, Liane (DNRE)[SHEKTERL@michigan.gov]
From: Crooks, Jennifer
Sent: Tue 6/2/2015 12:28:27 PM
Subject: April 27 Flint Sampling Update from Miguel

Mea culpa…. I totally missed this email. Just saw it today. You already know the general information, but here is directly from Miguel.

Jennifer

From: Deltoral, Miguel
Sent: Monday, April 27, 2015 6:53 AM
To: Poy, Thomas
Cc: Porter, Andrea; Bair, Rita; Crooks, Jennifer
Subject: Flint Sampling Update

Good morning, Tom

Just an update on the Flint sampling so folks know what's going on. As we had initially discussed, the only way to really see what the lead levels are throughout and where the lead is actually coming from at Citizen name / Ex. 6 place is to do sequential sampling prior to the removal of the LSL. I spoke to Citizen name / Ex. 6 and she said that the water was shut off inside her home, so it can actually be turned back on, so Jennifer and I picked up sample bottles from the R5 office and we will be dropping them off at Citizen name / Ex. 6 place today on the way home from the MDEQ RTCR meeting. Pat Cook has confirmed that following the disconnection from Detroit, Flint has not been operating any corrosion control treatment, which is very concerning given the likelihood of LSLs in the city. We do not know how many LSLs there are in Flint and according to Citizen name / Ex. 6 neither does the city. She said that they do not know where any LSLs are, based on their records, so other than what appears to be a very long one at Citizen name / Ex. 6 place, we don't have confirmation of any others at this point. Since they were used extensively here in R5, it is likely there are more. No idea how many, though.

Marc Edwards (from Virginia Tech) was kind enough to offer to analyze this round of samples so she will shipping the samples to Marc for analysis. I asked that he measure phosphate as well, so that we have some data on that. As we discussed, R5 will send an additional set of bottles to Citizen name / Ex. 6 for the follow-up monitoring once the LSL is removed. I spoke to Mike Prysby on

Friday and he said that the city was going to remove the LSL fully this Wednesday. I also brought a camera with me and will take some pictures while we are at [redacted] Citizen name / Ex. 6 place as well.

Apparently, according to [redacted] Citizen name / Ex. 6 s, the water director appears to be telling residents that the high lead from [redacted] Citizen name / Ex. 6 residence is from the internal plumbing and that a reporter she was talking to, as well as others, has confirmed that this is what residents are being told. [redacted] Citizen name / Ex. 6 indicated that the line coming into the home appears to be galvanized pipe. If this is true, it is possible that her portion of the service line, from the home to the property line, is not lead and that the city-owned portion of the service line is the only source of lead here. The sample results should help to clarify where the lead is coming from.

Call me on the cell if you need to: [redacted] Personal Phone / Ex. 6

Miguel A. Del Toral

Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

To: Thomas Poy[Poy.Thomas@epa.gov]; Bair, Rita[bair.rita@epa.gov]; Damato, Nicholas[damato.nicholas@epa.gov]; Shoven, Heather[shoven.heather@epa.gov]; Murphy, Thomas[murphy.thomas@epa.gov]; Porter, Andrea[porter.andrea@epa.gov]; Deltoral, Miguel[deltoral.miguel@epa.gov]; Kuefler, Janet[kuefler.janet@epa.gov]; McElhinney, Cary[mcelhinney.cary@epa.gov]
From: Crooks, Jennifer
Sent: Thur 6/4/2015 6:36:38 PM
Subject: DRAFT Agenda for MI Semi-Annual Call next Wed

From my perspective, this is an aggressive/controversial agenda looking at the topics. Please let me know if the wording appears confrontational, etc; or you recommend changes. I plan to send this to the State on Monday morning 9am. So, please provide me with comments by COB Friday (tomorrow). Thank you!! Jen

Agenda Topics for Michigan Semi-Annual Call on Wednesday June 10, 9am CST

Call-in no: EPA call in #

Code: EPA call in #

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Nonresponsive

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a. TTHM levels for May—Due to MDEQ district engineer June 10

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Nonresponsive

Nonresponsive

Jennifer

To: Deltoral, Miguel[deltoral.miguel@epa.gov]
From: Crooks, Jennifer
Sent: Thur 6/4/2015 6:39:47 PM
Subject: Flint: DRAFT Agenda for MI Semi-Annual Call next Wed

Miguel—Flint's possible use of orthophosphates for corrosion control is #3 on the agenda. Are you able to attend? Here or phone is OK.

June 10, 9am CST

From: Crooks, Jennifer
Sent: Thursday, June 04, 2015 1:37 PM
To: Thomas Poy; Bair, Rita; Damato, Nicholas; Shoven, Heather; Murphy, Thomas; Porter, Andrea; Deltoral, Miguel; Kuefler, Janet; McElhinney, Cary
Subject: DRAFT Agenda for MI Semi-Annual Call next Wed

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Nonresponsive

Nonresponsive

Jennifer

To: Kuefler, Janet[kuefler.janet@epa.gov]
From: Crooks, Jennifer
Sent: Thur 6/4/2015 7:01:46 PM
Subject: FW: DRAFT Agenda for MI Semi-Annual Call next Wed

FYI—I spent an hour this morning going thru this agenda item by item with Tom, so each item reflects his thoughts. I've also talked with Heather about item #2. Let me know if you see any holes; you're good at seeing that stuff!

Jen

From: Crooks, Jennifer
Sent: Thursday, June 04, 2015 1:37 PM
To: Thomas Poy; Bair, Rita; Damato, Nicholas; Shoven, Heather; Murphy, Thomas; Porter, Andrea; Deltoral, Miguel; Kuefler, Janet; McElhinney, Cary
Subject: DRAFT Agenda for MI Semi-Annual Call next Wed

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Nonresponsive

Nonresponsive

Jennifer

To: Crooks, Jennifer[crooks.jennifer@epa.gov]
From: Kuefler, Janet
Sent: Thur 6/4/2015 7:27:34 PM
Subject: RE: DRAFT Agenda for MI Semi-Annual Call next Wed

Only thing that jumped out at me is to spell out “bottled water”—some states use BW for “boil water”!

Janet Kuefler

Ground Water and Drinking Water Branch

State Programs Team Leader

United States Environmental Protection Agency, Region 5

77 West Jackson Blvd. (WG-15J)

Chicago, Illinois 60604

(312) 886-0123

kuefler.janet@epa.gov

From: Crooks, Jennifer
Sent: Thursday, June 04, 2015 2:02 PM
To: Kuefler, Janet
Subject: FW: DRAFT Agenda for MI Semi-Annual Call next Wed

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To: Thomas Poy; Bair, Rita; Damato, Nicholas; Shoven, Heather; Murphy, Thomas; Porter, Andrea; Deltoral, Miguel; Kuefler, Janet; McElhinney, Cary
Subject: DRAFT Agenda for MI Semi-Annual Call next Wed

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Nonresponsive

Jennifer

To: Crooks, Jennifer[crooks.jennifer@epa.gov]; Poy, Thomas[poy.thomas@epa.gov]; Bair, Rita[bair.rita@epa.gov]; Damato, Nicholas[damato.nicholas@epa.gov]; Murphy, Thomas[murphy.thomas@epa.gov]; Porter, Andrea[porter.andrea@epa.gov]; Deltoral, Miguel[deltoral.miguel@epa.gov]; Kuefler, Janet[kuefler.janet@epa.gov]; McElhinney, Cary[mcelhinney.cary@epa.gov]
From: Shoven, Heather
Sent: Thur 6/4/2015 7:45:44 PM
Subject: RE: DRAFT Agenda for MI Semi-Annual Call next Wed

Hi Jennifer,

Thank you for the opportunity to review the draft agenda. I made some revisions in red below. Let me know if you have any questions or would like to discuss wording.

Best wishes,

Heather

Heather A. Shoven | Enforcement Team Leader | U.S. Environmental Protection Agency, Region 5

Ground Water and Drinking Water Branch | 77 W. Jackson Blvd (WG-15J) | Chicago, IL 60604 | 312-886-0153

From: Crooks, Jennifer
Sent: Thursday, June 04, 2015 1:37 PM
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Cc: Poy, Thomas[poy.thomas@epa.gov]; Bair, Rita[bair.rita@epa.gov]; Damato, Nicholas[damato.nicholas@epa.gov]; Shoven, Heather[shoven.heather@epa.gov]; Porter, Andrea[porter.andrea@epa.gov]; Deltoral, Miguel[deltoral.miguel@epa.gov]; Kuefler, Janet[kuefler.janet@epa.gov]; McElhinney, Cary[mcelhinney.cary@epa.gov]
From: Murphy, Thomas
Sent: Thur 6/4/2015 8:49:14 PM
Subject: RE: DRAFT Agenda for MI Semi-Annual Call next Wed

Please see my comments in red text and strikethrough below. Thanks.

From: Crooks, Jennifer
Sent: Thursday, June 04, 2015 1:37 PM
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Nonresponsive

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Jennifer

To: Crooks, Jennifer[crooks.jennifer@epa.gov]; Poy, Thomas[poy.thomas@epa.gov]; Bair, Rita[bair.rita@epa.gov]; Damato, Nicholas[damato.nicholas@epa.gov]; Shoven, Heather[shoven.heather@epa.gov]; Murphy, Thomas[murphy.thomas@epa.gov]; Porter, Andrea[porter.andrea@epa.gov]; Kuefler, Janet[kuefler.janet@epa.gov]; McElhinney, Cary[mcelhinney.cary@epa.gov]
From: Deltoral, Miguel
Sent: Thur 6/4/2015 9:19:39 PM
Subject: Re: DRAFT Agenda for MI Semi-Annual Call next Wed

Hi Jen,

I disagree with the recommendation for Flint to simply add phosphate. There are many other issues and factors that have to taken into account which would require a comprehensive look at the water quality and system before any treatment recommendations can/should be made.

Tom - I recommend that we we approach DEQ and Flint about formally requesting ORD support on Flint and adding Mike and possibly Darren to their drinking water advisory committee so that a comprehensive evaluation on how to proceed can be discussed.

Miguel A. Del Toral
Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

From: Crooks, Jennifer
Sent: Thursday, June 4, 2015 01:36 PM
To: Poy, Thomas; Bair, Rita; Damato, Nicholas; Shoven, Heather; Murphy, Thomas; Porter, Andrea; Deltoral, Miguel; Kuefler, Janet; McElhinney, Cary
Subject: DRAFT Agenda for MI Semi-Annual Call next Wed

From my perspective, this is an aggressive/controversial agenda looking at the topics. Please let me know if the wording appears confrontational, etc; or you recommend changes. I plan to send this to the State on Monday morning 9am. So, please provide me with comments by COB Friday (tomorrow). Thank you!! Jen

-

Agenda Topics for Michigan Semi-Annual Call on Wednesday June 10, 9am CST

-

Call-in no: Nonresponsive Conference Code

Code: Nonresponsive Conference Code

1. Changes in Lead Disinvestments and Commitments for FY 2016 ARDP:

a. Consumer notification of tap results at NTNCWSs:

The NCWS program commits to full implementation of the lead consumer notification of tap results requirement. Region 5 will assist in a notification outreach effort in late FY 2015 to remaining 698 NTNCWSs that are not schools/daycares, to begin CY 2016. NCWS program commits to include information on providing lead consumer notice in the annual monitoring letter sent to all NTNCWSs for CY 2016.

b. Collection of Lead samples at NTNCWSs during June – September 2016 timeframe

NCWS program commits to including information in the applicable NTNCWS annual monitoring letters of the requirement to collect their annual/triennial lead sample between June and September only, during CY 2016. The MDEQ currently does not have the capability to track lead sampling compliance within this specific timeframe.

c. Follow-up Actions for NTNCWSs that sample outside of June-September 2015 timeframe

MDEQ commits to providing Region 5 with all CY 2015 lead sample data for all NTNCWSs by March 2016 so that EPA can analyze how many PWSs monitored outside the June through October timeframe. EPA commits to follow-up with MDEQ to discuss follow-up actions.

d. Submittal of the lead and copper reporting form

MDEQ commits to tracking CWSs submittal of the lead and copper reporting form, and commits to issuing violations for failure to submit the lead and copper reporting form for Community Water Supplies. The NCWS program commits to issuing violations for failure to conduct required lead and copper monitoring, but does not commit to issuing violations for failure to submit the lead and copper reporting form. The reporting form provides the address of the sample site, designates sampling site selection criteria, and explanation(s) for any changes in sampling sites.

Nonresponsive

3. Status of Flint

a. TTHM levels for May—Due to MDEQ district engineer June 10

b. Lead in Flint

Our discussions with MDEQ indicate that no phosphates/corrosion control has been added to the system since April 2014 when the source of drinking water changed to the Flint River. We understand that the City is just finishing up its second set of 6-month initial monitoring for lead; where the results will probably warrant a Corrosion Control Study to be conducted. Since Flint has lead service lines, we understand some citizen-requested lead sampling is exceeding the AL, and the source of drinking water will be changing in 2016; the Region suggests a middle-of-the-road approach of MDEQ requesting Flint to begin adding phosphates to the drinking water.

Nonresponsive

Nonresponsive

Jennifer

To: Shekter Smith, Liane (DNRE)[SHEKTERL@michigan.gov]; Richard Benzie[benzier@michigan.gov]; kris philip[philipk@michigan.gov]; cookp@michigan.gov[cookp@michigan.gov]; Busch, Stephen (DEQ)[BUSCHS@michigan.gov]; Prysby, Mike (DEQ)[PRYSBYM@michigan.gov]; DeBruyn, Dana (DEQ)[DebruynD@michigan.gov]; Monosmith, Carrie (DNRE)[MONOSMITHC@michigan.gov]; Dettweiler, Dan (DEQ)[DETTWEILERD@michigan.gov]
Cc: Thomas Poy[Poy.Thomas@epa.gov]; Bair, Rita[bair.rita@epa.gov]; Damato, Nicholas[damato.nicholas@epa.gov]; Shoven, Heather[shoven.heather@epa.gov]; Murphy, Thomas[murphy.thomas@epa.gov]; Porter, Andrea[porter.andrea@epa.gov]; Deltoral, Miguel[deltoral.miguel@epa.gov]; Kuefler, Janet[kuefler.janet@epa.gov]; McElhinney, Cary[mcelhinney.cary@epa.gov]; Noureldin, Mostafa[noureldin.mostafa@epa.gov]
From: Crooks, Jennifer
Sent: Mon 6/8/2015 3:19:23 PM
Subject: Agenda for MI Semi-Annual Call on Wed 6/10 at 10am EST; 9am CST

Good morning! Below is the Agenda I came up with for our semi-annual call this Wed morning. Please let me know if you would like to add additional items for us to discuss. Please note that I have invited Steve Busch,

Mike Prysby and Pat Cook to discuss item no. 3 regarding Flint.

Jennifer

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(Suggested wording) MDEQ commits to requiring CWSs and NTNCWSs to submit the lead and copper reporting form via the annual monitoring letters to each system, tracking CWSs and NTNCWSs submittal of the lead and copper reporting form, and commits to issuing violations for failure to submit the lead and copper reporting form. The reporting form provides the address of the sample site, designates sampling site selection criteria, and explanation(s) for any changes in sampling sites.

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Nonresponsive

Nonresponsive

Jennifer

To: Crooks, Jennifer[crooks.jennifer@epa.gov]
Cc: Prysby, Mike (DEQ)[PRYSBYM@michigan.gov]; Busch, Stephen (DEQ)[BUSCHS@michigan.gov]
From: Cook, Pat (DEQ)
Sent: Mon 6/8/2015 6:26:40 PM
Subject: RE: Agenda for MI Semi-Annual Call on Wed 6/10 at 10am EST; 9am CST

Hi Jennifer – Mike Prysby and Steve Busch will have to lead the Flint discussion since there is a good possibility that I won't be able to attend the call.

Pat Cook

From: Crooks, Jennifer [mailto:crooks.jennifer@epa.gov]
Sent: Monday, June 08, 2015 11:19 AM
To: Shekter Smith, Liane (DEQ); Benzie, Richard (DEQ); Philip, Kris (DEQ); Cook, Pat (DEQ); Busch, Stephen (DEQ); Prysby, Mike (DEQ); DeBruyn, Dana (DEQ); Monosmith, Carrie (DEQ); Dettweiler, Dan (DEQ)
Cc: Poy, Thomas; Bair, Rita; Damato, Nicholas; Shoven, Heather; Murphy, Thomas; Porter, Andrea; Deltoral, Miguel; Kuefler, Janet; McElhinney, Cary; Noureldin, Mostafa
Subject: Agenda for MI Semi-Annual Call on Wed 6/10 at 10am EST; 9am CST
Importance: High

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Nonresponsive

Nonresponsive

Jennifer

From: Crooks, Jennifer
Location: R5Metcalfe-ConfRm-R1515B/R5-Metcalfe---15th-Floor; R5WD-ConfCallLine-C/Conference-Call-Line/R5-WATER
Importance: Normal
Subject: Note Time Chg to 11amEST; 10amCST: Michigan semi-annual call
Start Date/Time: Wed 6/10/2015 3:00:00 PM
End Date/Time: Wed 6/10/2015 4:30:00 PM

Tom Poy just had a conflict arise; I hope the one hour later works for everyone. Agenda is below. If you have additional items to discuss, please let me know.

The call-in number is:
Call-in no.: EPA conference call #
Code: EPA conference call #

Agenda Topics for Michigan Semi-Annual Call on Wednesday June 10, 9am CST

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Nonresponsive

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Nonresponsive

Nonresponsive

Thank you!

Jennifer

To: Cook, Pat (DEQ)[COOKP@michigan.gov]
From: Crooks, Jennifer
Sent: Mon 6/8/2015 6:41:10 PM
Subject: RE: Agenda for MI Semi-Annual Call on Wed 6/10 at 10am EST; 9am CST

Thank you, Pat, for letting me know. Time has changed to 11am EST due to a sudden conflict for Tom Poy; maybe that is better for you?

From: Cook, Pat (DEQ) [mailto:COOKP@michigan.gov]
Sent: Monday, June 08, 2015 1:27 PM
To: Crooks, Jennifer
Cc: Prysby, Mike (DEQ); Busch, Stephen (DEQ)
Subject: RE: Agenda for MI Semi-Annual Call on Wed 6/10 at 10am EST; 9am CST

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To: Shekter Smith, Liane (DEQ); Benzie, Richard (DEQ); Philip, Kris (DEQ); Cook, Pat (DEQ); Busch, Stephen (DEQ); Prysby, Mike (DEQ); DeBruyn, Dana (DEQ); Monosmith, Carrie (DEQ); Dettweiler, Dan (DEQ)
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To: Poy, Thomas[poy.thomas@epa.gov]; Kuefler, Janet[kuefler.janet@epa.gov]; Damato, Nicholas[damato.nicholas@epa.gov]; Shoven, Heather[shoven.heather@epa.gov]; Murphy, Thomas[murphy.thomas@epa.gov]; Bair, Rita[bair.rita@epa.gov]; McElhinney, Cary[mcelhinney.cary@epa.gov]; Pniak, Edward[pniak.edward@epa.gov]; Deltoral, Miguel[deltoral.miguel@epa.gov]
From: Crooks, Jennifer
Sent: Tue 6/16/2015 4:21:23 PM
Subject: Draft Notes from Michigan semi-annual call on 6/10

All--Below are my draft notes from our call last week, June 10, 2015. Thank you all for participating. Please feel free to edit as needed, to make sure I documented our discussion/agreements correctly.

Please see the red highlighted section--I need help on this one.

I only have written down 2 Action Items. Any I missed?

Please provide me changes/edits by Friday COB. Thank you!

Jen

Attendees:
MDEQ: Liane Shekter-Smith, Richard Benzie, Carrie Monosmith, Kris Philip, Dan Dettweiler, Marjorie Rodriguez-Student, Kevin Holdwick, Mike Prysby, Dana DeBruyn, Steve Busch
EPA Region 5: Tom Poy, Rita Bair, Nick Damato, Janet Kuefler, Michele Palmer, Tom Murphy, Heather Shoven, Cary McElhinney, Andrea Porter, Miguel Deltoral, Mostafa Noureldin

Summary:

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STATE: The State found this change in the wording acceptable.

b. Collection of Lead samples at NTNCWSs during June - September 2016 timeframe
(Suggested wording) NCWS program commits to including information in the applicable NTNCWS annual monitoring letters of the requirement to collect their annual/triennial lead sample between June and September only, during CY 2016.

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STATE: The State agreed to providing EPA R5 the raw lead and copper data for all CY 2015. The WaterTrack database does have data, but it can't generate violations. MDEQ doesn't commit to enforcing against 2016 violators in FY 2016. The State said, it is planning on disinvesting in enforcing against these violators due to limited capability of WaterTrack; however, if the State's noncommunity data management capabilities improve during FY 2016, implementation of this disinvestment may become a reality.

d. Submittal of the lead and copper reporting form
(Suggested wording) MDEQ commits to requiring CWSs and NTNCWSs to submit the lead and copper reporting form via the annual monitoring letters to each system, tracking CWSs and NTNCWSs submittal of the lead and copper reporting form, and commits to issuing violations for failure to submit the lead and copper reporting form. The reporting form provides the address of the sample site, designates sampling site selection criteria, and explanation(s) for any changes in sampling sites.

STATE: Dan Dettweiler stated that the NCWS program was not in a position to do this for the NTNCWSs at this time. Tom Murphy asked how does WaterTrack handle/track high lead results? Tom M said there is a truncation issue on the sample location name field--Dan acknowledged that this problem has been identified, and the Department of Technology Management and Budget (DTMB) has been trying to fix this problem, but it is a challenging problem. The sample sites are actually identified during the sanitary survey and are documented in the sanitary survey. The laboratory reports of the analyses clearly states where the sample was taken. The LHD calculates the 90th percentile, and selects the sites for the NTNCWS systems; thus, the oversight for the LCR is good. But, Dan said the requirement to send in the lead and copper reporting form is not currently in the LHD annual monitoring letter sent to each system. The NTNCWSs do not couple this form to the Lead Consumer Notice, as does the CWSs. Kris Philip pointed out that the LHDs select the sample sites, thus when they are calculating the 90th percentile, they are actually double checking the sites with the results.
(I believe we concluded that at this time, the LHDs are actively reviewing the lead and copper results, and the sample locations as they were calculating the 90th percentiles; thus, these activities were acceptable at this time to meet this requirement. The Region would like to add that, at this time, this conclusion would be subject to State's annual audit reviews.)

Kris Philip said that the CWS program is requiring that the systems submit the form, but they are not enforcing whether or not the system submits the form. Often, the CWS will submit the Lead Consumer Notice and the Lead and Copper reporting form together. Kris said if 90%+ are already submitting the forms, then the State will agree to follow-up and enforce this requirement. But, if less than that, will probably be too much of a burden. Kris said they may change the way DEQ is tracking in SDWIS during FY 2016. But, the Region said SDWIS-Prime probably won't be available until 2017 at the earliest.

ACTION: Kris Philip will research with the District Offices to determine the current submittal rate of the lead and copper reporting form; and report back to the Region.

2. Enforcement Update with Heather
   NTNCWSs under Bottled Water agreements due to Arsenic MCL violations:
   Per discussions with Region 5 and the February 2014 EPA/OECA memo, MDEQ has closed the old Arsenic open-ended MCL violations; however, no further quarterly monitoring is being conducted at the (±27) systems that are still under bottled water agreements. Thus, no more arsenic MCL violations will be reported for these systems and these systems will not become priority systems (ETT score of 11 or more) since only one arsenic MCL violation will be reported (5 points) even though they have a longstanding issue with arsenic noncompliance. The Region would like to discuss the pros and cons of placing these PWSs with arsenic MCL violations on quarterly monitoring as required under 40 CFR Section 141.23(c)(7); and brainstorm possible solutions.

   Heather provided an update on how the State is doing in returning ETT systems to compliance; the State is doing very well in achieving its commitment for FY 2015. Heather said the Region is glad to see the State and LHD prioritization of implementation of the drinking water program and NTNCWS schools and daycares.
   Referring to the NTNCWSs under BW agreements that are in violation of the Arsenic MCL, Heather said that since there are no more open-ended MCL violations in SDWIS, that no MCL violations can be reported to SDWIS unless there is monitoring to show the system is in non-compliance. Even though the LHD has indicated that these systems are drinking bottled water for public health protection, the use of bottled water cannot be a permanent solution to the fact that the system's drinking water at the tap continues to exceed the MCL for arsenic. Dan said there are 22 systems, where 8 are schools, that should be conducting quarterly monitoring. Dana said that letters have been sent to these 22 systems to require quarterly sampling for arsenic; these 22 systems are in 10 different counties so the message from the State is consistent. A secondary effect of this new requirement for the systems, may be that they transition to another water source or install treatment sooner.

   The State voiced a concern that multiple quarterly violations could potentially affect the State's relationship with the LHDs financially. Genesee and Oakland Counties have quite a number of noncommunity water systems. Multiple quarterly violations could affect the Dept of Community Health's determination as to whether the LHDs are meeting their minimum program requirements; thus receive full funding for their work with the noncommunity systems for the drinking water program. The LHDs cannot have more than 20% of their systems with violations. The Region wonders how much funding would be cut from a LHD contract if it exceeds the 20% noncompliance level set in the contract?

3. Status of Flint
   a. TTHM levels for May--Due to MDEQ district engineer June 10-RECEIVED; see link to results
      https://www.cityofflint.com/2015/06/01/may-water-testing-results-show-all-locations-are-

within-acceptable-limits-for-tthm/
All samples below the TTHM MCL; one site still has an LRAA above the MCL but decreased from 105 ppb in Feb to 93.5 ppb in May.

Mike Prysby said he is getting ready to issue the construction permit to the City of Flint to install a GAC filter in July, that will remove more TOC to further reduce the potential of developing TTHMs. Mike said he has already issue a construction permit for a transmission line within the City that will help reduce water age.

b. Lead in Flint

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4. Update on WaterTrack to SDWIS-State: The migration of WaterTrack data to SDWIS-State was number 39 on the Dept of Technology Management and Budget's (DTMB) project list last year; this year it is
number 30. It doesn't appear this project has a high priority. Does the State have any new information on the progress of this project?

   Dan said that the migration of WaterTrack data to SDWIS-State has moved to a priority of 26 with DTMB so far this year. But Dan said they are going to take this project out of the que, since Ronda Page has returned to the drinking water program from DTMB. Ronda said she re-estimated DTMB's involvement in this project to be far less than originally thought, so there is no need for any program developers or the tech team. This project will only need the Data Team and the web designers only. Ronda said they can set-up on a new server and migrate the data from WaterTrack to SDWIS-State themselves; in-house. Kris Philip remembers migrating the CWS data to SDWIS-State, so she can be a resource for this project. The parts that are needed to be completed by DTMB could be contracted out. Cary McElhinney said that there is a process of withholding PWSS grant funds and re-directing the funds to a HQ contract with SAIC. Richard Benzie said the process worked well last year when MI used PWSS funds to contract with a HQ contractor to conduct NEEDS survey training.

   ACTION: Jen will follow up with State and Tribal Programs Branch about the process and timing of holding back funds from the PWSS grant for the purpose of contracting with SAIC.

5. Consequences of cutting the State drinking water program to a “minimal program”
Jennifer had a discussion with Richard Benzie regarding the possibility of the Michigan State Legislature looking to have just a minimal drinking water program, meaning only a program with activities that are required by the Federal SDWA. Jennifer ultimately discussed this internally with Tom Poy. The minimal program suggested would cut out Operator Certification, Capacity Development, Plan Review, Cross Connection Control, Source Water Protection, among other programs that are State required. Operator Certification and Capacity Development, while not required by the Federal regulations, do have financial strings attached. And Plan review/construction permits are required by the SRF program for a loan. Any recent communication with the State Legislature that they might proceed and make this possibility a reality?

   Richard and Liane said there is no current threat from the State Legislature to cut the State-funded PWSS program activities. But there is a State-wide impetus to delete old programs and regulations, so this could lead to questioning the purpose of State-funded PWSS program activities. Richard is just being proactive in preparing a justification. Richard remembers a discussion many years ago about what constitutes a “comprehensive drinking water program”. Tom Poy and Jennifer commented in a previous communication with Richard that the EPA PWSS primacy program and the State-funded activities in the drinking water program were meant to complement each other. To support this statement, Jennifer sent Richard some PWSS Priority guidance from the 90's, some preamble language from the 1976 SDWA found by our attorney, and language from Section 142 of the SDWA regulations from 1976 that might assist him in his justification.

6. EPA's Resource Message at the LHD Workshop in April
   From the 2014 analysis of Shared Goals 2013 data, which is compliance data, for noncommunity systems, there are increasing trends of nitrate M/R violations for both NTNCWSs and TNCWSs. We discussed this on the last semi-annual call. Analysis of the 2015 Shared Goals 2014 data (April 2015) shows an improvement--that of decreasing numbers of bacti/nitrate M/R violations.

   However, in light of the upcoming implementation of RTCR in 2016, the question raised here in the Region is:
   Does the State have a plan with the LHDs as to what activities must be prioritized, and what will fall off the plate? Not all LHDs will need to disinvest based upon each LHD's resources, but some poorly funded LHDs may have to disinvest in some activities/drop activities that have no risk to public health.

   Carrie Monosmith said that she met with the RTCR workgroup, comprised of LHD Directors/sanitarians, last fall to identify activities that the state can disinvest in during the next several years as the LHDs begin implementation of RTCR. They could not identify any activity that could be dropped. The main thing that will help the LHDs save time is to get the electronic DWR (eDWR) going, or the CMD portal, which will drastically reduce the LHDs time in inputting laboratory data into WaterTrack/SDWIS-State. From there, they can develop electronic data forms (CROMEER compliant) that the systems can submit.

Thank you!

Jennifer

shekterl@michigan.gov; 'Richard Benzie' <benzier@michigan.gov>; 'kris philip' <philipk@michigan.gov>; 'Monosmith, Carrie (DNRE)' <MONOSMITHC@michigan.gov>; 'DeBruyn, Dana (DEQ)' <DebruynD@michigan.gov>; Dettweiler, Dan (DEQ) <DETTWEILERD@michigan.gov>; Poy, Thomas <poy.thomas@epa.gov>; Kuefler, Janet <kuefler.janet@epa.gov>; Damato, Nicholas <damato.nicholas@epa.gov>; Shoven, Heather <shoven.heather@epa.gov>; Murphy, Thomas <murphy.thomas@epa.gov>; Bair, Rita <bair.rita@epa.gov>; McElhinney, Cary <mcelhinney.cary@epa.gov>; Pniak, Edward <pniak.edward@epa.gov>; 'cookp@michigan.gov'; 'Prysby, Mike (DEQ)' <PRYSBYM@michigan.gov>; Busch, Stephen (DEQ) <BUSCHS@michigan.gov>

To: Deltoral, Miguel[deltoral.miguel@epa.gov]
From: Crooks, Jennifer
Sent: Tue 6/16/2015 4:23:05 PM
Subject: lead discussion with MI last week

Miguel—these are my notes; in blue. Are they accurate?

Jen

3. Status of Flint

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https://www.cityofflint.com/2015/06/01/may-water-testing-results-show-all-locations-are-within-acceptable-limits-for-tthm/

All samples below the TTHM MCL; one site still has an LRAA above the MCL but decreased from 105 ppb in Feb to 93.5 ppb in May.

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END

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From: Kuefler, Janet
Sent: Tue 6/16/2015 4:51:28 PM
Subject: just a few minor items, RE: Draft Notes from Michigan semi-annual call on 6/10

Janet Kuefler
Ground Water and Drinking Water Branch
State Programs Team Leader

United States Environmental Protection Agency, Region 5
77 West Jackson Blvd. (WG-15J)
Chicago, Illinois 60604

(312) 886-0123
kuefler.janet@epa.gov

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Sent: Tuesday, June 16, 2015 11:21 AM
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I only have written down 2 Action Items. Any I missed?

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To: Kuefler, Janet[kuefler.janet@epa.gov]
From: Crooks, Jennifer
Sent: Tue 6/16/2015 5:10:31 PM
Subject: RE: just a few minor items, RE: Draft Notes from Michigan semi-annual call on 6/10

Janet--under 1.d., did I document my conclusion completely? Heather and Tom M are going to quiz me on it tomorrow...
Jen

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Sent: Tuesday, June 16, 2015 11:51 AM
To: Crooks, Jennifer; Poy, Thomas; Damato, Nicholas; Shoven, Heather; Murphy, Thomas; Bair, Rita; McElhinney, Cary; Pniak, Edward; Deltoral, Miguel
Subject: just a few minor items, RE: Draft Notes from Michigan semi-annual call on 6/10

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ACTION: Kris Philip will research with the District Offices to determine the current submittal rate of the lead and copper reporting form at CWS; and report back to the Region.

2. Enforcement Update with Heather

NTNCWSs under Bottled Water agreements due to Arsenic MCL violations:
Per discussions with Region 5 and the February 2014 EPA/OECA memo, MDEQ has closed the old Arsenic open-ended MCL violations; however, no further quarterly monitoring is being conducted at the (±27) systems that are still under bottled water agreements. Thus, no more arsenic MCL violations will be reported for these systems and these systems will not become priority systems (ETT score of 11 or more) since only one arsenic MCL violation will be reported

(5 points) even though they have a longstanding issue with arsenic noncompliance. The Region would like to discuss the pros and cons of placing these PWSs with arsenic MCL violations on quarterly monitoring as required under 40 CFR Section 141.23(c)(7); and brainstorm possible solutions.

Heather provided an update on how the State is doing in returning ETT systems to compliance; the State is doing very well in achieving its commitment for FY 2015. Heather said the Region is glad to see the State and LHD prioritization of implementation of the drinking water program and NTNCWS schools and daycares.
Referring to the NTNCWSs under BW agreements that are in violation of the Arsenic MCL, Heather said that since there are no more open-ended MCL violations in SDWIS, that no MCL violations can be reported to SDWIS unless there is monitoring to show the system is in non-compliance. Even though the LHD has indicated that these systems are drinking bottled water for public health protection, the use of bottled water cannot be a permanent solution to the fact that the system's drinking water at the tap continues to exceed the MCL for arsenic. Dan said there are 22 systems, where 8 are schools, that should be conducting quarterly monitoring. Dana said that letters have been ~~sent~~ drafted? to these 22 systems to require quarterly sampling for arsenic; these 22 systems are in 10 different counties so the message from the State is consistent. A secondary effect of this new requirement for the systems may be that they transition to another water source or install treatment sooner.

The State voiced a concern that multiple quarterly violations could potentially affect the State's relationship with the LHDs financially. Genesee and Oakland Counties have quite a number of noncommunity water systems. Multiple quarterly violations could affect the Dept of Community Health's determination as to whether the LHDs are meeting their minimum program requirements; thus receive full funding for their work with the noncommunity systems for the drinking water program. The LHDs cannot have more than 20% of their systems with violations. The Region wonders how much funding would be cut from a LHD contract if it exceeds the 20% noncompliance level set in the contract?

3. Status of Flint
   a. TTHM levels for May--Due to MDEQ district engineer June 10-RECEIVED; see link to results
   https://www.cityofflint.com/2015/06/01/may-water-testing-results-show-all-locations-are-within-acceptable-limits-for-tthm/
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Our discussions with MDEQ indicate that no phosphates/corrosion control has been added to the system since April 2014 when the source of drinking water changed to the Flint River. We understand that the City is just finishing up its second set of 6-month initial monitoring for lead; where the results will probably warrant a Corrosion Control Study to be conducted. Since Flint has lead service lines, we understand some citizen-requested lead sampling is exceeding the Action Level, and the source of drinking water will be changing again in 2016, so to start a Corrosion Control Study now doesn't make sense. The idea to ask Flint to simply add phosphate may be premature; there are many other issues and factors that must be taken into account which would require a comprehensive look at the water quality and the system before any treatment recommendations can/should be made. Miguel is recommending MDEQ and EPA? approach Flint about formally requesting EPA's Office of Research and Development in Cincinnati support on the lead in Flint drinking water issue, and request that Mike Schock, ORD, and possibly Darren Lytle, ORD, to participate in Flint's drinking water advisory committee so that a comprehensive evaluation on how to proceed can be discussed.

Miguel provided a brief summary of the high lead results found at the residence of Citizen name / Ex. 6 Walters in Flint. Miguel will follow up with a written summary of the work conducted, sample results, and conclusions.
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Miguel said he will send Mike Schock and Darren Lytle's contact information to Steve and Mike. Steve pointed out that the City is following the LCR requirements, and completing the requirements in a timely manner. Miguel's point is that since the LCR was promulgated 20+ years ago, that research and different situations, like Washington D.C., have educated scientists, experts, and regulators that the existing requirements in the LCR may not be as protective as previously thought. Thus, he can only make recommendations as to how to revise sampling protocols. And Miguel acknowledges that it may be another year before these regulation changes are promulgated in the Long-Term Lead and Copper Rule. In December 2015, the NDWAC recommendation is expected.

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4. Update on WaterTrack to SDWIS-State: The migration of WaterTrack data to SDWIS-State was number 39 on the Dept of Technology Management and Budget's (DTMB) project list last year; this year it is number 30. It doesn't appear this project has a high priority. Does the State have any new information on the progress of this project?

Dan said that the migration of WaterTrack data to SDWIS-State has moved to a priority of 26 with DTMB so far this year. But Dan said they are going to take this project out of the queue, since Ronda Page has returned to the drinking water program from DTMB. Ronda said she re-estimated DTMB's involvement in this project to be far less than originally thought, so there is no need for any program developers or the tech team. This project will only need the Data Team and the web designers only. Ronda said they can set-up on a new server and migrate the data from WaterTrack to SDWIS-State themselves; in-house. Kris Philip remembers migrating the CWS data to SDWIS-State, so she can be a resource for this project. The parts that are needed to be completed by DTMB could be contracted out. Cary McElhinney said that there is a process of withholding PWSS grant funds and re-directing the funds to a HQ contract with SAIC. Richard Benzie said the process worked well last year when MI used PWSS funds to contract with a HQ contractor to conduct NEEDS survey training.

ACTION: Jen will follow up with State and Tribal Programs Branch about the process and timing of holding back funds from the PWSS grant for the purpose of contracting with SAIC.

5. Consequences of cutting the State drinking water program to a "minimal program"
   Jennifer had a discussion with Richard Benzie regarding the possibility of the Michigan State Legislature looking to have just a minimal drinking water program, meaning only a program with activities that are required by the Federal SDWA. Jennifer ultimately discussed this internally with Tom Poy. The minimal program suggested would cut out Operator Certification, Capacity Development, Plan Review, Cross Connection Control, Source Water Protection, among other programs that are State required. Operator Certification and Capacity Development, while not required by the Federal regulations, do have financial strings attached. And Plan review/construction permits are required by the SRF program for a loan. Any recent communication with the State Legislature that they might proceed and make this possibility a reality?

   Richard and Liane said there is no current threat from the State Legislature to cut the State-funded PWSS program activities. But there is a State-wide impetus to delete old programs and regulations, so this could lead to questioning the purpose of State-funded PWSS program activities. Richard is just being proactive in preparing a justification. Richard remembers a discussion many years ago about what constitutes a "comprehensive drinking water program". Tom Poy and Jennifer commented in a previous communication with Richard that the EPA PWSS primacy program and the State-funded activities in the drinking water program were meant to complement each other. To support this statement, Jennifer sent Richard some PWSS Priority guidance from the 90's, some preamble language from the 1976 SDWA found by our attorney, and language from Section 142 of the SDWA regulations from 1976 that might assist him in his justification.

6. EPA's Resource Message at the LHD Workshop in April
   From the 2014 analysis of Shared Goals 2013 data, which is compliance data, for noncommunity systems, there are increasing trends of nitrate M/R violations for both NTNCWSs and TNCWSs. We discussed this on the last semi-annual call. Analysis of the 2015 Shared Goals 2014 data (April 2015) shows an improvement--that of decreasing numbers of bacti/nitrate M/R violations.

   However, in light of the upcoming implementation of RTCR in 2016, the question raised here in the Region is:
   Does the State have a plan with the LHDs as to what activities must be prioritized, and what will fall off the plate? Not all LHDs will need to disinvest based upon each LHD's resources, but some

> poorly funded LHDs may have to disinvest in some activities/drop activities that have no risk to public health.
>
> Carrie Monosmith said that she met with the RTCR workgroup, comprised of LHD Directors/sanitarians, last fall to identify activities that the state can disinvest in during the next several years as the LHDs begin implementation of RTCR. They could not identify any activity that could be dropped. The main thing that will help the LHDs save time is to get the electronic DWR (eDWR) going, or the CMD portal, which will drastically reduce the LHDs time in inputting laboratory data into WaterTrack/SDWIS-State. From there, they can develop electronic data forms (CROMEER compliant) that the systems can submit.

Thank you!

Jennifer

shekterl@michigan.gov; 'Richard Benzie' <benzier@michigan.gov>; 'kris philip' <philipk@michigan.gov>; 'Monosmith, Carrie (DNRE)' <MONOSMITHC@michigan.gov>; 'DeBruyn, Dana (DEQ)' <DebruynD@michigan.gov>; Dettweiler, Dan (DEQ) <DETTWEILERD@michigan.gov>; Poy, Thomas <poy.thomas@epa.gov>; Kuefler, Janet <kuefler.janet@epa.gov>; Damato, Nicholas <damato.nicholas@epa.gov>; Shoven, Heather <shoven.heather@epa.gov>; Murphy, Thomas <murphy.thomas@epa.gov>; Bair, Rita <bair.rita@epa.gov>; McElhinney, Cary <mcelhinney.cary@epa.gov>; Pniak, Edward <pniak.edward@epa.gov>; 'cookp@michigan.gov'; 'Prysby, Mike (DEQ)' <PRYSBYM@michigan.gov>; Busch, Stephen (DEQ) <BUSCHS@michigan.gov>

To: Crooks, Jennifer[crooks.jennifer@epa.gov]
From: Kuefler, Janet
Sent: Tue 6/16/2015 5:18:08 PM
Subject: RE: just a few minor items, RE: Draft Notes from Michigan semi-annual call on 6/10

Well, that was the state's conclusion that the LHDs were selecting sites, etc. We didn't say too much about this.

All of these forms really does point to the need for an e-repository at the states!

Janet Kuefler
Ground Water and Drinking Water Branch
State Programs Team Leader

United States Environmental Protection Agency, Region 5
77 West Jackson Blvd. (WG-15J)
Chicago, Illinois 60604

(312) 886-0123
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From: Crooks, Jennifer
Sent: Tuesday, June 16, 2015 12:11 PM
To: Kuefler, Janet
Subject: RE: just a few minor items, RE: Draft Notes from Michigan semi-annual call on 6/10

Janet--under 1.d., did I document my conclusion completely? Heather and Tom M are going to quiz me on it tomorrow…
Jen

From: Kuefler, Janet
Sent: Tuesday, June 16, 2015 11:51 AM
To: Crooks, Jennifer; Poy, Thomas; Damato, Nicholas; Shoven, Heather; Murphy, Thomas; Bair, Rita; McElhinney, Cary; Pniak, Edward; Deltoral, Miguel
Subject: just a few minor items, RE: Draft Notes from Michigan semi-annual call on 6/10

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Subject: Draft Notes from Michigan semi-annual call on 6/10

All--Below are my draft notes from our call last week, June 10, 2015. Thank you all for participating. Please feel free to edit as needed, to make sure I documented our discussion/agreements correctly.

Please see the red highlighted section--I need help on this one.

I only have written down 2 Action Items. Any I missed?

Please provide me changes/edits by Friday COB. Thank you!

Jen

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MDEQ: Liane Shekter-Smith, Richard Benzie, Carrie Monosmith, Kris Philip, Dan Dettweiler, Marjorie Rodriguez-Student, Kevin Holdwick, Mike Prysby, Dana DeBruyn, Steve Busch
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Summary:

1.Changes in Lead Disinvestments and Commitments for FY 2016 ARDP--for discussion: Due to our extreme focus on lead in drinking water, this is the consensus here.

a. Consumer notification of tap results at NTNCWSs:
(Suggested wording) The NCWS program commits to full implementation of the lead consumer notification of tap results requirement, to begin in CY 2016. Region 5 will assist in a notification outreach effort in late FY 2015 to remaining 698 NTNCWSs that are not schools/daycares, to begin providing lead consumer notice in CY 2016. NCWS program

commits to include information on providing lead consumer notice in the annual monitoring letter sent to all NTNCWSs for CY 2016.

STATE: The State found this change in the wording acceptable.

b. Collection of Lead samples at NTNCWSs during June - September 2016 timeframe
(Suggested wording) NCWS program commits to including information in the applicable NTNCWS annual monitoring letters of the requirement to collect their annual/triennial lead sample between June and September only, during CY 2016. The MDEQ NCWS program currently does not have the capability to easily track lead sampling compliance within this specific timeframe.

STATE: The State found this change in the wording acceptable.

c. Follow-up Actions for NTNCWSs that sample outside of June-September 2015 timeframe
(From 5/5/15 call notes w/EPA) MDEQ commits to providing Region 5 with all CY 2015 lead (and copper?) sample data for all NTNCWSs by March 2016 so that EPA can analyze how many PWSs monitored outside the June through October timeframe. EPA commits to follow-up with MDEQ to discuss follow-up actions. JK NOTE: I am guessing that this has already been done, but just wanted to double check that the State has not designated an alternate timeframe, or done system specific documentation as to why the system qualifies for a different timeframe.

STATE: The State agreed to providing EPA R5 the raw lead and copper data for all CY 2015 for all systems, or just NCWS?. The WaterTrack database does have data, but it can't generate violations. MDEQ doesn't commit to enforcing against 2016 violators in FY 2016. The State said, it is planning on disinvesting in enforcing against these violators due to limited capability of WaterTrack; however, if the State's noncommunity data management capabilities improve during FY 2016, implementation of this disinvestment may become a reality.

d. Submittal of the lead and copper reporting form
(Suggested wording) MDEQ commits to requiring CWSs and NTNCWSs to submit the lead and copper reporting form via the annual monitoring letters to each system, tracking CWSs and NTNCWSs submittal of the lead and copper reporting form, and commits to issuing violations for failure to submit the lead and copper reporting form. The reporting form provides the address of the sample site, designates sampling site selection criteria, and explanation(s) for any changes in sampling sites.

STATE: Dan Dettweiler stated that the NCWS program was not in a position to do this for the NTNCWSs at this time. Tom Murphy asked how does WaterTrack handle/track high lead results? Tom M said there is a truncation issue on the sample location name field--Dan acknowledged that this problem has been identified, and the Department of Technology Management and Budget (DTMB) has been trying to fix this problem, but it is a challenging problem. The sample sites are actually identified during the sanitary survey and are documented in the sanitary survey. The laboratory reports of the analyses clearly states where the sample was taken. The LHD calculates the 90th percentile, and selects the sites for the NTNCWS systems; thus, the oversight for the LCR is good. But, Dan said the requirement to send in the lead and copper reporting form is not currently in the LHD annual monitoring letter sent to each system. The

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To: Crooks, Jennifer[crooks.jennifer@epa.gov]
Cc: Shoven, Heather[shoven.heather@epa.gov]
From: Murphy, Thomas
Sent: Wed 6/17/2015 1:24:19 AM
Subject: RE: Draft Notes from Michigan semi-annual call on 6/10

For discussion at our meeting tomorrow (red text below)

From: Crooks, Jennifer
Sent: Tuesday, June 16, 2015 11:21 AM
To: Poy, Thomas; Kuefler, Janet; Damato, Nicholas; Shoven, Heather; Murphy, Thomas; Bair, Rita; McElhinney, Cary; Pniak, Edward; Deltoral, Miguel
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"In lieu of" requiring NTNCWS to submit a lead and copper reporting form, MDEQ needs to begin flagging every NTNCWS sample Lead result above 15 ug/l ("and Cu result above 1.3 mg/l"). LHDs need to begin opening and reviewing each L/C sample result for these systems in WaterTrack (WT) and reviewing the laboratory pdf file report of the analyses , in order to determine whether or not it was taken from a valid sample site, instead of only reviewing the L/C sample summary page for the system, which does not include sample results. , ~~appears to be taken after at least 6 hours of stagnation based on sample collection time (not shown on L/C sample summary page), and multiple samples were not taken from the same tap around the same time.~~

Also, WT needs to re-programed or LHDs need to begin recalculating the 90th percentile correctly where WT used the average of the two highest instead of the highest result where less than 5 samples were collected.

~~(I believe we concluded that at this time, the LHDs are actively reviewing the lead and copper results, and the sample locations as they were calculating the 90th percentiles; thus, these activities were acceptable at this time to meet this requirement. The Region would like to add that, at this time, this conclusion would be subject to State's annual audit reviews.)~~

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Our discussions with MDEQ indicate that no phosphates/corrosion control has been added to the system since April 2014 when the source of drinking water changed to the Flint River. We understand that the City is just finishing up its second set of 6-month initial monitoring for lead; where the results will probably warrant a Corrosion Control Study to be conducted. Since Flint has lead service lines, we understand some citizen-requested lead sampling is exceeding the Action Level, and the source of drinking water will be changing again in 2016, so to start a Corrosion Control Study now doesn't make sense. The idea to ask Flint to simply add phosphate may be premature; there are many other issues and factors that must be taken into account which would require a comprehensive look at the water quality and the system before any treatment recommendations can/should be made. Miguel is recommending MDEQ and EPA? approach Flint about formally requesting EPA's Office of Research and Development in Cincinnati support on the lead in Flint drinking water issue, and request that Mike Schock, ORD, and possibly Darren Lytle, ORD, to participate in Flint's drinking water advisory committee so that a comprehensive evaluation on how to proceed can be discussed.

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Nonresponsive

Nonresponsive

Nonresponsive

Thank you!

Jennifer

shekterl@michigan.gov; 'Richard Benzie' <benzier@michigan.gov>; 'kris philip' <philipk@michigan.gov>; 'Monosmith, Carrie (DNRE)' <MONOSMITHC@michigan.gov>; 'DeBruyn, Dana (DEQ)' <DebruynD@michigan.gov>; Dettweiler, Dan (DEQ) <DETTWEILERD@michigan.gov>; Poy, Thomas <poy.thomas@epa.gov>; Kuefler, Janet <kuefler.janet@epa.gov>; Damato, Nicholas <damato.nicholas@epa.gov>; Shoven, Heather <shoven.heather@epa.gov>; Murphy, Thomas <murphy.thomas@epa.gov>; Bair, Rita <bair.rita@epa.gov>; McElhinney, Cary <mcelhinney.cary@epa.gov>; Pniak, Edward <pniak.edward@epa.gov>; 'cookp@michigan.gov'; 'Prysby, Mike (DEQ)' <PRYSBYM@michigan.gov>; Busch, Stephen (DEQ) <BUSCHS@michigan.gov>

Cc: Shoven, Heather[shoven.heather@epa.gov]
To: Murphy, Thomas[murphy.thomas@epa.gov]
From: Crooks, Jennifer
Sent: Wed 6/17/2015 8:33:03 PM
Subject: Re: Draft Notes from Michigan semi-annual call on 6/10

OK. Sorry for the delay in getting back to you. **Nonresponsive** **Nonresponsive**

So this is what I came up with to send to the State about item 1.d. What do you think? See item in RED--ACTION

Submittal of the lead and copper reporting form

(From the 6/10 agenda) MDEQ commits to requiring CWSs and NTNCWSs to submit the lead and copper reporting form via the annual monitoring letters to each system, tracking CWSs and NTNCWSs submittal of the lead and copper reporting form, and commits to issuing violations for failure to submit the lead and copper reporting form. The reporting form provides the address of the sample site, designates sampling site selection criteria, and explanation(s) for any changes in sampling sites.

STATE: Dan Dettweiler stated that the NCWS program was not in a position to do this for the NTNCWSs at this time. Tom Murphy asked how does WaterTrack handle/track high lead results? Tom M said there is a truncation issue on the sample location name field—Dan acknowledged that this problem has been identified, and the Department of Technology Management and Budget (DTMB) has been trying to fix this problem, but it is a challenging problem. However, sample sites for NTNCWSs are identified by LHDs during the sanitary survey and are documented in the sanitary survey report. The LHDs check the pdf of laboratory results that clearly states where the sample was taken, and calculates the 90th percentile to verify the ALE thus, the oversight for the LCR is good. However, Dan the requirement to send in the lead and copper reporting form is not currently in the LHD annual monitoring letter sent to each system. The NTNCWSs do not couple this form to the Lead Consumer Notice, as does the CWSs. Kris Philip pointed out that the LHDs select the sample sites, thus when they are calculating the 90th percentile, they are actually double checking the sites with the results.

ACTION: From our discussion, I believe we concluded that at this time, the LHDs are actively reviewing the lead and copper results, and the sample locations as they were calculating the 90th percentile; thus, these activities were acceptable at this time to meet this requirement. It was my understanding that the actions described above that are conducted by the LHDs in reviewing the lab results which includes the sample site, and calculating the 90th percentile; were being conducted at ALL the NTNCWSs by the

LHD staff.

However, some others in the room thought that these activities were only to be conducted if there was an ALE, or if any of the samples at a system were over the AL.

Are the above activities conducted by the LHD to review the lab data and sample site information, and then calculate the 90th percentile correct? Could you clarify for what systems get this type of review by the LHD staff?

Kris Philip said that the CWS program is requiring that the systems submit the form, but they are not enforcing whether or not the system submits the form. Often, the CWS will submit the Lead Consumer Notice and the Lead and Copper reporting form together. Kris said if 90%+ are already submitting the forms, then the State will agree to follow-up and enforce this requirement. But, if less than that, will probably be too much of a burden. Kris said they may change the way DEQ is tracking in SDWIS during FY 2016. But, the Region said SDWIS-Prime probably won't be available until 2017 at the earliest.

ACTION: Kris Philip will research with the District Offices to determine the current submittal rate of the lead and copper reporting form; and report back to the Region.

From: Murphy, Thomas
Sent: Wednesday, June 17, 2015 10:25 AM
To: Crooks, Jennifer
Cc: Shoven, Heather
Subject: RE: Draft Notes from Michigan semi-annual call on 6/10

See below -write for our meeting at 10:30 am today. Thanks.

From: Murphy, Thomas
Sent: Tuesday, June 16, 2015 8:24 PM
To: Crooks, Jennifer
Cc: Shoven, Heather
Subject: RE: Draft Notes from Michigan semi-annual call on 6/10

For discussion at our meeting tomorrow (red text below)

From: Crooks, Jennifer
Sent: Tuesday, June 16, 2015 11:21 AM
To: Poy, Thomas; Kuefler, Janet; Damato, Nicholas; Shoven, Heather; Murphy, Thomas; Bair, Rita; McElhinney, Cary; Pniak, Edward; Deltoral, Miguel
Subject: Draft Notes from Michigan semi-annual call on 6/10

All—Below are my draft notes from our call last week, June 10, 2015. Thank you all for participating. Please feel free to edit as needed, to make sure I documented our discussion/agreements correctly.

Please see the red highlighted section—I need help on this one.

I only have written down 2 Action Items. Any I missed?

Please provide me changes/edits by Friday COB. Thank you!

Jen

Attendees:
MDEQ: Liane Shekter-Smith, Richard Benzie, Carrie Monosmith, Kris Philip, Dan Dettweiler, Marjorie Rodriguez-Student, Kevin Holdwick, Mike Prysby, Dana DeBruyn, Steve Busch
EPA Region 5: Tom Poy, Rita Bair, Nick Damato, Janet Kuefler, Michele Palmer, Tom Murphy, Heather Shoven, Cary McElhinney, Andrea Porter, Miguel Deltoral, Mostafa Noureldin

Summary:

1.Changes in Lead Disinvestments and Commitments for FY 2016 ARDP—for discussion: Due to our extreme focus on lead in drinking water, this is the consensus here.

a. Consumer notification of tap results at NTNCWSs:

(Suggested wording) The NCWS program commits to full implementation of the lead consumer notification of tap results requirement, to begin in CY 2016. Region 5 will assist in a notification outreach effort in late FY 2015 to remaining 698 NTNCWSs that are not schools/daycares, to begin providing lead consumer notice in CY 2016. NCWS program commits to include information on providing lead consumer notice in the annual monitoring letter sent to all NTNCWSs for CY 2016.

STATE: The State found this change in the wording acceptable.

b. Collection of Lead samples at NTNCWSs during June – September 2016 timeframe

(Suggested wording) NCWS program commits to including information in the applicable NTNCWS annual monitoring letters of the requirement to collect their annual/triennial lead sample between June and September only, during CY 2016. The MDEQ NCWS program currently does not have the capability to easily track lead sampling compliance within this specific timeframe.

STATE: The State found this change in the wording acceptable.

c. Follow-up Actions for NTNCWSs that sample outside of June-September 2015 timeframe

(From 5/5/15 call notes w/EPA) MDEQ commits to providing Region 5 with all CY 2015 lead (and copper?) sample data for all NTNCWSs by March 2016 so that EPA can analyze how many PWSs monitored outside the June through October timeframe. EPA commits to follow-up with MDEQ to discuss follow-up actions.

STATE: The State agreed to providing EPA R5 the raw lead and copper data for NCWSs for all CY 2015. The WaterTrack database does have data, but it can't generate violations. MDEQ doesn't commit to enforcing against 2016 violators in FY 2016. The State said, it is planning on disinvesting in enforcing against these violators due to limited capability of WaterTrack; however, if the State's noncommunity data management capabilities improve during FY 2016, implementation of this disinvestment may become a reality.

d. Submittal of the lead and copper reporting form

(Suggested wording) MDEQ commits to requiring CWSs and NTNCWSs to submit the lead and copper reporting form via the annual monitoring letters to each system, tracking CWSs and NTNCWSs submittal of the lead and copper reporting form, and commits to issuing violations for failure to submit the lead and copper reporting form. The reporting form provides the address, description (, and specific location at NTNCWSs) of the sample site, designates sampling site selection criteria, and explanation(s) for any changes in sampling sites.

STATE: Dan Dettweiler stated that the NCWS program was not in a position to do this for the NTNCWSs at this time. Tom Murphy asked how does WaterTrack handle/track high lead results? Tom M said there is a truncation issue on the sample location name field—Dan acknowledged that this problem has been identified, and the Department of Technology Management and Budget (DTMB) has been trying to fix this problem, but it is a challenging problem. However, sample sites for NTNCWSs are identified by LHDs ~~The are actually identified by the LHDs~~ during the sanitary survey and are documented in the sanitary survey report. After NTNCWSs have a lead and/or copper action level exceedance (ALE), LHDs check ~~T~~the laboratory pdf results reports of the analyses which clearly states where the sample was taken, and recalculates the 90th percentile to verify the ALE thus, the oversight for the LCR is good .~~, and selects the sites for the NTNCWS systems;~~ But, Dan said the requirement to send in the lead and copper reporting form is not currently in the LHD annual monitoring letter sent to each system. The NTNCWSs do not couple this form to the Lead Consumer Notice, as does the CWSs. Kris Philip pointed out that the LHDs select the sample sites, thus when they are calculating the 90th percentile, they are actually double checking the sites with the results. However, Water Track only allows the calculation of a 90th percentile where, within a group of samples collected at a water system, at least one of the sample results exceeds the action level. Therefore, "In lieu of" requiring NTNCWS to submit a lead and copper reporting form, MDEQ also needs to begin flagging every NTNCWS sample Lead result above 15 ug/l ("and Cu result above 1.3 mg/l"). LHDs need to begin opening and reviewing each L/C sample result for these systems in WaterTrack (WT) and the laboratory pdf file report of the analysis to determine if it was taken from a valid sample site, instead of only reviewing the L/C sample summary page for the system, which does not include sample results.

Also, WT needs to re-programed or LHDs need to begin recalculating the 90th percentile correctly where less than 5 samples were collected and WT used the average of the two highest results instead of the highest result. (two examples R5 has noted are:

MI6120171, Sun Chemical Company
LHD should have reported a Lead 90th percentile value of 114 ug/l (highest of 4 sample results) instead of 84 ug/l for second half of 2011 (2009-2011 CP). System only collected 2 of 4 required L/C samples for 2012-2014 CP. LHD issued system an LCR M/R violation for 2012-2014 CP (and reported a Lead ALE for these samples in WT (90th percentile not provided by WT and not in SDWIS yet). LHD should report a Lead Lead 90th percentile of 25 ug/l, (highest of 2 sample results).

MI8020265, Coca Colo Refreshments
System's Lead ALEs for the first halves of 2012 and 2014 should have been reported with 90th percentile values equal to the highest Lead result of the 4 samples collected during these CPs: 122 ug/l (instead of 86.4 ug/l) for first half of 2012 and 21 ug/l (instead of of 19 ug/l) for the first half of 2014.

~~(I believe we concluded that at this time, the LHDs are actively reviewing the lead and copper results, and the sample locations as they were calculating the 90th percentiles; thus, these activities were acceptable at this time to meet this requirement. The Region would like to add that, at this time, this conclusion would be subject to State's annual audit reviews.)~~

Kris Philip said that the CWS program is requiring that the systems submit the form, but they are not enforcing whether or not the system submits the form. Often, the CWS will submit the Lead Consumer Notice and the Lead and Copper reporting form together. Kris said if 90%+ are already submitting the forms, then the State will agree to follow-up and enforce this requirement. But, if less than that, will probably be too much of a burden. Kris said they may change the way DEQ is tracking in SDWIS during FY 2016. But, the Region said SDWIS-Prime probably won't be available until 2017 at the earliest.

ACTION: Kris Philip will research with the District Offices to determine the current submittal rate of the lead and copper reporting form; and report back to the Region.

2. Enforcement Update with Heather

NTNCWSs under Bottled Water agreements due to Arsenic MCL violations:
Per discussions with Region 5 and the February 2014 EPA/OECA memo, MDEQ has closed the old Arsenic open-ended MCL violations; however, no further quarterly monitoring is being conducted at the (±27) systems that are still under bottled water agreements. Thus, no more arsenic MCL violations will be reported for these systems and these systems will not become priority systems (ETT score of 11 or more) since only one arsenic MCL violation will be reported (5 points) even though they have a longstanding issue with arsenic noncompliance. The Region would like to discuss the pros and cons of placing these PWSs with arsenic MCL violations on quarterly monitoring as required under 40 CFR Section 141.23(c)(7); and brainstorm possible solutions.

Heather provided an update on how the State is doing in returning ETT systems to compliance; the State is doing very well in achieving its commitment for FY 2015. Heather said the Region is glad to see the

State and LHD prioritization of implementation of the drinking water program and NTNCWS schools and daycares.
Referring to the NTNCWSs under BW agreements that are in violation of the Arsenic MCL, Heather said that since there are no more open-ended MCL violations in SDWIS, that no MCL violations can be reported to SDWIS unless there is monitoring to show the system is in non-compliance. Even though the LHD has indicated that these systems are drinking bottled water for public health protection, the use of bottled water cannot be a permanent solution to the fact that the system's drinking water at the tap continues to exceed the MCL for arsenic. Dan said there are 22 systems, where 8 are schools, that should be conducting quarterly monitoring. Dana said that letters have been sent to these 22 systems to require quarterly sampling for arsenic; these 22 systems are in 10 different counties so the message from the State is consistent. A secondary effect of this new requirement for the systems, may be that they transition to another water source or install treatment sooner.

The State voiced a concern that multiple quarterly violations could potentially affect the State's relationship with the LHDs financially. Genesee and Oakland Counties have quite a number of noncommunity water systems. Multiple quarterly violations could affect the Dept of Community Health's determination as to whether the LHDs are meeting their minimum program requirements; thus receive full funding for their work with the noncommunity systems for the drinking water program. The LHDs cannot have more than 20% of their systems with violations. The Region wonders how much funding would be cut from a LHD contract if it exceeds the 20% noncompliance level set in the contract?

3. Status of Flint

a. TTHM levels for May—Due to MDEQ district engineer June 10-RECEIVED; see link to results

https://www.cityofflint.com/2015/06/01/may-water-testing-results-show-all-locations-are-within-acceptable-limits-for-tthm/
All samples below the TTHM MCL; one site still has an LRAA above the MCL but decreased from 105 ppb in Feb to 93.5 ppb in May.

Mike Prysby said he is getting ready to issue the construction permit to the City of Flint to install a GAC filter in July, that will remove more TOC to further reduce the potential of developing TTHMs. Mike said he has already issue a construction permit for a transmission line within the City that will help reduce water age.

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4. Update on WaterTrack to SDWIS-State: The migration of WaterTrack data to SDWIS-State was number 39 on the Dept of Technology Management and Budget's (DTMB) project list last year; this year it is

number 30. It doesn't appear this project has a high priority. Does the State have any new information on the progress of this project?

Dan said that the migration of WaterTrack data to SDWIS-State has moved to a priority of 26 with DTMB so far this year. But Dan said they are going to take this project out of the que, since Ronda Page has returned to the drinking water program from DTMB. Ronda said she re-estimated DTMB's involvement in this project to be far less than originally thought, so there is no need for any program developers or the tech team. This project will only need the Data Team and the web designers only. Ronda said they can set-up on a new server and migrate the data from WaterTrack to SDWIS-State themselves; in-house. Kris Philip remembers migrating the CWS data to SDWIS-State, so she can be a resource for this project. The parts that are needed to be completed by DTMB could be contracted out. Cary McElhinney said that there is a process of withholding PWSS grant funds and re-directing the funds to a HQ contract with SAIC. Richard Benzie said the process worked well last year when MI used PWSS funds to contract with a HQ contractor to conduct NEEDS survey training.

ACTION: Jen will follow up with State and Tribal Programs Branch about the process and timing of holding back funds from the PWSS grant for the purpose of contracting with SAIC.

5. Consequences of cutting the State drinking water program to a "minimal program"

Jennifer had a discussion with Richard Benzie regarding the possibility of the Michigan State Legislature looking to have just a minimal drinking water program, meaning only a program with activities that are required by the Federal SDWA. Jennifer ultimately discussed this internally with Tom Poy. The minimal program suggested would cut out Operator Certification, Capacity Development, Plan Review, Cross Connection Control, Source Water Protection, among other programs that are State required. Operator Certification and Capacity Development, while not required by the Federal regulations, do have financial strings attached. And Plan review/construction permits are required by the SRF program for a loan. Any recent communication with the State Legislature that they might proceed and make this possibility a reality?

Richard and Liane said there is no current threat from the State Legislature to cut the State-funded PWSS program activities. But there is a State-wide impetus to delete old programs and regulations, so this could lead to questioning the purpose of State-funded PWSS program activities. Richard is just being proactive in preparing a justification. Richard remembers a discussion many years ago about what constitutes a "comprehensive drinking water program". Tom Poy and Jennifer commented in a previous communication with Richard that the EPA PWSS primacy program and the State-funded activities in the drinking water program were meant to complement each other. To support this statement, Jennifer sent Richard some PWSS Priority guidance from the 90's, some preamble language from the 1976 SDWA found by our attorney, and language from Section 142 of the SDWA regulations from 1976 that might assist him in his justification.

6. EPA's Resource Message at the LHD Workshop in April

From the 2014 analysis of Shared Goals 2013 data, which is compliance data, for noncommunity systems, there are increasing trends of nitrate M/R violations for both NTNCWSs and TNCWSs. We discussed this on the last semi-annual call. Analysis of the 2015 Shared Goals 2014 data (April 2015) shows an improvement—that of decreasing numbers of bacti/nitrate M/R violations.

However, in light of the upcoming implementation of RTCR in 2016, the question raised here in the Region is:
Does the State have a plan with the LHDs as to what activities must be prioritized, and what will fall off the plate? Not all LHDs will need to disinvest based upon each LHD's resources, but some poorly funded LHDs may have to disinvest in some activities/drop activities that have no risk to public health.

Carrie Monosmith said that she met with the RTCR workgroup, comprised of LHD Directors/sanitarians, last fall to identify activities that the state can disinvest in during the next several years as the LHDs begin implementation of RTCR. They could not identify any activity that could be dropped. The main thing that will help the LHDs save time is to get the electronic DWR (eDWR) going, or the CMD portal, which will drastically reduce the LHDs time in inputting laboratory data into WaterTrack/SDWIS-State. From there, they can develop electronic data forms (CROMEER compliant) that the systems can submit.

Thank you!

Jennifer

shekterl@michigan.gov; 'Richard Benzie' <benzier@michigan.gov>; 'kris philip' <philipk@michigan.gov>; 'Monosmith, Carrie (DNRE)' <MONOSMITHC@michigan.gov>; 'DeBruyn, Dana (DEQ)' <DebruynD@michigan.gov>; Dettweiler, Dan (DEQ) <DETTWEILERD@michigan.gov>; Poy, Thomas <poy.thomas@epa.gov>; Kuefler, Janet <kuefler.janet@epa.gov>; Damato, Nicholas <damato.nicholas@epa.gov>; Shoven, Heather <shoven.heather@epa.gov>; Murphy, Thomas <murphy.thomas@epa.gov>; Bair, Rita <bair.rita@epa.gov>; McElhinney, Cary <mcelhinney.cary@epa.gov>; Pniak, Edward <pniak.edward@epa.gov>; 'cookp@michigan.gov'; 'Prysby, Mike (DEQ)' <PRYSBYM@michigan.gov>; Busch, Stephen (DEQ) <BUSCHS@michigan.gov>

To: Crooks, Jennifer[crooks.jennifer@epa.gov]
Cc: Murphy, Thomas[murphy.thomas@epa.gov]
From: Shoven, Heather
Sent: Wed 6/17/2015 9:16:42 PM
Subject: FW: Draft Notes from Michigan semi-annual call on 6/10

Thanks Jennifer. See my suggested revisions in green and strikeout below.

Best wishes,

Heather

Heather A. Shoven | Enforcement Team Leader | U.S. Environmental Protection Agency, Region 5

Ground Water and Drinking Water Branch | 77 W. Jackson Blvd (WG-15J) | Chicago, IL 60604 | 312-886-0153

From: Crooks, Jennifer
Sent: Wednesday, June 17, 2015 3:33 PM
To: Murphy, Thomas
Cc: Shoven, Heather
Subject: Re: Draft Notes from Michigan semi-annual call on 6/10

OK. Sorry for the delay in getting back to you. I was on a call with Andy Lausted in STPB and had to get something out to Mike Baker.

So this is what I came up with to send to the State about item 1.d. What do you think? See item in RED--ACTION

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ACTION: From our discussion, I believe we concluded that at this time, the LHDs are actively reviewing the lead and copper results and the sample locations when they calculate the 90th percentile to ensure proper LCR monitoring is conducted by **ALL** NTNCWSs. ~~thus, these activities were acceptable at this time to meet this requirement~~. ~~It was my understanding that the actions described above that are conducted by the LHDs in reviewing the lab results which includes the sample site, and calculating the 90th percentile; were being conducted at **ALL** the NTNCWSs by the LHD staff. However, some others in the room thought that~~ Is that correct? Or are these activities ~~were~~ only ~~to be~~ conducted if there is an ALE, or if any of the samples at a system are over the AL? ~~Are the above activities conducted by the LHD to review the lab data and sample site information, and then calculate the 90th percentile correct?~~ Could MDEQ clarify ~~for what~~ which systems get this type of review by the LHD staff?

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Cc: Shoven, Heather
Subject: RE: Draft Notes from Michigan semi-annual call on 6/10

For discussion at our meeting tomorrow (red text below)

From: Crooks, Jennifer
Sent: Tuesday, June 16, 2015 11:21 AM
To: Poy, Thomas; Kuefler, Janet; Damato, Nicholas; Shoven, Heather; Murphy, Thomas; Bair, Rita; McElhinney, Cary; Pniak, Edward; Deltoral, Miguel
Subject: Draft Notes from Michigan semi-annual call on 6/10

All—Below are my draft notes from our call last week, June 10, 2015. Thank you all for participating. Please feel free to edit as needed, to make sure I documented our discussion/agreements correctly.

Please see the red highlighted section—I need help on this one.

I only have written down 2 Action Items. Any I missed?

Please provide me changes/edits by Friday COB. Thank you!

Jen

Attendees:

MDEQ: Liane Shekter-Smith, Richard Benzie, Carrie Monosmith, Kris Philip, Dan Dettweiler, Marjorie Rodriguez-Student, Kevin Holdwick, Mike Prysby, Dana DeBruyn, Steve Busch

EPA Region 5: Tom Poy, Rita Bair, Nick Damato, Janet Kuefler, Michele Palmer, Tom Murphy, Heather Shoven, Cary McElhinney, Andrea Porter, Miguel Deltoral, Mostafa Noureldin

Summary:

1.Changes in Lead Disinvestments and Commitments for FY 2016 ARDP—for discussion: Due to our extreme focus on lead in drinking water, this is the consensus here.

Nonresponsive

Nonresponsive

d. Submittal of the lead and copper reporting form

(Suggested wording) MDEQ commits to requiring CWSs and NTNCWSs to submit the lead and copper reporting form via the annual monitoring letters to each system, tracking CWSs and NTNCWSs submittal of the lead and copper reporting form, and commits to issuing violations for failure to submit the lead and copper reporting form. The reporting form provides the address, description (, and specific location at NTNCWSs) of the sample site, designates sampling site selection criteria, and explanation(s) for any changes in sampling sites.

STATE: Dan Dettweiler stated that the NCWS program was not in a position to do this for the NTNCWSs at this time. Tom Murphy asked how does WaterTrack handle/track high lead results? Tom M said there is a truncation issue on the sample location name field—Dan acknowledged that this problem has been identified, and the Department of Technology Management and Budget (DTMB) has been trying to fix this problem, but it is a challenging problem. However, sample sites for NTNCWSs are identified by LHDs ~~The are actually identified by the LHDs~~ during the sanitary survey and are documented in the sanitary survey report. After NTNCWSs have a lead and/or copper action level exceedance (ALE), LHDs check ~~T~~the laboratory pdf results reports of the analyses which clearly states where the sample was taken, and recalculates the 90th percentile to verify the ALE thus, the oversight for the LCR is good .~~, and selects the sites for the NTNCWS systems;~~ But, Dan said the requirement to send in the lead and copper reporting form is not currently in the LHD annual monitoring letter sent to each system. The NTNCWSs do not couple this form to the Lead Consumer Notice, as does the CWSs. Kris Philip pointed out that the LHDs select the sample sites, thus when they are calculating the 90th percentile, they are actually double checking the sites with the results. However, Water Track only allows the calculation of a 90th percentile where, within a group of samples collected at a water system, at least one of the sample results exceeds the action level. Therefore, "In lieu of" requiring NTNCWS to submit a lead and copper reporting form, MDEQ also needs to begin flagging every NTNCWS sample Lead result above 15 ug/l ("and Cu result above 1.3 mg/l"). LHDs need to begin opening and reviewing each L/C sample result for these systems in WaterTrack (WT) and the laboratory pdf file report of the analysis to determine if it was taken from a valid sample site, instead of only reviewing the L/C sample summary page for the system, which does not include sample results.

Also, WT needs to re-programed or LHDs need to begin recalculating the 90th percentile correctly where less than 5 samples were collected and WT used the average of the two highest results instead of the highest result. (two examples R5 has noted are:

MI6120171, Sun Chemical Company

LHD should have reported a Lead 90th percentile value of 114 ug/l (highest of 4 sample results) instead of 84 ug/l for second half of 2011 (2009-2011 CP). System only collected 2 of 4 required L/C samples for 2012-2014 CP. LHD issued system an LCR M/R violation for 2012-2014 CP (and reported a Lead ALE for these samples in WT (90th percentile not provided by WT and not in SDWIS yet). LHD should report a Lead Lead 90th percentile of 25 ug/l, (highest of 2 sample results).

MI8020265, Coca Colo Refreshments

System's Lead ALEs for the first halves of 2012 and 2014 should have been reported with 90th percentile values equal to the highest Lead result of the 4 samples collected during these CPs: 122 ug/l (instead of 86.4 ug/l) for first half of 2012 and 21 ug/l (instead of of 19 ug/l) for the first half of 2014.

~~(I believe we concluded that at this time, the LHDs are actively reviewing the lead and copper results, and the sample locations as they were calculating the 90th percentiles; thus, these activities were acceptable at this time to meet this requirement. The Region would like to add that, at this time, this conclusion would be subject to State's annual audit reviews.)~~

Kris Philip said that the CWS program is requiring that the systems submit the form, but they are not enforcing whether or not the system submits the form. Often, the CWS will submit the Lead Consumer Notice and the Lead and Copper reporting form together. Kris said if 90%+ are already submitting the forms, then the State will agree to follow-up and enforce this requirement. But, if less than that, will probably be too much of a burden. Kris said they may change the way DEQ is tracking in SDWIS during FY 2016. But, the Region said SDWIS-Prime probably won't be available until 2017 at the earliest.

ACTION: Kris Philip will research with the District Offices to determine the current submittal rate of the lead and copper reporting form; and report back to the Region.

Nonresponsive

Nonresponsive

3. Status of Flint

a. TTHM levels for May—Due to MDEQ district engineer June 10-RECEIVED; see link to results

https://www.cityofflint.com/2015/06/01/may-water-testing-results-show-all-locations-are-within-acceptable-limits-for-tthm/

All samples below the TTHM MCL; one site still has an LRAA above the MCL but decreased from 105 ppb in Feb to 93.5 ppb in May.

Mike Prysby said he is getting ready to issue the construction permit to the City of Flint to install a GAC filter in July, that will remove more TOC to further reduce the potential of developing TTHMs. Mike said he has already issue a construction permit for a transmission line within the City that will help reduce water age.

b. Lead in Flint

Our discussions with MDEQ indicate that no phosphates/corrosion control has been added to the system since April 2014 when the source of drinking water changed to the Flint River. We understand that the City is just finishing up its second set of 6-month initial monitoring for lead; where the results will probably warrant a Corrosion Control Study to be conducted. Since Flint has lead service lines, we understand some citizen-requested lead sampling is exceeding the Action Level, and the source of drinking water will be changing again in 2016, so to start a Corrosion Control Study now doesn't make sense. The idea to ask Flint to simply add phosphate may be premature; there are many other issues and factors that must be taken into account which would require a comprehensive look at the water quality and the system before any treatment recommendations can/should be made. Miguel is recommending MDEQ and EPA? approach Flint about formally requesting EPA's Office of Research and Development in Cincinnati support on the lead in Flint drinking water issue, and request that Mike Schock, ORD, and possibly Darren Lytle, ORD, to participate in Flint's drinking water advisory committee so that a comprehensive evaluation on how to proceed can be discussed.

Miguel provided a brief summary of the high lead results found at the residence of Citizen name / Ex. 6 Citizen name / Ex. 6 in Flint. Miguel will follow up with a written summary of the work conducted, sample results, and conclusions.

Miguel believes that lead levels in Flint are being affected by the lack of Corrosion Control being conducted by the City, since the LCR requires 2 6-month initial monitoring for a new source. Steve Busch stated that in the Lead sampling pool, almost all of the lead sample sites are lead service lines, and the State is not seeing large increases in lead levels at the tap. Miguel suggested that EPA experts in Lead, Mike Schock; and in distribution systems, Darren Lytle, be added to the Flint drinking water advisory committee to assist the City/State in determining the best way to proceed to minimize lead in the City's drinking water during the interim use of the Flint River, and subsequent use of Lake Huron water.

Miguel said he will send Mike Schock and Darren Lytle's contact information to Steve and Mike. Steve pointed out that the City is following the LCR requirements, and completing the requirements in a timely manner. Miguel's point is that since the LCR was promulgated 20+ years ago, that research and different situations, like Washington D.C., have educated scientists, experts, and regulators that the existing requirements in the LCR may not be as protective as previously thought. Thus, he can only make recommendations as to how to revise sampling protocols. And Miguel acknowledges that it may be another year before these regulation changes are promulgated in the Long-Term Lead and Copper Rule. In December 2015, the NDWAC recommendation is expected.

The Region asked the State if the Flint River will be a permanent supplemental source of drinking water, once the City of Flint connects with the Karegdodi pipeline from Lake Huron. Mike Prysby said that the City is currently pumping 22MGD, but the City has 40-50 MG of storage. The City is currently working on reducing its unaccounted for water losses, and these water losses are dropping. The State, through the Governor's office, provided disadvantaged system funding, $2M which includes $900K for lead detection, and pipe inspection.

Nonresponsive

Nonresponsive

Nonresponsive

Thank you!

Jennifer

shekterl@michigan.gov; 'Richard Benzie' <benzier@michigan.gov>; 'kris philip' <philipk@michigan.gov>; 'Monosmith, Carrie (DNRE)' <MONOSMITHC@michigan.gov>; 'DeBruyn, Dana (DEQ)' <DebruynD@michigan.gov>; Dettweiler, Dan (DEQ) <DETTWEILERD@michigan.gov>; Poy, Thomas <poy.thomas@epa.gov>; Kuefler, Janet <kuefler.janet@epa.gov>; Damato, Nicholas <damato.nicholas@epa.gov>; Shoven, Heather <shoven.heather@epa.gov>; Murphy, Thomas <murphy.thomas@epa.gov>; Bair, Rita <bair.rita@epa.gov>; McElhinney, Cary <mcelhinney.cary@epa.gov>; Pniak, Edward <pniak.edward@epa.gov>; 'cookp@michigan.gov'; 'Prysby, Mike (DEQ)'

<PRYSBYM@michigan.gov>; Busch, Stephen (DEQ) <BUSCHS@michigan.gov>

To: Poy, Thomas[poy.thomas@epa.gov]; Bair, Rita[bair.rita@epa.gov]; Damato, Nicholas[damato.nicholas@epa.gov]
Cc: Shoven, Heather[shoven.heather@epa.gov]; Porter, Andrea[porter.andrea@epa.gov]; Crooks, Jennifer[crooks.jennifer@epa.gov]
From: Deltoral, Miguel
Sent: Wed 6/24/2015 7:05:22 PM
Subject: Interim Report on High Lead Levels in Flint
Flint Michigan Interim Report Final 06-24-2015.pdf
Flint Michigan Interim Report Final with bcc INTERNAL COPY 06-24-2015.pdf
Timeline of Events Final 06-24-2015.pdf

Attached is the interim report on the high lead levels in Flint, Michigan. Sorry to take so long on this. I am working as fast as I can on the final report. I am waiting on some additional information from Marc Edwards before I can finish the final report. The first doc is the signed memo with the external 'cc' folks. The second is the internal copy with the 'bcc' list and the third doc is the timeline of events up to date on the Flint water quality.

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Phone: (312) 886-5253

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

REPLY TO THE ATTENTION OF:

WG-15J

June 24, 2015

MEMORANDUM

SUBJECT: High Lead Levels in Flint, Michigan – Interim Report

FROM: Miguel A. Del Toral
Regulations Manager, Ground Water and Drinking Water Branch

TO: Thomas Poy
Chief, Ground Water and Drinking Water Branch

The purpose of this interim report is to summarize the available information regarding activities conducted to date in response to high lead levels in drinking water reported by a resident in the City of Flint, Michigan. The final report will be submitted once additional analyses have been completed on pipe and water samples.

Following a change in the water source, the City of Flint has experienced a number of water quality issues resulting in violations of National Primary Drinking Water Regulations (NPDWR) including acute and non-acute Coliform Maximum Contaminant Level (MCL) violations and Total Trihalomethanes (TTHM) MCL violations as follows:

Acute Coliform MCL violation in August 2014
Monthly Coliform MCL violation in August 2014
Monthly Coliform MCL violation in September 2014
Average TTHM MCL violation in December 2014
Average TTHM MCL violation in June 2015

In addition, as of April 30, 2014, when the City of Flint switched from purchasing finished water from the City of Detroit to using the Flint River as their new water source, the City of Flint is no longer providing corrosion control treatment for lead and copper.

A major concern from a public health standpoint is the absence of corrosion control treatment in the City of Flint for mitigating lead and copper levels in the drinking water. Recent drinking water sample results indicate the presence of high lead results in the drinking water, which is to be expected in a public water system that is not providing corrosion control treatment. The lack of any mitigating treatment for lead is of serious concern for residents that live in homes with lead service lines or partial lead service lines, which are common throughout the City of Flint.

In addition, following the switch to using the Flint River, the City of Flint began adding ferric chloride, a coagulant used to improve the removal of organic matter, as part of the strategy to reduce the TTHM levels. Studies have shown that an increase in the chloride-to-sulfate mass ratio in the water can adversely affect lead levels by increasing the galvanic corrosion of lead in the plumbing network.

Prior to April 30, 2014, the City of Flint purchased finished water from the City of Detroit which contained orthophosphate, a treatment chemical used to control lead and copper levels in the drinking water. When the City of Flint switched to the Flint River as their water source on April 30, 2014, the orthophosphate treatment for lead and copper control was not continued. In effect, the City of Flint stopped providing treatment used to mitigate lead and copper levels in the water. In accordance with the Lead and Copper Rule (LCR), all large systems (serving greater than 50,000 persons) are required to install and maintain corrosion control treatment for lead and copper. In the absence of any corrosion control treatment, lead levels in drinking water can be expected to increase.

The lack of mitigating treatment is especially concerning as the high lead levels will likely not be reflected in the City of Flint's compliance samples due to the sampling procedures used by the City of Flint for collecting compliance samples. The instructions from the City of Flint to residents direct the residents to 'pre-flush' the taps prior to collecting the compliance samples. A copy of the instructions provided by the City of Flint to residents will be included in the final report.

The practice of pre-flushing before collecting compliance samples has been shown to result in the minimization of lead capture and significant underestimation of lead levels in the drinking water. Although this practice is not specifically prohibited by the LCR, it negates the intent of the rule to collect compliance samples under 'worst-case' conditions, which is necessary for statistical validity given the small number of samples collected for lead and copper under the LCR. This is a serious concern as the compliance sampling results which are reported by the City of Flint to residents could provide a false sense of security to the residents of Flint regarding lead levels in the water and may result in residents not taking necessary precautions to protect their families from lead in the drinking water. Our concern regarding the inclusion of 'pre-flushing' in sampling instructions used by public water systems in Michigan has been raised with the Michigan Department of Environmental Quality (MDEQ). The MDEQ has indicated that this practice is not prohibited by the LCR and continues to retain the 'pre-flushing' recommendation in their lead compliance sampling guidance to public water systems in Michigan. A copy of the MDEQ guidance will be included in the final report.

In the case of the Flint resident that contacted U.S. EPA Citizen name / Ex. 6 the initial results from drinking water samples collected by the City of Flint in [redacted] home for lead were 104 ug/L and 397 ug/L. The level of iron in the water also exceeded the capability of the measurement (>3.3 mg/L). The lead results were especially alarming given that the samples were collected using the sampling procedures described above, which minimize the capture of lead. When contacted by U.S. EPA Region 5, the MDEQ indicated that the lead was coming from the [redacted] plumbing. [redacted] had previously indicated that all of the plumbing in the home was plastic.

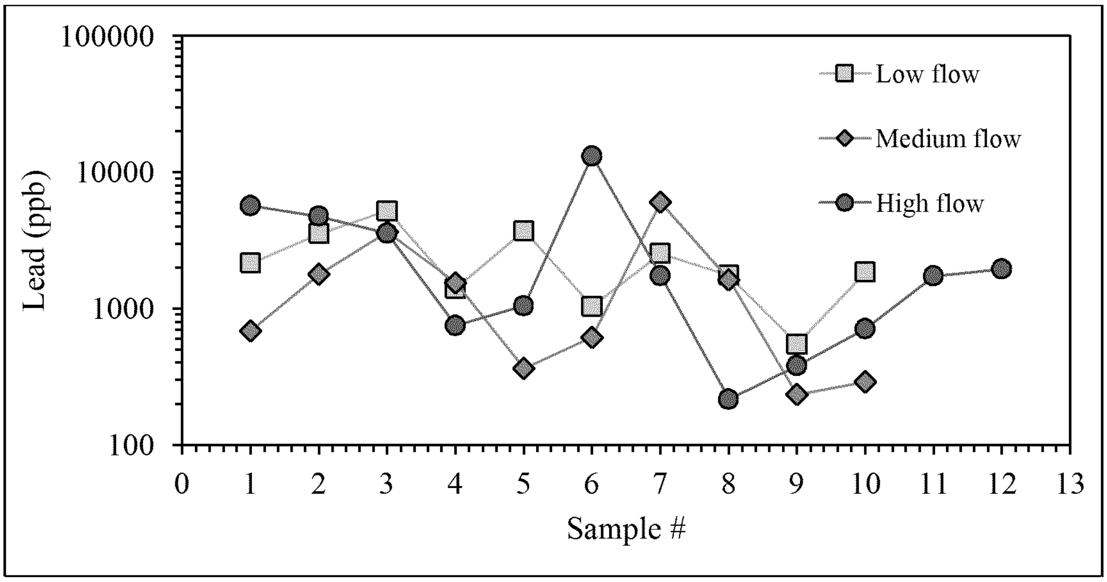
Following the confirmation of the initial high lead results, U.S. EPA Region 5 conducted two visits to the [redacted] home on April 27, 2015 and May 6, 2015. Based on an inspection of the plumbing and subsequent sampling conducted at the [redacted] residence, it was determined that except for a few minor metallic connectors, all interior plumbing, including the pipes, valves and connectors are made of plastic certified by the National Sanitation Foundation (NSF) for use in drinking water applications. Subsequent sampling showed that the faucets in the home appear to be compliant with the new lead-free requirements and are also not the source for the high lead levels. Our inspection of the interior plumbing and analysis of follow-up sampling results demonstrate that the home plumbing network is not the source of the high lead levels found at the [redacted] residence. The photographs and all sampling results will be included in the final report.

Based on the U.S. EPA inspection and documentation of the plastic plumbing at the [redacted] residence, it was suspected that the high lead was being introduced into the [redacted] home plumbing from outside the home, likely from a lead service line. Three portions of the service line were extracted during a subsequent trip on May 6, 2015 and sent for analysis, when the [redacted] service line was replaced. Analyses performed to date indicate that a portion of the service line is made of galvanized iron pipe. Inspection of the remaining portion from the water main to the external shut-off valve confirmed that the portion from the water main to the external shut-off valve is a lead service line.

[redacted] has also provided U.S. EPA with medical reports on her child's blood lead testing indicating that the child had a low blood lead level (2 ug/dL) prior to the source water switch and an elevated blood lead level following the switch (6.5 ug/dL). Redacted copies of these reports will also be included in the final report.

Subsequent to the discovery of high lead levels in the [redacted] drinking water, the water to the [redacted] home was shut off on April 3, 2015. The water was briefly turned back on to collect additional samples on April 28, 2015. Since the water had stagnated for an extended period of time, the kitchen tap was flushed for 25 minutes the night before collecting the samples. Three sets of samples were collected at different flow rates (10 at low flow, 10 at medium flow and 10 at high flow).

The drinking water samples collected from the Citizen name / Ex. 6 esidence on April 28, 2015 contained extremely high lead levels, ranging in value from 200 ug/L to 13,200 ug/L (see below).



Sample results and graph are provided courtesy of Virginia Tech

Additional sample results from resident-requested samples have also shown lead levels in excess of the lead action level. As with the samples collected by the City of Flint for compliance, the resident-requested samples are also being collected using the ‘pre-flushing’, so the lead levels captured in these samples likely do not represent the worst-case lead levels in the water and the actual lead levels at these homes may be much higher.

Pending completion of the final report, my interim recommendations are as follows:

1. The U.S. EPA should follow up with the MDEQ and the City of Flint on the recommendation made by U.S. EPA to MDEQ on June 10, 2015 to offer the City of Flint technical assistance on managing the different water quality issues in Flint, including lead in the drinking water. Although there have been two written assessments regarding water quality and operational issues in Flint at the time of this report, they do not address lead in drinking water. The first is an Operational Evaluation Report (OER) produced in November 2014 by Lockwood, Andrews and Newnam, Inc. to assess the factors contributing to high Total Trihalomethane (TTHM) levels in Flint following the source change. The focus of this report is to identify potential causes and remedial actions for lowering TTHM levels. The second report (Water Quality Report) produced by Veolia for the City of Flint on March 12, 2015, is an assessment of Flint’s water quality and operations which provides advice to the City of Flint primarily focused on TTHM control and other operational issues. Both reports were written prior to the recent discovery of high lead results in Flint drinking water. As such, the reports do not take into account the potential effects on lead levels in drinking water.

As previously mentioned, the City of Flint currently has no mitigating treatment for lead and is also planning another source water change in the near future. U.S. EPA's Office of Research and Development in Cincinnati has extensive experience in corrosion and corrosion control treatment and distribution system issues and would be a valuable addition to the drinking water advisory group for the City of Flint. Copies of the qualifications and experience for Michael Schock and Darren Lytle have been forwarded to MDEQ.

2. U.S. EPA should review the compliance status of the City of Flint with respect to whether the system is in violation of the LCR requirement to install and maintain optimal corrosion control and whether the MDEQ is properly implementing the LCR provisions regarding optimal corrosion control treatment requirements for large systems. Pursuant to 40 CFR Section 141.82(i), the EPA Regional Administrator may review treatment determinations made by a State and issue federal treatment determinations consistent with the requirements of the LCR where the Regional Administrator finds: (1) A state has failed to issue a treatment determination by the applicable deadlines; (2) A State has abused its discretion in a substantial number of cases or in cases affecting a substantial population; or (3) The technical aspects of a State's determination would be indefensible in an expected Federal enforcement action taken against a system.

3. The U.S. EPA should review whether relevant resident-requested samples are being included by the City of Flint in calculating the 90th percentile compliance value for lead. Recent drinking water tests conducted at homes in Flint for lead that are not part of the compliance sampling pool have revealed high lead levels in the drinking water. The U.S. EPA memorandum signed on December 23, 2004 provides clarification on compliance determinations and states that customer-requested samples are to be included in the 90th percentile lead compliance calculation where the sampling is conducted during the monitoring period from sites and sampling procedures meeting the LCR criteria. Given the prevalence of lead service lines in the City of Flint, should these sample results be from homes with lead service lines, the sample results would be considered compliance samples under the LCR.

Also attached is a timeline of events for Flint, Michigan. Should you have any questions regarding the information or recommendations provided, please let me know.

cc: Liane Shekter-Smith (MDEQ)
Pat Cook (MDEQ)
Stephen Busch (MDEQ)
Michael Prysby (MDEQ)
Marc Edwards (Virginia Tech)
Michael Schock, EPA-ORD
Darren Lytle, EPA-ORD

bcc: Rita Bair, GWDWB
Nicholas Damato, GWDWB
Heather Shoven, GWDWB
Jennifer Crooks, GWDWB
Andrea Porter, GWDWB

To: Schock, Michael[Schock.Michael@epa.gov]; Lytle, Darren[Lytle.Darren@epa.gov]; Marc Edwards[edwardsm@vt.edu]
From: Deltoral, Miguel
Sent: Wed 6/24/2015 7:19:02 PM
Subject: Fw: Interim Report on High Lead Levels in Flint
Flint Michigan Interim Report Final 06-24-2015.pdf
Flint Michigan Interim Report Final with bcc INTERNAL COPY 06-24-2015.pdf
Timeline of Events Final 06-24-2015.pdf

Attached is the interim report on the high lead levels in Flint, Michigan.

Miguel A. Del Toral
Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

Attached is the interim report on the high lead levels in Flint, Michigan. Sorry to take so long on this. I am working as fast as I can on the final report. I am waiting on some additional information from Marc Edwards before I can finish the final report. The first doc is the signed memo with the external 'cc' folks. The second is the internal copy with the 'bcc' list and the third doc is the timeline of events up to date on the Flint water quality.

Miguel A. Del Toral
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U.S. EPA R5 GWDWB
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Chicago, IL 60604
Phone: (312) 886-5253

To: Citizen name / Ex. 6
From: Deltoral, Miguel
Sent: Wed 6/24/2015 10:01:23 PM
Subject: Re: Interim Report on Lead Levels in Drinking Water
Flint Michigan Interim Report Final 06-24-2015.pdf
Timeline of Events Final 06-24-2015.pdf

Thank you for the kind words. I am paid by everyone's tax dollars to do my job, which is to ensure that public health is protected and I try my best to do that. I think it's critical for public officials and the general public to engage in a constructive and transparent manner,.

Regarding the report, I have unfortunately not had time to complete the final report yet but I am going to be working to complete the final report as soon as possible and will send you a copy when it is complete. In the meantime, I actually just finished the interim report today, so I am attaching that.

Thank you for your patience.

Respectfully,

Miguel A. Del Toral
Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

From: Citizen name / Ex. 6
Sent: Wednesday, June 24, 2015 04:38 PM
To: Deltoral, Miguel
Subject: Re: Interim Report on Lead Levels in Drinking Water

Thank you for the update. Please send me a copy of the report. I truly appreciate everything that you have been doing to help. I have encountered a lot of dishonest people and to be frank scum bags through this journey. Please know you have my utmost respect and appreciation for everything you are doing to help people. Its refreshing to encounter someone who has other peoples best interest at heart.

Respectfully
Citizen name / Ex. 6

On Jun 24, 2015 3:26 PM, "Deltoral, Miguel" <deltoral.miguel@epa.gov> wrote:

Good afternoon Citizen name / Ex. 6

Apologies for the wrong spelling. I have included your name and removed the names of your children from the interim report. They will also be omitted in the final report and all associated documents.

Miguel A. Del Toral
Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

From: Citizen name / Ex. 6
Sent: Wednesday, June 24, 2015 09:09 AM
To: Deltoral, Miguel
Subject: Re: Interim Report on Lead Levels in Drinking Water

The proper spelling of my name
Citizen name / Ex. 6 You may include any/all of the pictures during your site visit including interior plumbing. You may use the blood test results with the personal information in regards to my children redacted.
Respectfully
Citizen name / Ex. 6

On Jun 24, 2015 8:04 AM, "Deltoral, Miguel" <deltoral.miguel@epa.gov> wrote:

Good morning Citizen name / Ex. 6

I am working on finalizing an interim report today on the lead sampling and associated activities and I wanted to check with you regarding the inclusion of information in the report, as it will be a public document subject to release for anyone that requests it. Please review the information below and indicate whether you want the information included or excluded from the interim and final reports and I will include or exclude information in accordance with your wishes.

•□□□□□□□□ Your name Citizen name / Ex. 6 The names of other family members will not be included.

•□□□□□□□□ Photographs taken in and around your home during my site visits, including pictures of the interior plumbing.

•□□□□□□□□ Copies of the blood lead test results with all personal information regarding your Citizen name / Ex. 6 redacted.

I will wait for your response before proceeding.

Respectfully,

Miguel A. Del Toral
Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

To: Deltoral, Miguel[deltoral.miguel@epa.gov]
Cc: Damato, Nicholas[damato.nicholas@epa.gov]; Crooks, Jennifer[crooks.jennifer@epa.gov]
From: Bair, Rita
Sent: Thur 6/25/2015 2:27:05 PM
Subject: RE: Interim Report on High Lead Levels in Flint

I have a few questions after reading the interim report. We are briefing Tinka this afternoon and having answers to these questions to the extent you can will be helpful. Thanks.

1. Page 1 "Recent drinking water sample results indicate the presence of high lead results in the drinking water" – How many homes? What data do we have to support this statement? From what you have in the report, it appears we have three homes [redacted] Personal Address / Ex. 6 last measured at 22 ug/l except for the residual in the water heater; [redacted] Personal Address / Ex. 6 last measured at 22 ug/l; and [redacted] Personal Address / Ex. 6 last measured at 42 ug/l. What other data do we have to say this is wide-spread?

2. Pg 3, "Following the confirmation of the initial high lead results, USEPA Region 5 conducted two site visits" – I think we need a footnote that explains our rationale for why we went out there. What I remember Tom saying is that it was for the science and data that was available and could uniquely inform the NDWAC discussions. Does this sound right or could you provide more background on why?

3. Pg 5, "Copies of the qualifications and experience for Michael Schock and Darren Lytle have been forwarded to MDEQ". I will ask Jen to find out if MDEQ has shared this with Flint yet. If they have, I think we should say that it has been shared with Flint in the final report.

4. Pg 5, "#3 – Recent drinking water tests conducted at homes in Flint for lead that are not part of the compliance sampling pool have revealed high lead levels in the drinking water". Where did we get this data from? We may want to reference that in the report.

5. Timeline #18 – you mention the Water Quality Report done by Veolia "Primarily focused on lowering TTHM". Was there anything in the report about lead?

6. Timeline #19 – No sources of lead found in the home… Have we communicated what we found – all plastic pipes – with MDEQ?

From: Deltoral, Miguel
Sent: Wednesday, June 24, 2015 2:05 PM
To: Poy, Thomas; Bair, Rita; Damato, Nicholas
Cc: Shoven, Heather; Porter, Andrea; Crooks, Jennifer
Subject: Interim Report on High Lead Levels in Flint
Importance: High

Attached is the interim report on the high lead levels in Flint, Michigan. Sorry to take so long on this. I am working as fast as I can on the final report. I am waiting on some additional information from Marc Edwards before I can finish the final report. The first doc is the signed memo with the external 'cc' folks. The second is the internal copy with the 'bcc' list and the third doc is the timeline of events up to date on the Flint water quality.

Miguel A. Del Toral

Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

To: Hyde, Tinka[hyde.tinka@epa.gov]; Henry, Timothy[henry.timothy@epa.gov]
Cc: Damato, Nicholas[damato.nicholas@epa.gov]
From: Bair, Rita
Sent: Thur 6/25/2015 2:58:39 PM
Subject: FW: Interim Report on High Lead Levels in Flint
Flint Michigan Interim Report Final 06-24-2015.pdf
Timeline of Events Final 06-24-2015.pdf

If you have time to look this over before our 1 pm meeting, attached is the 5-page interim report and a 3-page timeline. This material is good pre-brief material. Otherwise, we will cover the material during the briefing.

From: Deltoral, Miguel
Sent: Wednesday, June 24, 2015 2:05 PM
To: Poy, Thomas; Bair, Rita; Damato, Nicholas
Cc: Shoven, Heather; Porter, Andrea; Crooks, Jennifer
Subject: Interim Report on High Lead Levels in Flint
Importance: High

Attached is the interim report on the high lead levels in Flint, Michigan. Sorry to take so long on this. I am working as fast as I can on the final report. I am waiting on some additional information from Marc Edwards before I can finish the final report. The first doc is the signed memo with the external 'cc' folks. The second is the internal copy with the 'bcc' list and the third doc is the timeline of events up to date on the Flint water quality.

Miguel A. Del Toral

Regulations Manager
U.S. EPA R5 GWDWB
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Chicago, IL 60604
Phone: (312) 886-5253

To: Bair, Rita[bair.rita@epa.gov]
Cc: Damato, Nicholas[damato.nicholas@epa.gov]; Crooks, Jennifer[crooks.jennifer@epa.gov]; Porter, Andrea[porter.andrea@epa.gov]
From: Deltoral, Miguel
Sent: Thur 6/25/2015 4:15:49 PM
Subject: Re: Interim Report on High Lead Levels in Flint
Flint LCR Sampling Instructions_2015.pdf

See responses below...

Miguel A. Del Toral
Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

From: Bair, Rita
Sent: Thursday, June 25, 2015 09:27 AM
To: Deltoral, Miguel
Cc: Damato, Nicholas; Crooks, Jennifer
Subject: RE: Interim Report on High Lead Levels in Flint

I have a few questions after reading the interim report. We are briefing Tinka this afternoon and having answers to these questions to the extent you can will be helpful. Thanks.

1. Page 1 "Recent drinking water sample results indicate the presence of high lead results in the drinking water" – How many homes? What data do we have to support this statement? From what you have in the report, it appears we have three homes Personal Address / Ex. 6 last measured at 22 ug/l except for the residual in the water heater; Personal Address / Ex. 6 last measured at 22 ug/l; and Personal Address / Ex. 6 last measured at 42 ug/l. What other data do we have to say this is wide-spread?

MDT: The following homes that we know of have had sample results above the lead action level using first-draw samples, pre-flushed the night before for 3-4 minutes, and a limit on stagnation time of 6-8 hours:

Personal Address / Ex. 6

Personal Address / Ex. 6

Personal Address / Ex. 6

The samples from Personal Address / Ex. 6 are N/A as they are from sequential sampling, and the water heater samples were from [redacted] Personal Address / Ex. 6 home at Personal Address / Ex. 6 not Personal Address / Ex. 6 and are also N/A, with respect to first-draw samples.

[The following rant is not directed at you]

The widespread high lead is my judgement based on a couple of decades of working with lead issues and I stand by it despite the limited data set from Flint. A simple application of scientific principles to the circumstances in Flint along with the limited data are enough to know that there is a problem there. They have had no corrosion control treatment in place for over a year now and they have lead service lines. It's just basic chemistry on lead solubility. You will have high lead leaching into the water where you are doing nothing to mitigate that. We don't need to drop a bowling ball off every building in every town to know that it will fall to the ground in all of these places. The fact that their sampling is designed not to capture lead (everything is fine) does not negate our scientific understanding of what is going on. The only reason we don't have more data is because the City of Flint is flushing away the evidence before measuring for it. They use pre-flushing and they limit the stagnation time to between 6-8 hours. A copy of the Flint sampling instructions is attached. A 3-4 minute flush in most cases would easily flush all of the lead away at most homes and since the lead portions of the service lines are mainly from the water main to the external shut-off valve, there is zero chance or close to zero chance that you will ever capture any of the high lead that dissolves within the lead service line in a one liter sample from the kitchen tap because the tap is too far away from the high lead sitting in the lead service line. Since the water hasn't be used in the home, the high lead hasn't moved toward the home because residents are told not to use the water after they pre-flush. The high lead levels we are seeing in Flint are mainly particulate lead, which is released sporadically in most cases, so unfortunately for Flint in their attempts to avoid capturing lead, these particles are being captured despite their attempts not to capture lead.

I understand that this is not a comfortable situation, but the State is complicit in this and the public has a right to know what they are doing because it is their children that are being harmed. At a MINIMUM, the City should be warning residents about the high lead, not hiding it telling them that there is no lead in teh water. To me that borders on criminal neglect. The only people that question the science are the ones that have a vested interest in not finding lead. When we look, we find it. When they look, they either don't find it or if they find it, they dismiss it as the resident's plumbing or use some other fabricated reason.

If there truly is a question in anyone's mind that there is a widespread lead problem in Flint, despite the painfully clear science, I am requesting that I be provided two assistants and that you folks allow me go and sample 100 homes in Flint without the pre-flushing and then we can satisfy any doubts that anyone may have. I am not even asking for per diem and I'll pay my own hotel.

Sorry for the rant, but I am really getting tired of the bad acfors being defended, the bad actions being ignored, and people trying to do the right thing are constantly being subjected to intense scrutinty as if we were doing something wrong. It's all of this 'don't find anything bad' crap at EPA that is reason I desparately want to leave. I am not happy to find bad things. It is completely stressful because it means children are being damaged and I have to put up with all of the political crap, but where these problems exist I will not ignore them. I truly, truly hate working here. EPA is a cesspool.

2. Pg 3, "Following the confirmation of the initial high lead results, USEPA Region 5 conducted two site visits" – I think we need a footnote that explains our rationale for why we went out there. What I remember Tom saying is that it was for the science and data that was available and could uniquely inform the NDWAC discussions. Does this sound right or could you provide more background on why?

There were actually two reasons. The first was to better understand what was going on in Flint for possible use at the NDWAC meetings and ultimately to inform the LCR rulemaking. The second was that I knew they were pre-flushing and I knew, based on the information that Personal Address / Ex. 6 provided, that the State was either lying or was misinformed about the source of her high lead.

3. Pg 5, "Copies of the qualifications and experience for Michael Schock and Darren Lytle have been forwarded to MDEQ". I will ask Jen to find out if MDEQ has shared this with Flint yet. If they have, I think we should say that it has been shared with Flint in the final report.

Yes, if Jen can give me a date when MDEQ asked Flint, I will include that in the timeline/final report. Ultimately, it's up to Flint as to whether they want to accept the offer or not.

4. Pg 5, "#3 – Recent drinking water tests conducted at homes in Flint for lead that are not part of the compliance sampling pool have revealed high lead levels in the drinking water". Where did we get this data from? We may want to reference that in the report.

Personal Address / Ex. 6 in response to her high lead found in her water was being a good neighbor and informed neighbors and friends who then requested that the City test their water.

5. Timeline #18 – you mention the Water Quality Report done by Veolia "Primarily focused on lowering TTHM". Was there anything in the report about lead?

No. There was nothing on lead at all in the report. The high lead levels were not known at the time that report was written. They did make some operational recommendations as well, but they were geared toward TTHM compliance. They did recommend adding polyphoshate, but that does nothing to control lead. It was recommended for sequestering the iron, due to the complaints about the discolored water.

6. Timeline #19 – No sources of lead found in the home… Have we communicated what we found – all plastic pipes – with MDEQ?

I am pretty I did, but everything has been a blur for the past couple of months so I can't definitely say that I did.

From: Deltoral, Miguel
Sent: Wednesday, June 24, 2015 2:05 PM
To: Poy, Thomas; Bair, Rita; Damato, Nicholas
Cc: Shoven, Heather; Porter, Andrea; Crooks, Jennifer
Subject: Interim Report on High Lead Levels in Flint
Importance: High

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Miguel A. Del Toral

Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

To: Shoven, Heather[shoven.heather@epa.gov]; Crooks, Jennifer[crooks.jennifer@epa.gov]
From: Porter, Andrea
Sent: Thur 6/25/2015 5:18:12 PM
Subject: RE: Interim Report on High Lead Levels in Flint --> is the recent violation history complete?

Hi Heather and Jen,

In Miguel's Flint Interim Report (see email below), he includes a list of recent violations, as follows:

Acute Coliform MCL violation in August 2014

Monthly Coliform MCL violation in August 2014

Monthly Coliform MCL violation in September 2014

Average TTHM MCL violation in December 2014

Average TTHM MCL violation in June 2015

Is the violation list complete? There could there be other newer violations (anything after December 31, 2014) at Flint that haven't yet been reported to SDWIS/FED.

For example, the violation from June 2015 won't show up in SDWIS/FED until the October 2015 data freeze. I know the State shared the violation letter with Jen, so we were aware of it ahead of the submission of the data to SDWIS/FED. Was there another TTHM violation between the December 2014 and June 2015 violations (I would have expected one since the violation is based on LRAA)? If so, it wouldn't show up in SDWIS/FED until the July 2015 freeze.

How should this be handled for Miguel's list? Do we need to add any explanations?

Thanks,

Andrea Porter

Environmental Engineer

Ground Water & Drinking Water Branch

U.S. EPA, Region 5 (WG-15J)

77 W. Jackson Blvd.

Chicago, IL 60604

Phone: 312-886-4427

Fax: 312-697-2656

From: Deltoral, Miguel
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To: Poy, Thomas; Bair, Rita; Damato, Nicholas
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Miguel A. Del Toral

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To: Porter, Andrea[porter.andrea@epa.gov]; Crooks, Jennifer[crooks.jennifer@epa.gov]
From: Shoven, Heather
Sent: Thur 6/25/2015 8:18:33 PM
Subject: RE: Interim Report on High Lead Levels in Flint --> is the recent violation history complete?
Flint VN TTHM 6_9_15.pdf
20150323142442063.pdf
City of Flint VN - MCL TTHM 12_16_14.pdf

Hi Andrea,

Good catch.

Based on the attached 3 NOV letters received from MDEQ, I would characterize the TTHM MCL Violations in the following manner –

Average TTHM MCL violation in December 2014 for Q4 2014

Average TTHM MCL violation in March 2015 for Q1 2015

Average TTHM MCL violation in June 2015 for Q2 2015

Best wishes,

Heather

Heather A. Shoven | Enforcement Team Leader | U.S. Environmental Protection Agency, Region 5

Ground Water and Drinking Water Branch | 77 W. Jackson Blvd (WG-15J) | Chicago, IL 60604 | 312-886-0153

From: Porter, Andrea
Sent: Thursday, June 25, 2015 12:18 PM
To: Shoven, Heather; Crooks, Jennifer
Subject: RE: Interim Report on High Lead Levels in Flint --> is the recent violation history complete?

Hi Heather and Jen,

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Thanks,

Andrea Porter

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Chicago, IL 60604
Phone: (312) 886-5253

STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY
LANSING DISTRICT OFFICE

RICK SNYDER
GOVERNOR

DAN WYANT
DIRECTOR

March 5, 2015

Mr. Brent Wright, Operations Supervisor
City Of Flint - DPW
Flint Water Plant
4500 North Dort Highway
Flint, Michigan 48505

WSSN: 02310

Dear Mr. Wright:

SUBJECT: Violation Notice (VN) – Maximum Contaminant Level for Total Trihalomethanes (TTHM)
Operational Evaluation – Total Trihalomethanes
1st Quarter 2015 Monitoring Period

The Department of Environmental Quality (DEQ), Office of Drinking Water and Municipal Assistance (ODWMA), records show that the city of Flint (City) is in violation of the Safe Drinking Water Act,1976 PA 399, as amended (Act 399); R 325.10610, *Maximum contaminant levels for disinfection byproducts (MCLs)*, of the 1979 Administrative Code.

In accordance with R 325.10610, *MCLs*, of the 1979 Administrative Code, the MCL for disinfection byproduct TTHM is 0.080 milligrams per liter (mg/L) as a Locational Running Annual Average (LRAA) at each monitoring location. As listed in the table below, our records show that the City's highest TTHM locational running annual average (LRAA), based on the last four quarters, ending February 28, 2015, is 0.105 mg/L which exceeds the standard, and that two of the eight sample site locations exceed the standard of 0.080 mg/L.

Further, in accordance with R 325.10719l, *Disinfection byproducts: operational evaluation levels*, of the 1979 Administrative Code, when an operational evaluation level (OEL) at a monitoring location for TTHM exceeds 0.080 mg/L, a supply shall conduct an operational evaluation and submit a written report of the evaluation to the DEQ not later than 90 days after being notified of the analytical result that causes the supply to exceed the operational evaluation level. As listed in the table below, our records show that the TTHM OELs for the City exceed 0.080 mg/L at one of the City's eight sample site locations.

TTHM Results (mg/L)						
	5/21/14	8/21/14	11/20/14	2/17/15	LRAA	OEL
DBP1 McDonalds 3719 Davison	**0.162**	**0.145**	0.059	0.0162	**0.096**	0.059
DBP2 Liquor Palace 3302 S. Dort Highway	**0.112**	**0.127**	0.033	0.0168	0.072	0.049
DBP3 North Flint Auto 6204 N. Saginaw St.	**0.097**	**0.118**	0.041	0.0149	0.068	0.047
DBP4 University Market 2501 Flushing Road	**0.106**	**0.196**	**0.094**	0.0245	**0.105**	**0.085**
DBP5 Taco Bell 3606 Corunna Road	0.079	**0.181**	0.034	0.0151	0.078	0.063
DBP6 Rite-Aid Pharmacy 5018 Clio Road	**0.088**	**0.144**	0.054	0.0192	0.076	0.059
DBP7 Salem Housing 3216 MLK Boulevard	**0.082**	**0.112**	0.050	0.0285	0.068	0.055
DBP8 BP Gas Station 822 S. Dort Highway	0.075	**0.112**	0.036	0.0199	0.061	0.047

Our investigation consisted of a review of ODWMA files for laboratory reports received for compliance monitoring. Our investigation is considered complete. This violation began on March 1, 2015, and will continue until TTHM LRAA is below the MCL at all sample sites.

We are encouraged by the results from the most recent round of compliance samples collected on February 17, 2015, which now show individual TTHM levels at less than half of the 0.080 mg/L standard at all locations throughout the City's system. Operational Evaluation Reports from December 2014, and February 2015, have identified possible causes and corrective measures for the previous elevated TTHM levels which we encourage the City to continue implementing. These modifications have likely contributed in part to the reduction in TTHM levels reported in the most recent quarter, and suggest the City may be able to achieve compliance with the TTHM standard at all sites by continuing these efforts.

Our office is currently reviewing the Operational Evaluation Report dated February 27, 2015, and will provide the City and their consultant with comments, as needed, to help address this MCL violation.

Water systems that exceed the OEL must complete and submit an Operational Evaluation in accordance with Administrative Rule 719l (R 325.10719l) within 90 days of being notified of the violation. **An updated Operational Evaluation report, which incorporates the most recent sample results, must now be completed and received by our office by no later than Friday, May 29, 2015**.

If you have any other factual information you would like us to consider regarding the violation identified in this VN, please provide them in a written response by March 19, 2015.

Administrative rule R 325.10403 of Act 399 requires that suppliers provide public notice (PN) as soon as practical, but no later than thirty (30) days after the supplier learns of this type of violation, by mail or direct delivery **and** by any other means reasonably calculated to reach customers not normally reached by mail. Enclosed is a sample PN which contains the minimum required language. The City is encouraged to include additional information regarding its response efforts to this violation. **Please notify your consumers by April 1, 2015, and send us a signed and dated copy of the notice that you issued within ten (10) days of distributing the public notice**. This violation must also be included in your 2015 Consumer Confidence Report, due by July 1, 2016. The PN must be repeated every quarter until you no longer exceed the TTHM standard. Failure to issue a PN for this violation will result in a fine of at least $1,000 per event, with a maximum of $5,000 per violation.

We anticipate and appreciate your continued cooperation in resolving this matter. If you have any questions regarding this VN, please contact us at the numbers below; at prysbym@michigan.gov; or rosenthala@michigan.gov; or at DEQ, P.O. Box 30242, Lansing, Michigan 48909-7742.

Sincerely,

Michael Prysby

Michael F. Prysby, P.E., District Engineer
Lansing District Office
Office of Drinking Water and Municipal Assistance
517-290-8817

Adam Rosenthal, Environmental Quality Analyst
Lansing District Office
Office of Drinking Water and Municipal Assistance
517-284-6644

Enclosure

cc: Ms. Jennifer Crooks, U.S. Environmental Protection Agency, Region 5
Mr. Jerry Ambrose, Emergency Manager, City of Flint
Mr. Robert Bincsik, City of Flint
Mr. Howard Croft, City of Flint
Mr. Daughtry Johnson, City of Flint
Genesee County Health Department
Ms. Liane Shekter Smith, DEQ
Mr. Richard Benzie, DEQ
Mr. Stephen Busch, DEQ

IMPORTANT INFORMATION ABOUT YOUR DRINKING WATER

City of Flint Did Not Meet Treatment Requirements

Our water system recently violated a drinking water standard. Although this incident was not an emergency, as our customers, you have a right to know what happened and what we are doing to correct this situation.

We routinely monitor for the presence of drinking water contaminants. Samples were collected for total trihalomethanes (TTHM) analysis from eight locations on a quarterly basis (May 21, August 21, November 20 of 2014, and February 17, 2015). The average of the results at **ANY** of the eight locations must not exceed the maximum contaminant level (MCL) for TTHMs, otherwise our water system exceeds the MCL. The standard for TTHMs is 80 micro grams per liter (µg/L). The location reporting the highest TTHM level was 105 ug/L; thus, our water system exceeds the TTHM MCL.

What should I do?

- There is nothing you need to do unless you have a severely compromised immune system, have an infant, or are elderly. These people may be at increased risk and should seek advice about drinking water from their health care providers.
- You do not need to boil your water or take other corrective actions. If a situation arises where the water is no longer safe to drink, you will be notified within 24 hours.

What does this mean?

This is not an emergency. If it had been an emergency, you would have been notified within 24 hours.

People who drink water containing trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous system, and may have an increased risk of getting cancer.

What is being done?

We are currently working on solutions to correct the problem. We anticipate resolving the problem in 2015. Our most recent individual sample results were all less than half the 80 µg/L standard, however since compliance is calculated using a locational running annual average (LRAA) of the most recent four quarters, we are still out of compliance with the MCL at two of eight locations.

For more information, please contact Mr. Brent Wright at 517-787-6537, or the Flint Water Plant at 4500 North Dort Highway, Flint, Michigan 48505.

Please share this information with all the other people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses). You can do this by posting this notice in a public place or distributing copies by hand or mail.

This notice is being sent to you by the City of Flint.

CERTIFICATION: WSSN: 02310

I certify that this water supply has fully complied with the public notification requirements in the Michigan Safe Drinking Water Act, 1976 PA 399, as amended, and the administrative rules.

Signature	Title	Date Distributed

Reminder to water supplier: This notice/certification must be sent to the Department of Environmental Quality.

To: Deltoral, Miguel[deltoral.miguel@epa.gov]; Bair, Rita[bair.rita@epa.gov]
Cc: Damato, Nicholas[damato.nicholas@epa.gov]; Porter, Andrea[porter.andrea@epa.gov]
From: Crooks, Jennifer
Sent: Mon 6/29/2015 2:29:50 PM
Subject: RE: Interim Report on High Lead Levels in Flint

Miguel—I understand your desire to prove to MDEQ that there pre-flushing protocol is minimizing the levels of lead. I also understand the need the determine unequivocally via sampling, the *actual* levels of lead in Flint drinking water. Your proposal to take 100 lead samples at homes in Flint w/lead service lines, and w/o the pre-flushing protocol is a good one, if we can get the approvals to do it. I would be happy to help you with that sampling effort, Miguel, and pay my own travel expenses too. I'm wondering if we could get Mike Schock to help with the planning for the sampling; our sampling protocol and locations of samples, etc.

Also, I discussed this with Janet this morning, and she suggested a Blood Lead Level Study, like what was done in D.C., in 2005. Who would undertake a study like this in Flint? Wouldn't this be a more definitive indication that there is a lead problem in Flint?

I know that MDEQ does not think there is a lead issue in Flint. And we may not be able to convince them that there is lead issue unless we have black and white laboratory results to prove it. However, MDEQ—Pat Cook, said to me in mid-May, that since Flint has not been adding phosphates since April 2014, that maybe Flint should be adding corrosion control/phosphates of some sort, to protect against corrosion/lead leeching since the phosphate scale from the Detroit days is probably gone—a preventative precautionary statement, I think. Miguel, I know you disagree with Flint just adding phosphates w/o any study on what type of corr control, concentrations to add, etc., but perhaps this admission by Pat Cook might be the way to negotiate a compromise for the State to request Flint to do public education on a mass scale to educate the people on how long to flush their water before using in the morning or if it had been stagnant for a given amount of time.

Yes, I have forwarded the bios for Mike Schock and Darren Lytle to MDEQ; haven't heard back from them whether they shared with Flint (I sent Steve B and Mike P an email Friday 6/26). I also email Mike Wright/ORD as to whether he was aware if MDEQ had shared their bios with Flint.

Regarding your question #6, Rita: I also had conversations with Pat Cook and Mike Prysby at MDEQ about Citizen name / Ex. 6 indoor plastic piping, but I did not clearly state in any email that Citizen name / Ex. 6 Citizen name / Ex. 6 plumbing was proven to be all plastic—I alluded to it in one of my emails to Steve and Mike.

Jennifer

From: Deltoral, Miguel
Sent: Thursday, June 25, 2015 11:16 AM
To: Bair, Rita
Cc: Damato, Nicholas; Crooks, Jennifer; Porter, Andrea
Subject: Re: Interim Report on High Lead Levels in Flint

See responses below...

Miguel A. Del Toral

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U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

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Personal Address / Ex. 6

The samples from Personal Address / Ex. 6 are N/A as they are from sequential sampling, and the water heater samples were from Citizen name / Ex. 6 home a Personal Address / Ex. 6, not Personal Address / Ex. 6 and are also N/A, with respect to first-draw samples.

[The following rant is not directed at you]

The widespread high lead is my judgement based on a couple of decades of working with lead issues and I stand by it despite the limited data set from Flint. A simple application of scientific principles to the circumstances in Flint along with the limited data are enough to know that there is a problem there. They have had no corrosion control treatment in place for over a year now and they have lead service lines. It's just basic chemistry on lead solubility. You will have high lead leaching into the water where you are doing nothing to mitigate that. We don't need to drop a bowling ball off every building in every town to know that it will fall to the ground in all of these places. The fact that their sampling is designed not to capture lead (everything is fine) does not negate our scientific understanding of what is going on. The only reason we don't have more data is because the City of Flint is flushing away the evidence before measuring for it. They use pre-flushing and they limit the stagnation time to between 6-8 hours. A copy of the Flint sampling instructions is attached. A 3-4 minute flush in most cases would easily flush all of the lead away at most homes and since the lead portions of the service lines are mainly from the water main to the external shut-off valve, there is zero chance or close to zero chance that you will ever capture any of the high lead that dissolves within the lead service line in a one liter sample from the kitchen tap because the tap is too far away from the high lead sitting in the lead service line. Since the water hasn't be used in the home, the high lead hasn't moved toward the home because residents are told not to use the water after they pre-flush. The high lead levels we are seeing in Flint are mainly particulate lead, which is released sporadically in most cases, so unfortunately for Flint in their attempts to avoid capturing lead, these particles are being captured despite their attempts not to capture lead.

I understand that this is not a comfortable situation, but the State is complicit in this and the public has a right to know what they are doing because it is their children that are being harmed.

At a MINIMUM, the City should be warning residents about the high lead, not hiding it telling them that there is no lead in teh water. To me that borders on criminal neglect. The only people that question the science are the ones that have a vested interest in not finding lead. When we look, we find it. When they look, they either don't find it or if they find it, they dismiss it as the resident's plumbing or use some other fabricated reason.

If there truly is a question in anyone's mind that there is a widespread lead problem in Flint, despite the painfully clear science, I am requesting that I be provided two assistants and that you folks allow me go and sample 100 homes in Flint without the pre-flushing and then we can satisfy any doubts that anyone may have. I am not even asking for per diem and I'll pay my own hotel.

Sorry for the rant, but I am really getting tired of the bad acfors being defended, the bad actions being ignored, and people trying to do the right thing are constantly being subjected to intense scrutinty as if we were doing something wrong. It's all of this 'don't find anything bad' crap at EPA that is reason I desparately want to leave. I am not happy to find bad things. It is completely stressful because it means children are being damaged and I have to put up with all of the political crap, but where these problems exist I will not ignore them. I truly, truly hate working here. EPA is a cesspool.

2. Pg 3, "Following the confirmation of the initial high lead results, USEPA Region 5 conducted two site visits" – I think we need a footnote that explains our rationale for why we went out there. What I remember Tom saying is that it was for the science and data that was available and could uniquely inform the NDWAC discussions. Does this sound right or could you provide more background on why?

There were actually two reasons. The first was to better understand what was going on in Flint for possible use at the NDWAC meetings and ultimately to inform the LCR rulemaking. The second was that I knew they were pre-flushing and I knew, based on the information that Citizen name / Ex. 6 Citizen name / Ex. 6 provided, that the State was either lying or was misinformed about the source of her high lead.

3. Pg 5, "Copies of the qualifications and experience for Michael Schock and Darren Lytle have been forwarded to MDEQ". I will ask Jen to find out if MDEQ has shared this with Flint yet. If they have, I think we should say that it has been shared with Flint in the final report.

Yes, if Jen can give me a date when MDEQ asked Flint, I will include that in the timeline/final report. Ultimately, it's up to Flint as to whether they want to accept the offer or not.

4. Pg 5, "#3 – Recent drinking water tests conducted at homes in Flint for lead that are not part of the compliance sampling pool have revealed high lead levels in the drinking water". Where did we get this data from? We may want to reference that in the report.

Citizen name / Ex. 6 in response to her high lead found in her water was being a good neighbor and informed neighbors and friends who then requested that the City test their water.

5. Timeline #18 – you mention the Water Quality Report done by Veolia "Primarily focused on lowering TTHM". Was there anything in the report about lead?

No. There was nothing on lead at all in the report. The high lead levels were not known at the time that report was written. They did make some operational recommendations as well, but they were geared toward TTHM compliance. They did recommend adding polyphoshate, but that does nothing to control lead. It was recommended for sequestering the iron, due to the complaints about the discolored water.

6. Timeline #19 – No sources of lead found in the home… Have we communicated what we found – all plastic pipes – with MDEQ?

I am pretty I did, but everything has been a blur for the past couple of months so I can't definitely say that I did.

From: Deltoral, Miguel
Sent: Wednesday, June 24, 2015 2:05 PM
To: Poy, Thomas; Bair, Rita; Damato, Nicholas
Cc: Shoven, Heather; Porter, Andrea; Crooks, Jennifer
Subject: Interim Report on High Lead Levels in Flint
Importance: High

Attached is the interim report on the high lead levels in Flint, Michigan. Sorry to take so long on this. I am working as fast as I can on the final report. I am waiting on some additional information from Marc Edwards before I can finish the final report. The first doc is the signed memo with the external 'cc' folks. The second is the internal copy with the 'bcc' list and the third doc is the timeline of events up to date on the Flint water quality.

Miguel A. Del Toral

Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

To: Deltoral, Miguel[deltoral.miguel@epa.gov]
From: Laura Dufresne
Sent: Mon 6/29/2015 9:50:17 PM
Subject: RE: schedule for final NDWAC

Thanks Miguel - we are submitting the revised guidance manual tomorrow afternoon, so if we don't get chance to talk, we can connect after you have reviewed the changes. One thing for you to look at tomorrow if you have time is proposed text for a new text box on Pb(IV) below.

Thanks!

Laura

Office: 703.247.6152

Cell: 703.862.0760

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Changing disinfectant from free chlorine to chloramine for disinfection may destabilize Pb(IV) scales.

Systems can use other corrosion control treatments such as pH/alkalinity/DIC adjustment or phosphate-based corrosion inhibitors, but lead levels may increase as the scale is converting from Pb(IV) to Pb(II) based scale.

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Sent: Monday, June 29, 2015 11:33 AM
To: Laura Dufresne
Subject: RE: schedule for final NDWAC

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Phone: (312) 886-5253

From: Laura Dufresne [Laura.Dufresne@cadmusgroup.com]

Sent: Friday, June 26, 2015 07:03 AM

To: Deltoral, Miguel

Subject: Re: schedule for final NDWAC

Hi Miguel - good luck on everything, and if today doesn't work how about Monday? Monday is actually a little better for me, my schedule is open from 9:30 - 4:30 Eastern.

Thanks!

Laura

From: Deltoral, Miguel <deltoral.miguel@epa.gov>

Sent: Wednesday, June 24, 2015 9:25 AM

To: Laura Dufresne

Subject: Re: schedule for final NDWAC

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Phone: (312) 886-5253

From: Laura Dufresne <Laura.Dufresne@cadmusgroup.com>

Sent: Wednesday, June 24, 2015 08:01 AM

To: Deltoral, Miguel

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Thanks!

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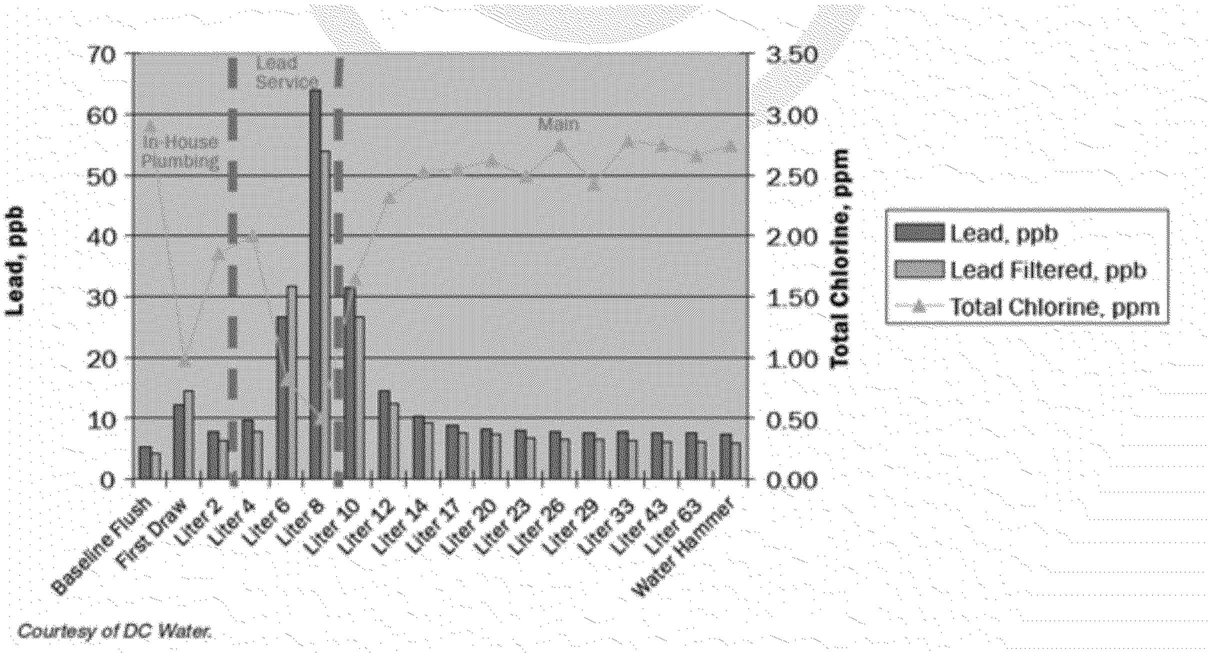
To: Deltoral, Miguel[deltoral.miguel@epa.gov]
From: Laura Dufresne
Sent: Mon 6/29/2015 9:59:19 PM
Subject: RE: schedule for final NDWAC

Sorry for the multiple e-mails but one more thought, do you happen to have a good sample premise plumbing profile graph that we can use for the guidance manual? The one there now is from the AWWA 2011 internal corrosion book from DCWater (see below), but we were hoping for an original from you or Mike.

Thanks Miguel!

Laura



Courtesy of DC Water.

Figure 5-21 Example of a lead profile at a residential home with a lead service line

From: Laura Dufresne
Sent: Monday, June 29, 2015 5:50 PM
To: 'Deltoral, Miguel'
Subject: RE: schedule for final NDWAC

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Cell: 703.862.0760

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Sent: Monday, June 29, 2015 11:33 AM
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Miguel A. Del Toral

Regulations Manager

U.S. EPA R5 GWDWB

77 West Jackson Blvd, (WG-15J)

Chicago, IL 60604

Phone: (312) 886-5253

From: Laura Dufresne [Laura.Dufresne@cadmusgroup.com]

Sent: Friday, June 26, 2015 07:03 AM

To: Deltoral, Miguel

Subject: Re: schedule for final NDWAC

Hi Miguel - good luck on everything, and if today doesn't work how about Monday? Monday is actually a little better for me, my schedule is open from 9:30 - 4:30 Eastern.

Thanks!

Laura

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To: Laura Dufresne[Laura.Dufresne@cadmusgroup.com]
Bcc: Schock, Michael[Schock.Michael@epa.gov]
From: Deltoral, Miguel
Sent: Tue 6/30/2015 11:42:58 AM
Subject: RE: schedule for final NDWAC

Hi Laura,

The text below looks fine.

Miguel A. Del Toral
Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

From: Laura Dufresne [Laura.Dufresne@cadmusgroup.com]
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Subject: RE: schedule for final NDWAC

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Thanks!

Laura

Office: 703.247.6152

Cell: [redacted] Personal Phone / Ex. 6

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Sent: Friday, June 26, 2015 07:03 AM

To: Deltoral, Miguel

Subject: Re: schedule for final NDWAC

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To: Laura Dufresne[Laura.Dufresne@cadmusgroup.com]
Cc: Schock, Michael[Schock.Michael@epa.gov]
Bcc: Rita Bair[Bair.Rita@epa.gov]
From: Deltoral, Miguel
Sent: Tue 6/30/2015 12:15:32 PM
Subject: RE: schedule for final NDWAC
image002.png

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[cid:image002.png@01D0B295.50D0D940]

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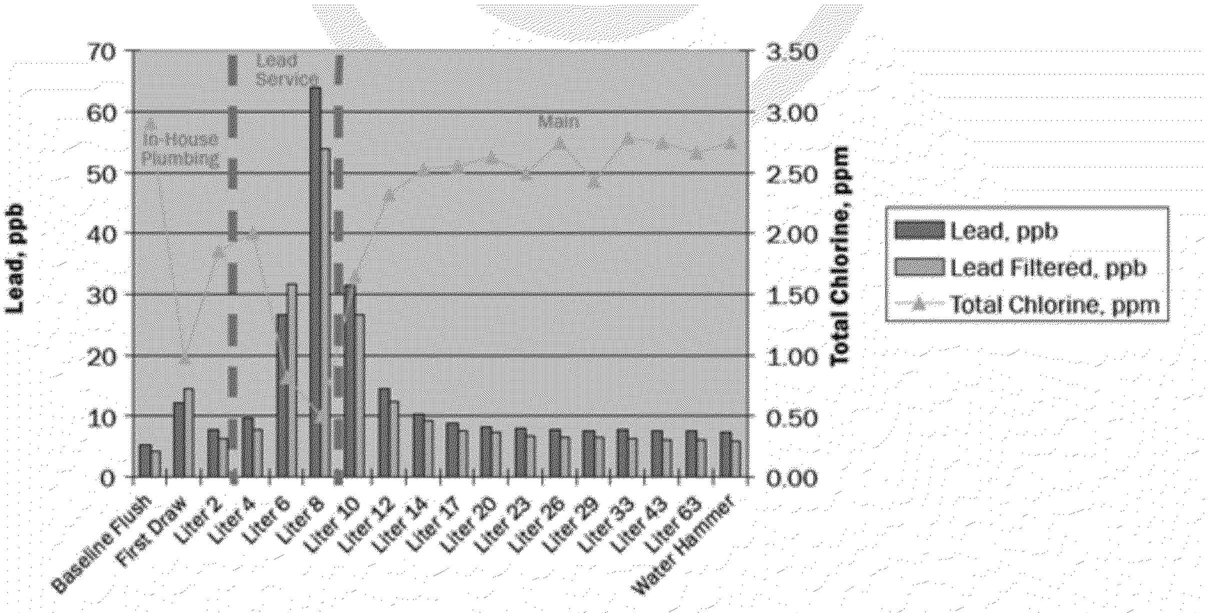

Courtesy of DC Water.

Figure 5-21 Example of a lead profile at a residential home with a lead service line

To: Contractor
Cc: Schock, Michael[Schock.Michael@epa.gov]
Bcc: Rita Bair[Bair.Rita@epa.gov]
From: Deltoral, Miguel
Sent: Tue 6/30/2015 12:17:35 PM
Subject: RE: schedule for final NDWAC
Chicago Sequential Sampling Combined Graphs and Tables.xlsx

Sorry, here is the file.

Miguel A. Del Toral
Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
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Phone: (312) 886-5253

From: Contractor
Sent: Monday, June 29, 2015 04:59 PM
To: Deltoral, Miguel
Subject: RE: schedule for final NDWAC

Sorry for the multiple e-mails but one more thought, do you happen to have a good sample premise plumbing profile graph that we can use for the guidance manual? The one there now is from the AWWA 2011 internal corrosion book from DCWater (see below), but we were hoping for an original from you or Mike.

Thanks Miguel!
Laura

[cid:image002.png@01D0B295.50D0D940]

From: Contractor
Sent: Monday, June 29, 2015 5:50 PM
To: 'Deltoral, Miguel'
Subject: RE: schedule for final NDWAC

Thanks Miguel - we are submitting the revised guidance manual tomorrow afternoon, so if we don't get chance to talk, we can connect after you have reviewed the changes. One thing for you to look at tomorrow if you have time is proposed text for a new text box on Pb(IV) below.

Thanks!

Laura

Office: 703.247.6152

Cell: 703.862.0760

Important Questions about Pb(IV)

Do my lead service lines have Pb(IV) scales?

Pb(IV) (also known as Lead IV or Pb++) can occur on any lead surface. It forms under highly oxidative conditions. If you have lead service lines with a moderate pH (7 – 8), a consistent free chlorine residual throughout the system (typically 1 – 2 mg/L or higher), and no lead problems, you might have predominantly Pb(IV) scales. To help determine if your systems is a candidate for Pb(IV) scales, you can measure ORP of the water – Eh values of 0.7 volts or higher are indicative of Pb(IV) scales. You can also evaluate the scale on exhumed lead service lines to find out for sure.

Can I promote formation of Pb(IV) scales to reduce lead levels?

Although some utilities are targeting the development of a PB(IV) scale in their systems to control lead release (Brown et al. 2013), questions remain as to how systems and primacy agencies can ensure that disinfectant residuals required for the formation and maintenance of PbO2 scales are maintained within lead service lines throughout the distribution system and to the customer's taps. This may be a particular challenge with homes that go unoccupied for an extended period of time. Therefore, EPA has not included formation of a Pb(IV) scale as a corrosion control treatment technique in this document at this time.
What happens if I have Pb(IV) scales and I change treatment?
Changing disinfectant from free chlorine to chloramine for disinfection may destabilize Pb(IV) scales. Systems can use other corrosion control treatments such as pH/alkalinity/DIC adjustment or phosphate-based corrosion inhibitors, but lead levels may increase as the scale is converting from Pb(IV) to Pb(II) based scale.

-----Original Message-----
From: Deltoral, Miguel [mailto:deltoral.miguel@epa.gov]
Sent: Monday, June 29, 2015 11:33 AM
To: Contractor
Subject: RE: schedule for final NDWAC

I finished my interim report on Flint, but I was out Thursday afternoon and all day Friday when I was going to work on some RTCR stuff. So now I have to complete my RTCR review for IL DPH today. I will let you know when I get that done and barring any more firedrills, we can hope set something up in the next day or so.

Miguel A. Del Toral

Regulations Manager

U.S. EPA R5 GWDWB

77 West Jackson Blvd, (WG-15J)

Chicago, IL 60604

Phone: (312) 886-5253

From: **Contractor**

Sent: Friday, June 26, 2015 07:03 AM

To: Deltoral, Miguel

Subject: Re: schedule for final NDWAC

Hi Miguel - good luck on everything, and if today doesn't work how about Monday? Monday is actually a little better for me, my schedule is open from 9:30 - 4:30 Eastern.

Thanks!

Laura

From: Deltoral, Miguel <deltoral.miguel@epa.gov<mailto:deltoral.miguel@epa.gov>>

Sent: Wednesday, June 24, 2015 9:25 AM

To: **Contractor**

Subject: Re: schedule for final NDWAC

Hi Laura,

I did not make the trip. I have an urgent report on Flint MI that I have to finish up. I am hoping to have that done by Friday, but stuff is always coming up. I will keep you posted on availability for Friday.

Miguel A. Del Toral

Regulations Manager

U.S. EPA R5 GWDWB

77 West Jackson Blvd, (WG-15J)

Chicago, IL 60604

Phone: (312) 886-5253

From: Contractor
<Contractor>

Sent: Wednesday, June 24, 2015 08:01 AM

To: Deltoral, Miguel

Subject: schedule for final NDWAC

Hi Miguel! I realized I should have asked a long time ago, but will you be here in Arlington for the final LCR WG meeting? I was hoping we could meet for 1/2 hour to an hour to talk about monitoring recommendations in the manual. If you are not in DC maybe we can talk by phone by Friday?

Thanks!

Laura

[http://www.cadmusgroup.com/wp-content/themes/cadmus/images/cadmus_logo_small.png]<http://www.cadmusgroup.com/>

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<https://twitter.com/CadmusGroup> [LinkedIn] <http://www.linkedin.com/company/the-cadmus-group>

To: Hyde, Tinka[hyde.tinka@epa.gov]
Cc: Kelley, Jeff[kelley.jeff@epa.gov]
From: Hedman, Susan
Sent: Wed 7/1/2015 2:10:50 AM
Subject: Fwd: Comments on Flint Water

Please take a look at this and draft a note that I can send to the mayor explaining that the staffer inappropriately released a draft report that had not yet been vetted and suggesting next steps.

Sent from my iPhone

Begin forwarded message:

From: Dayne Walling <dwalling@cityofflint.com>
Date: June 30, 2015 at 8:36:41 PM CDT
To: "Hedman, Susan" <Hedman.susan@epa.gov>
Cc: "Kelley, Jeff" <Kelley.Jeff@epa.gov>
Subject: Comments on Flint Water

Dr. Hedman,
Please take a look at the communication I received from the City of Flint Public Information Officer about comments that may have been made about Flint Water from an EPA region 5 staff.

It would be helpful for me to have the same information that was shared with the ACLU representative if indeed this is what took place. I will also be following up with the City of Flint DPW Director Howard Croft to see if he has received this information already or not.

We certainly want to work to address any concerns that have arisen as the City's water treatment, distribution system, and testing processes have been examined.

Thank you in advance for any assistance and information you can provide.

All the best,
Dayne

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www.cityofflint.com
follow me on twitter at http://twitter.com/mayorwalling

---------- Forwarded message ----------
From: **Jason Lorenz** <jlorenz@cityofflint.com>
Date: Tue, Jun 30, 2015 at 1:49 PM
Subject: Fwd: Water treatment
To: Natasha Henderson <nhenderson@cityofflint.com>, Dayne Walling <dwalling@cityofflint.com>, Howard Croft <hcroft@cityofflint.com>, Michael Glasgow <mglasgow@cityofflint.com>, Peter Bade <pbade@cityofflint.com>

FYI-
Curt Guyette, the reporter working for the Michigan ACLU wants to talk to someone from the City regarding the information below. It is worth noting that this is one of the co-producers of the *Hard to Swallow* Youtube video from last week, which somewhat discredits his objectivity.

Best,

-Jason Lorenz
Public Information Officer
City of Flint
(810) 237-2039
jlorenz@cityofflint.com

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From: **Curt Guyette** <cguyette@aclumich.org>
Date: Tue, Jun 30, 2015 at 1:39 PM
Subject: Water treatment
To: Jason Lorenz <jlorenz@cityofflint.com>

Jason,

I have interviewed Miguel Del Toral, regulations manager for ground and drinking water for the EPA's region 5.

He said there are a number of concerns regarding Flint.

Among other things, he said:

A major concern from a public health standpoint is the absence of corrosion control treatment in the City of Flint for mitigating lead and copper levels in the drinking water.

Recent drinking water samples indicate the presence of high lead results in the drinking water.

In addition to the lack of corrosion control, the ferric chloride being added to help address the TTHM problem can accelerate pipe corrosion, exacerbating the problem.

He also said that the city's testing procedures – instructing residents to "pre-flush" their lines before taking water samples to be tested, can lead to deceptively low results that could give Flint residents a false sense of security regarding actual lead levels in their water.

Obviously, this is a very urgent issue. I am interested to talk with someone from the city about what Mr. Del Toral had to say. Can you set up a phone interview with someone for me to talk with tomorrow? I can make myself available whenever is convenient for you.

If you need to talk with me beforehand, you can reach me on my cell phone at 586-925-0493.

Thanks for any help you can provide.

Curt Guyette

--
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Flint, MI 48502
810-766-7346

mayor@cityofflint.com
www.cityofflint.com
follow me on twitter at http://twitter.com/mayorwalling

To: Henry, Timothy[henry.timothy@epa.gov]
From: Hyde, Tinka
Sent: Wed 7/1/2015 2:19:06 AM
Subject: ACTION: Comments on Flint Water

Tim - please see Susan's request below. She is asking for a note she can send to the mayor in response to a reporters inquiry. Thanks.

Sent from my iPhone

Begin forwarded message:

> **From:** "Hedman, Susan" <hedman.susan@epa.gov>
> **Date:** June 30, 2015 at 9:10:50 PM CDT
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>> We certainly want to work to address any concerns that have arisen as the City's water

treatment, distribution system, and testing processes have been examined.

Thank you in advance for any assistance and information you can provide.

All the best,
Dayne

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If you need to talk with me beforehand, you can reach me on my cell phone at 586-925-0493.

Thanks for any help you can provide.

Curt Guyette

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Cc: Kelley, Jeff[kelley.jeff@epa.gov]; Henry, Timothy[henry.timothy@epa.gov]
From: Hyde, Tinka
Sent: Wed 7/1/2015 2:20:10 AM
Subject: Re: Comments on Flint Water

Will do.

Sent from my iPhone

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follow me on twitter at http://twitter.com/mayorwalling

To: Bair, Rita[bair.rita@epa.gov]
From: Henry, Timothy
Sent: Wed 7/1/2015 12:32:56 PM
Subject: Fwd: ACTION: Comments on Flint Water

;;;;
Please draft a response I can forward to Susan. I would like something to review by noon today.

Tim Henry
Deputy Director, Water Division
US EPA Region V
312-886-6107 (office)
312-296-0690 (cell)

Sent from my iPhone

Begin forwarded message:

> **From:** "Hyde, Tinka" <hyde.tinka@epa.gov>
> **Date:** June 30, 2015 at 21:19:06 CDT
> **To:** "Henry, Timothy" <henry.timothy@epa.gov>
> **Subject: ACTION: Comments on Flint Water**
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To: Bair, Rita[bair.rita@epa.gov]; Damato, Nicholas[damato.nicholas@epa.gov]
Cc: Shoven, Heather[shoven.heather@epa.gov]; Porter, Andrea[porter.andrea@epa.gov]; Jennifer Crooks Personal Email / Ex. 6 Kuefler, Janet[kuefler.janet@epa.gov]; Poy, Thomas[poy.thomas@epa.gov]
From: MIGUEL DEL TORAL
Sent: Wed 7/1/2015 1:13:06 PM
Subject: Flint Info

Hi Rita/Nick,

Following up on yesterday's conversation…

Sorry for all of the confusion on Flint. I have been keeping Tom and Jen updated, but I did not know that Personal Matters / Ex. 6 Otherwise I would have made sure to brief you folks. The following should clear up some of the confusion and answer a lot of the questions being asked.

My main point here is that we have been keeping MDEQ in the loop and discussing Flint-related issues with them all along. I have done that directly myself or via Jen Crooks. There were a few snafus with information getting jumbled in translation between Jen and I, so I asked that folks wait for the report to be finished so that we are not giving MDEQ inaccurate or conflicting information. I'm not being critical here, just trying to explain the decision making. Tom instructed me to try to finish the report asap so that we could get it to MDEQ, which I was working on trying to do. I wrote the interim report because I realized I could not finish the full report anytime soon because I was (and still am) waiting for some final analyses on some pipes. At the same time I was told to expedite the Flint report, I was also asked to give priority to other State RTCR primacy work and in the middle of all of that, I had the NDWAC and other work, so I issued the interim report, which covered the main issues that were discussed with Tom, Jen and MDEQ. The OEPA primacy package alone was 200+ pages with very detailed comments from Kevin Chow that I had to respond to. The IEPA package was almost as long and I also have the IDPH package that folks want finished asap. I am doing the best I can under the circumstances, and it would help if folks didn't jump to conclusions on Flint before asking. Personal Matters / Ex. 6 Personal Matters / Ex. 6 It's not the workload that is causing the stress, it's the politics and people treating me as if I am doing something wrong. THAT is Personal Matters / Ex. 6 The non-functioning, unreliable EPA network adds to that as I never know from day to day whether I will be able to access the network.

On the MDEQ coordination front…There has been direct communication with MDEQ on all of the Flint related issues, so there is nothing in the interim report that should surprise MDEQ. I had previously discussed our concern with the lack of corrosion control treatment for lead and the use of pre-flushing with Pat Cook who implements the LCR out of the MDEQ central office. Pat Cook confirmed that MDEQ still instructs public water systems to use the pre-flushing and that as of April 30, 2014, Flint does not have corrosion control treatment in place. Based on the email exchanges with Pat Cook back and forth, it is clear that the City of Flint is in violation for either failing to install corrosion control treatment initially as required by the LCR or failure to maintain the treatment when they switched their source from Detroit to the Flint River. As that is a matter for enforcement, I did not state this conclusively in the interim report as I wanted to give the enforcement folks time to go through the details. During our exchanges, Pat Cook informed that it was MDEQ 'policy' to wait for two rounds of monitoring before requiring treatment after a system switches sources. I explained that this MDEQ policy is inconsistent with the LCR regulations, and his response implies that MDEQ may not be implementing the LCR correctly across all large systems.On the issue of pre-flushing…Tom, Jen, and I had also already discussed the issue of pre-flushing with Liane Shekter-Smith during the April State Directors meeting.

So rolling back the clock…this all started when a citizen in Flint (Citizen name / Ex. 6 called Jen on February 25, 2015 about her high lead levels (104ppb). Jen appropriately brought me in on this. A subsequent test by the City came back even higher (397ppb). I contacted Mike Prysby and Steve Busch (MDEQ) on March 19, 2015 regarding the high lead. The MDEQ response from Steve Busch was that the lead was coming from the Citizen name / Ex. 6 home plumbing. The same was being repeated by the City of Flint in public meetings. Citizen name / Ex. 6 was angry and insisted that she had all plastic plumbing.

Since the MDEQ had asked Jen and I to conduct some RTCR training in Bay City on April 27, 2015, and we would be passing right by Flint, we discussed stopping by the Citizen name / Ex. 6 place with Tom on the way back from the Bay City training. Tom agreed and Jen and I stopped by the Citizen name / Ex. 6 place. This is when we verified that all of the plumbing in the home is plastic pipe approved for drinking water applications. That immediately raised red flags in my mind, as the lead had to be coming from outside the home. A lead service line was the likeliest reason, given the prevalence of lead lines in Flint. We had also learned that Citizen name / Ex. 6 had a very long service line and that the water main she was connected to was not cast-iron or ductile iron, but galvanized iron. The zinc used in galvanized iron can contain lead as a contaminant and the most commonly used zinc, Western Grade, can contain up to 2 percent lead. So now we had two potential lead sources: 1) lead service line; and 2) galvanized iron water main.

So the second trip, also approved by Tom, was a last minute decision with multiple objectives:

- As the water at the Citizen name / Ex. 6 had been turned off on April 3, 2015, turning it back on and sampling could provide useful information to inform the LCR rulemaking on whether homes that are unoccupied and subsequently re-occupied might pose a higher risk to the incoming residents where lead service lines are present. The sequential sampling would also inform as to where the lead was coming from.
- Citizen name / Ex. 6 home was connected to the galvanized water main via a very long service line. There were two homes on the same old water main as the Citizen name / Ex. 6 with much shorter service lines, so we conducted sequential sampling at those two homes as well, to gather more information as to whether the galvanized iron water main might be contributing lead to the water. This also has relevance as to how to structure changes to the LCR.
- The Citizen name / Ex. 6 were having their service line replaced, so we wanted to

collect segments from the old service line to analyze the condition of the scale inside the pipe, which we presumed could be a lead service line in whole or in part. On this same trip, we verified that a portion of the Citizen name / Ex. 6 service line is made of lead pipe.

Upon confirming the lack of any treatment, the use of pre-flushing, and incoming high lead results, we became very concerned with the situation in Flint from a public health standpoint.

I'll stop there because I think that should answer most of the questions you had. As I have not been able to get into OWA all morning, please call me if you need anything else. I will be working offline today on the final Flint report and will not be checking email.

Miguel

To: Crooks, Jennifer[crooks.jennifer@epa.gov]; Deltoral, Miguel[deltoral.miguel@epa.gov]; Kuefler, Janet[kuefler.janet@epa.gov]; Porter, Andrea[porter.andrea@epa.gov]; Shoven, Heather[shoven.heather@epa.gov]
From: Bair, Rita
Sent: Wed 7/1/2015 3:27:44 PM
Subject: FW: Flint

From: Hyde, Tinka
Sent: Tuesday, June 30, 2015 3:41 PM
To: shekterl@michigan.gov
Cc: MONOSMITHC@michigan.gov; Henry, Timothy; Poy, Thomas; Bair, Rita; Damato, Nicholas
Subject: Flint

Hi Liane – I'm following up on the voicemail I left for you earlier today. I'm also copying Carrie Monosmith as I did get a chance to chat with her. In advance of our call scheduled for 7/21/15, I wanted to provide you with an update related to water quality challenges in Flint. I understand that some discussion occurred on June 10th with Tom Poy and staff during the semi-annual call regarding MDEQ's implementation of the LCR rule and the status of Flint. The Region is concerned about the lead situation in Flint and suggested that additional ORD assistance could be provided to Flint's Advisory Committee. We understand that the city is finishing up its second set of 6-month initial monitoring and I have scheduled a call with you on July 21st so we can discuss the Flint situation in more detail.

As you know, my staff have been out to Flint to collect samples and data which we felt could uniquely inform the NDWAC process and ultimately better inform the LCR rulemaking. Tom Poy asked Miguel Del Toral to prepare a report summarizing the visits and findings. Last week Miguel completed a draft interim report and provided it to management. Once Miguel addresses our comments, we will provide you with a copy of that report. In most cases, an internal EPA memo would not be distributed outside the agency, but given his interaction with the homeowner for one of the sampling locations, Miguel has shared a copy of the draft interim report as a courtesy with this Flint resident. Based on Miguel's initial analysis, elevated lead levels were found at this residence. In addition, it appears that the source of the lead may be from outside the home (Note: plumbing in the home is largely plastic).

Please know that Region 5 management is still being briefed on the lead issues in Flint and we look forward to the opportunity to discuss the situation with you in more detail so we can better characterize what MDEQ is already doing in Flint and how public health protection can best be provided to the citizens of Flint. If you would like to discuss this in advance of our call, please feel free to contact myself, or Tim Henry (312-886-6107). Thanks

Tinka G. Hyde

Water Division Director

USEPA W-15J

77 W. Jackson Blvd

Chicago, IL 60604

Office: 312-886-9296

Cell: 312-735-9428

To: Bair, Rita[bair.rita@epa.gov]; Damato, Nicholas[damato.nicholas@epa.gov]; Shoven, Heather[shoven.heather@epa.gov]; Crooks, Jennifer[crooks.jennifer@epa.gov]; Kuefler, Janet[kuefler.janet@epa.gov]; Porter, Andrea[porter.andrea@epa.gov]
From: MIGUEL DEL TORAL
Sent: Wed 7/1/2015 4:25:29 PM
Subject: Long term treatment change/new source citations

Here are the three places that discuss long-term treatment change and new source requirements and state authorities.

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This first provision applies to systems that are deemed optimized in accordance with the criteria in 141.81(b)(3) [low lead levels]

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Any water system deemed to have optimized corrosion control pursuant to this paragraph shall notify the State in writing pursuant to § 141.90(a)(3) of any upcoming long-term change in treatment or addition of a new source as described in that section. The State must review and approve the addition of a new source or long-term change in water treatment before it is implemented by the water system. The State may require any such system to conduct additional monitoring or to take other action the State deems appropriate to ensure that such systems maintain minimal levels of corrosion in the distribution system.

This second provision applies to all systems on reduced monitoring

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Any water system subject to a reduced monitoring frequency under paragraph (d)(4) of this section shall notify the State in writing in accordance with § 141.90(a)(3) of any upcoming long-term change in treatment or addition of a new source as described in that section. The State must review and approve the addition of a new source or long-term change in water treatment before it is implemented by the water system. The State may require the system to resume sampling in accordance with paragraph (d)(3) of this section and collect the number of samples specified for standard monitoring under paragraph (c) of this section or take other appropriate steps such as increased water quality parameter monitoring or re-evaluation of its corrosion control treatment given the potentially different water quality considerations.

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Miguel

To: Hyde, Tinka[hyde.tinka@epa.gov]
Cc: Kelley, Jeff[kelley.jeff@epa.gov]; Henry, Timothy[henry.timothy@epa.gov]
From: Hedman, Susan
Sent: Wed 7/1/2015 5:55:47 PM
Subject: Re: Comments on Flint Water

I told the Mayor that we would follow up by the end of the day today. Are we on track to do that?

Sent from my iPhone

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>> Begin forwarded message:
>>
>>> **From:** Dayne Walling <dwalling@cityofflint.com>
>>> **Date:** June 30, 2015 at 8:36:41 PM CDT
>>> **To:** "Hedman, Susan" <Hedman.susan@epa.gov>
>>> **Cc:** "Kelley, Jeff" <Kelley.Jeff@epa.gov>
>>> **Subject: Comments on Flint Water**
>>>
>>> Dr. Hedman,
>>> Please take a look at the communication I received from the City of Flint Public Information Officer about comments that may have been made about Flint Water from an EPA region 5 staff.
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>>> It would be helpful for me to have the same information that was shared with the ACLU representative if indeed this is what took place. I will also be following up with the City of Flint DPW Director Howard Croft to see if he has received this information already or not.

We certainly want to work to address any concerns that have arisen as the City's water treatment, distribution system, and testing processes have been examined.

Thank you in advance for any assistance and information you can provide.

All the best,
Dayne

--
Dayne Walling
Mayor, City of Flint
City Hall, 1101 S. Saginaw St.
Flint, MI 48502
810-766-7346
mayor@cityofflint.com
www.cityofflint.com
follow me on twitter at http://twitter.com/mayorwalling

---------- Forwarded message ----------
From: **Jason Lorenz** <jlorenz@cityofflint.com>
Date: Tue, Jun 30, 2015 at 1:49 PM
Subject: Fwd: Water treatment
To: Natasha Henderson <nhenderson@cityofflint.com>, Dayne Walling <dwalling@cityofflint.com>, Howard Croft <hcroft@cityofflint.com>, Michael Glasgow <mglasgow@cityofflint.com>, Peter Bade <pbade@cityofflint.com>

FYI-
Curt Guyette, the reporter working for the Michigan ACLU wants to talk to someone from the City regarding the information below. It is worth noting that this is one of the co-producers of the *Hard to Swallow* Youtube video from last week, which somewhat discredits his objectivity.

Best,

-Jason Lorenz
Public Information Officer
City of Flint
(810) 237-2039
jlorenz@cityofflint.com

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From: **Curt Guyette** <cguyette@aclumich.org>
Date: Tue, Jun 30, 2015 at 1:39 PM
Subject: Water treatment

To: Jason Lorenz <jlorenz@cityofflint.com>

Jason,

I have interviewed Miguel Del Toral, regulations manager for ground and drinking water for the EPA's region 5.

He said there are a number of concerns regarding Flint.

Among other things, he said:

A major concern from a public health standpoint is the absence of corrosion control treatment in the City of Flint for mitigating lead and copper levels in the drinking water.

Recent drinking water samples indicate the presence of high lead results in the drinking water.

In addition to the lack of corrosion control, the ferric chloride being added to help address the TTHM problem can accelerate pipe corrosion, exacerbating the problem.

He also said that the city's testing procedures – instructing residents to "pre-flush" their lines before taking water samples to be tested, can lead to deceptively low results that could give Flint residents a false sense of security regarding actual lead levels in their water.

Obviously, this is a very urgent issue. I am interested to talk with someone from the city about what Mr. Del Toral had to say. Can you set up a phone interview with someone for me to talk with tomorrow? I can make myself available whenever is convenient for you.

If you need to talk with me beforehand, you can reach me on my cell phone at 586-925-0493.

Thanks for any help you can provide.

Curt Guyette

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Dayne Walling
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To: MIGUEL DEL TORAL Personal Email / Ex. 6 Bair, Rita[bair.rita@epa.gov]; Damato, Nicholas[damato.nicholas@epa.gov]; Shoven, Heather[shoven.heather@epa.gov]; Crooks, Jennifer[crooks.jennifer@epa.gov]; Porter, Andrea[porter.andrea@epa.gov]
From: Kuefler, Janet
Sent: Wed 7/1/2015 6:08:28 PM
Subject: RE: Long term treatment change/new source citations

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Janet Kuefler

Ground Water and Drinking Water Branch

State Programs Team Leader

United States Environmental Protection Agency, Region 5

77 West Jackson Blvd. (WG-15J)

Chicago, Illinois 60604

(312) 886-0123

kuefler.janet@epa.gov

From: MIGUEL DEL TORAL [redacted] Personal Email / Ex. 6
Sent: Wednesday, July 01, 2015 11:25 AM
To: Bair, Rita; Damato, Nicholas; Shoven, Heather; Crooks, Jennifer; Kuefler, Janet; Porter, Andrea
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Miguel

To: Hedman, Susan[hedman.susan@epa.gov]; Hyde, Tinka[hyde.tinka@epa.gov]
Cc: Kelley, Jeff[kelley.jeff@epa.gov]
From: Henry, Timothy
Sent: Wed 7/1/2015 6:14:26 PM
Subject: RE: Comments on Flint Water

I am reviewing a draft response right now...it will require some work.

Tim Henry
Deputy Director, Water Division
U.S. EPA (W-15J)
77 W. Jackson Blvd., Chicago, IL 60604-3590
Phone: 312.886.6107 Fax: 312.692.2578

From: Hedman, Susan
Sent: Wednesday, July 01, 2015 12:56 PM
To: Hyde, Tinka
Cc: Kelley, Jeff; Henry, Timothy
Subject: Re: Comments on Flint Water

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Date: June 30, 2015 at 8:36:41 PM CDT
To: "Hedman, Susan" <Hedman.susan@epa.gov>
Cc: "Kelley, Jeff" <Kelley.Jeff@epa.gov>
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Dayne

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From: **Jason Lorenz** <jlorenz@cityofflint.com>
Date: Tue, Jun 30, 2015 at 1:49 PM
Subject: Fwd: Water treatment
To: Natasha Henderson <nhenderson@cityofflint.com>, Dayne Walling <dwalling@cityofflint.com>, Howard Croft <hcroft@cityofflint.com>, Michael Glasgow <mglasgow@cityofflint.com>, Peter Bade <pbade@cityofflint.com>

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Public Information Officer

City of Flint

(810) 237-2039

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To: Kuefler, Janet[kuefler.janet@epa.gov]; MIGUEL DEL TORAL[Personal Email / Ex. 6 Bair, Rita[bair.rita@epa.gov]; Damato, Nicholas[damato.nicholas@epa.gov]; Shoven, Heather[shoven.heather@epa.gov]; Crooks, Jennifer[crooks.jennifer@epa.gov]
From: Porter, Andrea
Sent: Wed 7/1/2015 7:08:02 PM
Subject: flint --> lcr milestone data in sdwis/fed (no info for flint; deem for detroit)
mi_lcr_milestones.xlsx

Hi All,

Miguel asked for the LCR milestone data we have in SDWIS/FED for Flint and Detroit. I thought it might be useful for the whole group. For reference, all of the DEEM, DONE, and LSLR data for MI from SDWIS/FED is attached.

There is nothing in SDWIS/FED for Flint DEEM, DONE, or LSLR. There is a DEEM for Detroit, as follows:

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	DETROIT CITY OF	6/30/1999	5/19/2004	DEEM	System deemed optimized without OCCT	B3	Serving greater than 50,000: met action levels

Isn't it well known that SDWIS/FED data for LCR milestones are unreliable and incomplete? As such, I'm not sure how much we can read into Flint not having any DEEM or DONE milestones in our database.

If there are any other data questions, just let me know. I'm happy to help.

Thanks,

Andrea Porter

Environmental Engineer

Ground Water & Drinking Water Branch

U.S. EPA, Region 5 (WG-15J)

77 W. Jackson Blvd.

Chicago, IL 60604

Phone: 312-886-4427

Fax: 312-697-2656

From: Kuefler, Janet
Sent: Wednesday, July 01, 2015 1:08 PM
To: MIGUEL DEL TORAL; Bair, Rita; Damato, Nicholas; Shoven, Heather; Crooks, Jennifer; Porter, Andrea
Subject: RE: Long term treatment change/new source citations

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Janet Kuefler

Ground Water and Drinking Water Branch

State Programs Team Leader

United States Environmental Protection Agency, Region 5

77 West Jackson Blvd. (WG-15J)

Chicago, Illinois 60604

(312) 886-0123

kuefler.janet@epa.gov

From: MIGUEL DEL TORAL [Personal Email / Ex. 6
Sent: Wednesday, July 01, 2015 11:25 AM
To: Bair, Rita; Damato, Nicholas; Shoven, Heather; Crooks, Jennifer; Kuefler, Janet; Porter, Andrea
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Miguel

To: Kuefler, Janet[kuefler.janet@epa.gov]; Bair, Rita[bair.rita@epa.gov]; Damato, Nicholas[damato.nicholas@epa.gov]; Shoven, Heather[shoven.heather@epa.gov]; Crooks, Jennifer[crooks.jennifer@epa.gov]; Porter, Andrea[porter.andrea@epa.gov]
From: MIGUEL DEL TORAL
Sent: Wed 7/1/2015 7:12:16 PM
Subject: Re: Long term treatment change/new source citations

Hi Janet,

That is one of the questions that needs to be answered.

Miguel

From: "Kuefler, Janet" <kuefler.janet@epa.gov>
To: MIGUEL DEL TORAL (b) (6) [redacted]; "Bair, Rita" <bair.rita@epa.gov>; "Damato, Nicholas" <damato.nicholas@epa.gov>; "Shoven, Heather" <shoven.heather@epa.gov>; "Crooks, Jennifer" <crooks.jennifer@epa.gov>; "Porter, Andrea" <porter.andrea@epa.gov>
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To: Bair, Rita; Damato, Nicholas; Shoven, Heather; Crooks, Jennifer; Kuefler, Janet; Porter, Andrea
Subject: Long term treatment change/new source citations

Here are the three places that discuss long-term treatment change and new source requirements and state authorities.

Long-term Change(s) in Treatment or Addition of New Source(s)

This first provision applies to systems that are deemed optimized in accordance with the criteria in 141.81(b)(3) [low lead levels]

141.81(b)(3)(iii)
Any water system deemed to have optimized corrosion control pursuant to this paragraph shall notify the State in writing pursuant to § 141.90(a)(3) of any upcoming long-term change in treatment or addition of a new source as described in that section. The State must review and approve the addition of a new source or long-term change in water treatment before it is implemented by the water system. The State may require any such system to conduct additional monitoring or to take other action the State deems appropriate to ensure that such systems maintain minimal levels of corrosion in the distribution system.

This second provision applies to all systems on reduced monitoring

141.86(d)(4)(vii)
Any water system subject to a reduced monitoring frequency under paragraph (d)(4) of this section shall notify the State in writing in accordance with § 141.90(a)(3) of any upcoming long-term change in treatment or addition of a new source as described in

that section. The State must review and approve the addition of a new source or long-term change in water treatment before it is implemented by the water system. The State may require the system to resume sampling in accordance with paragraph (d)(3) of this section and collect the number of samples specified for standard monitoring under paragraph (c) of this section or take other appropriate steps such as increased water quality parameter monitoring or re-evaluation of its corrosion control treatment given the potentially different water quality considerations.

This third provision is only applicable to systems that get lead/copper monitoring waivers and would not apply to Flint.

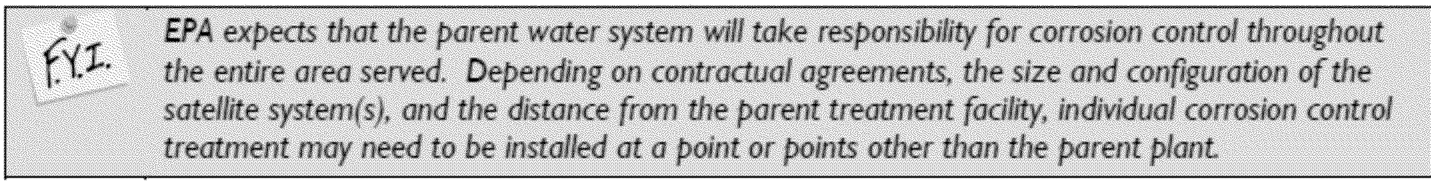
141.86(g)(4)(iii)
Any water system with a full or partial waiver shall notify the State in writing in accordance with § 141.90(a)(3) of any upcoming long-term change in treatment or addition of a new source, as described in that section. The State must review and approve the addition of a new source or long-term change in water treatment before it is implemented by the water system. The State has the authority to require the system to add or modify waiver conditions (e.g., require recertification that the system is free of lead-containing and/or copper-containing materials, require additional round(s) of monitoring), if it deems such modifications are necessary to address treatment or source water changes at the system.
Miguel

To: MIGUEL DEL TORAL[Personal Email / Ex. 6]; Kuefler, Janet[kuefler.janet@epa.gov]; Bair, Rita[bair.rita@epa.gov]; Damato, Nicholas[damato.nicholas@epa.gov]; Shoven, Heather[shoven.heather@epa.gov]; Crooks, Jennifer[crooks.jennifer@epa.gov]
From: Porter, Andrea
Sent: Wed 7/1/2015 7:33:25 PM
Subject: RE: Long term treatment change/new source citations

Hi All,

I've been looking through our guidance for corrosion control at consecutive systems. It seems like, as of 2010, we would expect Detroit (the wholesaler) to be responsible for corrosion control treatment for Flint (see excerpt and link below) as long as Flint was a consecutive system.

Source = Lead and Copper Rule Monitoring and Reporting Guidance for Public Water Systems, March 2010 (http://water.epa.gov/lawsregs/rulesregs/sdwa/lcr/upload/Revised-Lead-and-Copper-Rule-Monitoring-and-Reporting-Guidance-for-Public-Water-Systems.pdf):



EPA expects that the parent water system will take responsibility for corrosion control throughout the entire area served. Depending on contractual agreements, the size and configuration of the satellite system(s), and the distance from the parent treatment facility, individual corrosion control treatment may need to be installed at a point or points other than the parent plant.

Thanks,

Andrea Porter

Environmental Engineer

Ground Water & Drinking Water Branch

U.S. EPA, Region 5 (WG-15J)

77 W. Jackson Blvd.

Chicago, IL 60604

Phone: 312-886-4427

Fax: 312-697-2656

From: MIGUEL DEL TORAL Personal Email / Ex. 6
Sent: Wednesday, July 01, 2015 2:12 PM
To: Kuefler, Janet; Bair, Rita; Damato, Nicholas; Shoven, Heather; Crooks, Jennifer; Porter, Andrea
Subject: Re: Long term treatment change/new source citations

Hi Janet,

That is one of the questions that needs to be answered.

Miguel

From: "Kuefler, Janet" <kuefler.janet@epa.gov>
To: MIGUEL DEL TORAL <thedeltorals@sbcglobal.net>; "Bair, Rita" <bair.rita@epa.gov>; "Damato, Nicholas" <damato.nicholas@epa.gov>; "Shoven, Heather" <shoven.heather@epa.gov>; "Crooks, Jennifer" <crooks.jennifer@epa.gov>; "Porter, Andrea" <porter.andrea@epa.gov>
Sent: Wednesday, July 1, 2015 1:08 PM
Subject: RE: Long term treatment change/new source citations

I am just wondering when Detroit was deemed optimized, did the notification automatically apply to the consecutives, and were they notified, or did each consecutive get treated as an individual system with separate notification of optimization.

Did the state approve the new source in writing per 141.90 (a)(3)

(3) At a time specified by the State,

or if no specific time is designated by

the State, then as early as possible

prior to the addition of a new source or any long-term change in water treatment, a water system deemed to have optimized corrosion control under § 141.81(b)(3), a water system subject to reduced monitoring pursuant to § 141.86(d)(4), or a water system subject to a monitoring waiver pursuant to § 141.86(g), shall submit written documentation to the State describing the change or addition. The State must review and approve the addition of a new source or long-term change in treatment before it is implemented by the water system. Examples of long-term treatment changes include the addition of a new treatment process or modification of an existing treatment process. Examples of modifications include switching secondary disinfectants, switching coagulants (e.g., alum to ferric chloride), and switching corrosion inhibitor products (e.g., orthophosphate to blended phosphate). Long-term changes can include dose changes to existing chemicals if the system is planning long-term changes to its finished water pH or residual inhibitor concentration. Long-term treatment changes would not include

chemical dose fluctuations associated

with daily raw water quality changes

Janet Kuefler

Ground Water and Drinking Water Branch

State Programs Team Leader

United States Environmental Protection Agency, Region 5

77 West Jackson Blvd. (WG-15J)

Chicago, Illinois 60604

(312) 886-0123

kuefler.janet@epa.gov

From: MIGUEL DEL TORAL **Personal Email / Ex. 6**
Sent: Wednesday, July 01, 2015 11:25 AM
To: Bair, Rita; Damato, Nicholas; Shoven, Heather; Crooks, Jennifer; Kuefler, Janet; Porter, Andrea
Subject: Long term treatment change/new source citations

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This third provision is only applicable to systems that get lead/copper monitoring waivers and would not apply to Flint.

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Any water system with a full or partial waiver shall notify the State in writing in accordance with § 141.90(a)(3) of any upcoming long-term change in treatment or addition of a new source, as described in that section. The State must review and approve the addition of a new source or long-term change in water treatment before it is implemented by the water system. The State has the authority to require the system to add or modify waiver conditions (e.g., require recertification that the system is free of lead-containing and/or copper-containing materials, require additional round(s) of monitoring), if it deems such modifications are necessary to address treatment or source water changes at the system.

Miguel

To: Shekter Smith, Liane (DNRE)[SHEKTERL@michigan.gov]; Richard Benzie[benzier@michigan.gov]; kris philip[philipk@michigan.gov]; Monosmith, Carrie (DNRE)[MONOSMITHC@michigan.gov]; DeBruyn, Dana (DEQ)[DebruynD@michigan.gov]; Dettweiler, Dan (DEQ)[DETTWEILERD@michigan.gov]; Busch, Stephen (DEQ)[BUSCHS@michigan.gov]; Prysby, Mike (DEQ)[PRYSBYM@michigan.gov]; 'cookp@michigan.gov'[cookp@michigan.gov]; Holdwick, Kevin (DEQ)[HOLDWICKK@michigan.gov]
Cc: Thomas Poy[Poy.Thomas@epa.gov]; Bair, Rita[bair.rita@epa.gov]; Damato, Nicholas[damato.nicholas@epa.gov]; Shoven, Heather[shoven.heather@epa.gov]; Kuefler, Janet[kuefler.janet@epa.gov]; Murphy, Thomas[murphy.thomas@epa.gov]; Porter, Andrea[porter.andrea@epa.gov]; Deltoral, Miguel[deltoral.miguel@epa.gov]
From: Crooks, Jennifer
Sent: Wed 7/1/2015 10:31:25 PM
Subject: Draft Notes from Michigan semi-annual call on 6/10

All--Below are my draft notes from our call last week, June 10, 2015. Thank you all for participating. I apologize for the delay in getting these out in draft to you all for review--I was hoping to get a couple of items ironed out that were fuzzy during our discussions, but hasn't happened yet. Several ACTION items below. So, please review to make sure I documented our discussion/agreements correctly, and feel free to edit as needed. I you could get back to me by July 13, that would be great. Thank you!

Jennifer

Attendees:
MDEQ: Liane Shekter-Smith, Richard Benzie, Carrie Monosmith, Kris Philip, Dan Dettweiler, Marjorie Rodriguez (Student), Kevin Holdwick, Mike Prysby, Dana DeBruyn, Steve Busch
EPA Region 5: Tom Poy, Rita Bair, Nick Damato, Janet Kuefler, Michele Palmer, Tom Murphy, Heather Shoven, Cary McElhinney, Andrea Porter, Miguel Deltoral, Mostafa Noureldin

Summary:

1.Changes in Lead Disinvestments and Commitments for FY 2016 ARDP--for discussion: Due to our extreme focus on lead in drinking water, this is the consensus here.

a. Consumer notification of tap results at NTNCWSs:
(Suggested wording) The NCWS program commits to full implementation of the lead consumer notification of tap results requirement, to begin in CY 2016. Region 5 will assist in a notification outreach effort in late FY 2015 to remaining 698 NTNCWSs that are not schools/daycares, to begin providing lead consumer notice in CY 2016. NCWS program commits to include information on providing lead consumer notice in the annual monitoring letter sent to all NTNCWSs for CY 2016.

STATE: The State found this change in the wording acceptable.

b. Collection of Lead samples at NTNCWSs during June - September 2016 timeframe
(Suggested wording) NCWS program commits to including information in the

applicable NTNCWS annual monitoring letters of the requirement to collect their annual/triennial lead sample between June and September only, during CY 2016. The MDEQ NCWS program currently does not have the capability to easily track lead sampling compliance within this specific timeframe.

STATE: The State found this change in the wording acceptable.

c. Follow-up Actions for NTNCWSs that sample outside of June-September 2015 timeframe
(From 5/5/15 call notes w/EPA) MDEQ commits to providing Region 5 with all CY 2015 lead (and copper?) sample data for all NTNCWSs by March 2016 so that EPA can analyze how many PWSs monitored outside the June through October timeframe. EPA commits to follow-up with MDEQ to discuss follow-up actions.

STATE: The State agreed to providing EPA R5 the raw lead and copper data for all CY 2015 for all NTNCWSs. The WaterTrack database does have data, but it can't generate violations. MDEQ doesn't commit to enforcing against 2016 violators in FY 2016. The State said, it is planning on disinvesting in enforcing against these violators due to limited capability of WaterTrack; however, if the State's noncommunity data management capabilities improve during FY 2016, implementation of this disinvestment may become a reality. The State has not designated an alternate timeframe, or done system specific documentation as to why the system qualifies for a different timeframe.

d. Submittal of the lead and copper reporting form
(Suggested wording) MDEQ commits to requiring CWSs and NTNCWSs to submit the lead and copper reporting form via the annual monitoring letters to each system, tracking CWSs and NTNCWSs submittal of the lead and copper reporting form, and commits to issuing violations for failure to submit the lead and copper reporting form. The reporting form provides the address of the sample site, designates sampling site selection criteria, and explanation(s) for any changes in sampling sites.

STATE: Dan Dettweiler stated that the NCWS program was not in a position to do this for the NTNCWSs at this time. Tom Murphy asked how does WaterTrack handle/track high lead results? Tom M said there is a truncation issue on the sample location name field. Dan acknowledged that this problem has been identified, and the Department of Technology Management and Budget (DTMB) has been trying to fix this problem, but it is a challenging problem. Dan stated that sample sites for NTNCWSs are actually identified by LHDs during the sanitary survey and are documented in the sanitary survey. The LHDs check the pdf of the laboratory results that clearly states where the sample was taken, and calculates the 90th percentile. However, Dan stated that the requirement to send in the lead and copper reporting form is not currently in the LHD annual monitoring letter sent to each system. The NTNCWSs do not couple this form to the Lead Consumer Notice, as does the CWSs. Kris Philip pointed out that the LHDs select the sample sites, thus when they are calculating the 90th percentile, they are actually double checking the sites with the results.

From our discussion, the Region concluded that at this time, the LHDs are actively reviewing the lead and copper results and the sample locations when they calculate the 90th percentiles to ensure proper LCR monitoring is conducted by ALL NTNCWSs at the proper sample sites. After our call, I asked for verification of this statement, and Dan Dettweiler responded, "Just as with an exceeding value of an MCL, WaterTrack alerts the LHD when at least one sample for a water system exceeds the AL. A 90th percentile calculation is made only when an exceeding result alerts the LHD. For cases where there are no exceeding results, private lab samples are reviewed at the time LHDs hand-enter them into WaterTrack. State lab samples, which flow electronically via nightly downloads from the state lab database, are reviewed when pdfs of the analysis reports are, routinely, emailed by the state lab to LHDs. Beyond that, MDEQ's annual evaluation of the LHDs provides another opportunity for us to oversee the proper assigning and use of designated sampling locations."

ACTION: The Region will discuss Dan's response internally, and get back to the State with any issues/concerns.

Kris Philip said that the CWS program is requiring that the systems submit the form, but they are not enforcing whether or not the system submits the form. Often, the CWS will submit the Lead Consumer Notice and the Lead and Copper reporting form together. Kris said if 90%+ are already submitting the forms, then the State will agree to follow-up and enforce this requirement. But, if less than that, will probably be too much of a burden. Kris said they may change the way DEQ is tracking in SDWIS during FY 2016. But, the Region said SDWIS-Prime probably won't be available until 2017 at the earliest.

ACTION: Kris Philip will research with the District Offices to determine the current submittal rate of the lead and copper reporting form from CWSs; and report back to the Region.

2. Enforcement Update with Heather

NTNCWSs under Bottled Water agreements due to Arsenic MCL violations:

Per discussions with Region 5 and the February 2014 EPA/OECA memo, MDEQ has closed the old Arsenic open-ended MCL violations; however, no further quarterly monitoring is being conducted at the (±27) systems that are still under bottled water agreements. Thus, no more arsenic MCL violations will be reported for these systems and these systems will not become priority systems (ETT score of 11 or more) since only one arsenic MCL violation will be reported (5 points) even though they have a longstanding issue with arsenic noncompliance. The Region would like to discuss the pros and cons of placing these PWSs with arsenic MCL violations on quarterly monitoring as required under 40 CFR Section 141.23(c)(7); and brainstorm possible solutions.

Heather provided an update on how the State is doing in returning ETT systems to compliance; the State is doing very well in achieving its commitment for FY 2015. Heather said the Region is glad to see the State and LHD prioritization of implementation of the drinking water program and NTNCWS schools and daycares.

Referring to the NTNCWSs under BW agreements that are in violation of the Arsenic MCL, Heather said that since there are no more open-ended MCL violations in SDWIS, that no MCL violations can be reported to SDWIS unless there is monitoring to show the system is in non-compliance. Even though the LHD has indicated that these systems are drinking bottled water for public health protection, the use of bottled water cannot be a permanent solution to the fact that the system's drinking water at the tap continues to exceed the MCL for arsenic. Dan said there are 22 systems, where 8 are schools, that should be conducting quarterly monitoring. Dana said that letters have been sent (OR drafted?) to these 22 systems to require quarterly sampling for arsenic; these 22 systems are in 10 different counties so the message from the

State is consistent. A secondary effect of this new requirement for the systems, may be that they transition to another water source or install treatment sooner.

The State voiced a concern that multiple quarterly violations could potentially affect the State's relationship with the LHDs financially. Genesee and Oakland Counties have quite a number of noncommunity water systems. Multiple quarterly violations could affect the Dept of Community Health's determination as to whether the LHDs are meeting their minimum program requirements; thus receive full funding for their work with the noncommunity systems for the drinking water program. The LHDs cannot have more than 20% of their systems with violations. The Region wonders how much funding would be cut from a LHD contract if it exceeds the 20% noncompliance level set in the contract?

3. Status of Flint
   a. TTHM levels for May--Due to MDEQ district engineer June 10-RECEIVED; see link to results https://www.cityofflint.com/2015/06/01/may-water-testing-results-show-all-locations-are-within-acceptable-limits-for-tthm/
   All samples below the TTHM MCL; one site still has an LRAA above the MCL but decreased from 105 ppb in Feb to 93.5 ppb in May.

   Mike Prysby said he is getting ready to issue the construction permit to the City of Flint to install a GAC filter in July, that will remove more TOC to further reduce the potential of developing TTHMs. Mike said he has already issued a construction permit for a transmission line within the City that will help reduce water age.

   b. Lead in Flint
   Our discussions with MDEQ indicate that no phosphates/corrosion control has been added to the system since April 2014 when the source of drinking water changed to the Flint River. We understand that the City is just finishing up its second set of 6-month initial monitoring for lead; where the results will probably warrant a Corrosion Control Study to be conducted. Since Flint has lead service lines, we understand some citizen-requested lead sampling is exceeding the Action Level, and the source of drinking water will be changing again in 2016, so to start a Corrosion Control Study now doesn't make sense. The idea to ask Flint to simply add phosphate may be premature; there are many other issues and factors that must be taken into account which would require a comprehensive look at the water quality and the system before any treatment recommendations can/should be made. Miguel is recommending MDEQ and EPA? approach Flint about formally requesting EPA's Office of Research and Development in Cincinnati support on the lead in Flint drinking water issue, and request that Mike Schock, ORD, and possibly Darren Lytle, ORD, to participate in Flint's drinking water advisory committee so that a comprehensive evaluation on how to proceed can be discussed.

   Miguel provided a brief summary of the high lead results found at the residence of Citizen name / Ex. 6 Citizen name / Ex. 6 in Flint. Miguel will follow up with a written summary of the work conducted, sample results, and conclusions.
   Miguel believes that lead levels in Flint are being affected by the lack of Corrosion Control being conducted by the City, since the LCR requires 2 6-month initial monitoring for a new source. Steve Busch stated that in the Lead sampling pool, almost all of the lead sample sites are lead service lines, and the State is not seeing large increases in lead levels at the tap. Miguel

suggested that EPA experts in Lead, Mike Schock; and in distribution systems, Darren Lytle, be added to the Flint drinking water advisory committee to assist the City/State in determining the best way to proceed to minimize lead in the City's drinking water during the interim use of the Flint River, and subsequent use of Lake Huron water.

Miguel said he will send Mike Schock and Darren Lytle's contact information to Steve and Mike. Steve pointed out that the City is following the LCR requirements, and completing the requirements in a timely manner. Miguel's point is that since the LCR was promulgated 20+ years ago, that research and different situations, like Washington D.C., have educated scientists, experts, and regulators that the existing requirements in the LCR may not be as protective as previously thought. Thus, he can only make recommendations as to how to revise sampling protocols. And Miguel acknowledges that it may be another year before these regulation changes are promulgated in the Long-Term Lead and Copper Rule. In December 2015, the NDWAC recommendation is expected.

The Region asked the State if the Flint River will be a permanent supplemental source of drinking water, once the City of Flint connects with the Karegdodi pipeline from Lake Huron. Mike Prysby said that the City is currently pumping 22MGD, but the City has 40-50 MG of storage. The City is currently working on reducing its unaccounted for water losses, and these water losses are dropping. The State, through the Governor's office, provided disadvantaged system funding, $2M which includes $900K for lead detection, and pipe inspection.

4. Update on WaterTrack to SDWIS-State: The migration of WaterTrack data to SDWIS-State was number 39 on the Dept of Technology Management and Budget's (DTMB) project list last year; this year it is
number 30. It doesn't appear this project has a high priority. Does the State have any new information on the progress of this project?

Dan said that the migration of WaterTrack data to SDWIS-State has moved to a priority of 26 with DTMB so far this year. But Dan said they are going to take this project out of the que, since Ronda Page has returned to the drinking water program from DTMB. Ronda said she re-estimated DTMB's involvement in this project to be far less than originally thought, so there is no need for any program developers or the tech team. This project will only need the Data Team and the web designers only. Ronda said they can set-up on a new server and migrate the data from WaterTrack to SDWIS-State themselves; in-house. Kris Philip remembers migrating the CWS data to SDWIS-State, so she can be a resource for this project. The parts that are needed to be completed by DTMB could be contracted out. Cary McElhinney said that there is a process of withholding PWSS grant funds and re-directing the funds to a HQ contract with SAIC. Richard Benzie said the process worked well last year when MI used PWSS funds to contract with a HQ contractor to conduct NEEDS survey training.

ACTION: Jen will follow up with State and Tribal Programs Branch about the process and timing of holding back funds from the PWSS grant for the purpose of contracting with SAIC.

5. Consequences of cutting the State drinking water program to a "minimal program"
Jennifer had a discussion with Richard Benzie regarding the possibility of the Michigan State Legislature looking to have just a minimal drinking water program, meaning only a program with activities that are required by the Federal SDWA. Jennifer ultimately discussed this internally

with Tom Poy. The minimal program suggested would cut out Operator Certification, Capacity Development, Plan Review, Cross Connection Control, Source Water Protection, among other programs that are State required. Operator Certification and Capacity Development, while not required by the Federal regulations, do have financial strings attached. And Plan review/construction permits are required by the SRF program for a loan. Any recent communication with the State Legislature that they might proceed and make this possibility a reality?

Richard and Liane said there is no current threat from the State Legislature to cut the State-funded PWSS program activities. But there is a State-wide impetus to delete old programs and regulations, so this could lead to questioning the purpose of State-funded PWSS program activities. Richard is just being proactive in preparing a justification. Richard remembers a discussion many years ago about what constitutes a "comprehensive drinking water program". Tom Poy and Jennifer commented in a previous communication with Richard that the EPA PWSS primacy program and the State-funded activities in the drinking water program were meant to complement each other. To support this statement, Jennifer sent Richard some PWSS Priority guidance from the 90's, some preamble language from the 1976 SDWA found by our attorney, and language from Section 142 of the SDWA regulations from 1976 that might assist him in his justification.

6. EPA's Resource Message at the LHD Workshop in April
From the 2014 analysis of Shared Goals 2013 data, which is compliance data, for noncommunity systems, there are increasing trends of nitrate M/R violations for both NTNCWSs and TNCWSs. We discussed this on the last semi-annual call. Analysis of the 2015 Shared Goals 2014 data (April 2015) shows an improvement--that of decreasing numbers of bacti/nitrate M/R violations.

However, in light of the upcoming implementation of RTCR in 2016, the question raised here in the Region is:
Does the State have a plan with the LHDs as to what activities must be prioritized, and what will fall off the plate? Not all LHDs will need to disinvest based upon each LHD's resources, but some poorly funded LHDs may have to disinvest in some activities/drop activities that have no risk to public health.

Carrie Monosmith said that she met with the RTCR workgroup, comprised of LHD Directors/sanitarians, last fall to identify activities that the state can disinvest in during the next several years as the LHDs begin implementation of RTCR. They could not identify any activity that could be dropped. The main thing that will help the LHDs save time is to get the electronic DWR (eDWR) going, or the CMD portal, which will drastically reduce the LHDs time in inputting laboratory data into WaterTrack/SDWIS-State. From there, they can develop electronic data forms (CROMEER compliant) that the systems can submit.

Thank you!

Jennifer

shekterl@michigan.gov; 'Richard Benzie' <benzier@michigan.gov>; 'kris philip' <philipk@michigan.gov>; 'Monosmith, Carrie (DNRE)' <MONOSMITHC@michigan.gov>; 'DeBruyn, Dana (DEQ)' <DebruynD@michigan.gov>; Dettweiler, Dan (DEQ) <DETTWEILERD@michigan.gov>; Poy, Thomas

<poy.thomas@epa.gov>; Kuefler, Janet <kuefler.janet@epa.gov>; Damato, Nicholas <damato.nicholas@epa.gov>; Shoven, Heather <shoven.heather@epa.gov>; Murphy, Thomas <murphy.thomas@epa.gov>; Bair, Rita <bair.rita@epa.gov>; McElhinney, Cary <mcelhinney.cary@epa.gov>; Pniak, Edward <pniak.edward@epa.gov>; 'cookp@michigan.gov'; 'Prysby, Mike (DEQ)' <PRYSBYM@michigan.gov>; Busch, Stephen (DEQ) <BUSCHS@michigan.gov>

To: Hyde, Tinka[hyde.tinka@epa.gov]; Henry, Timothy[henry.timothy@epa.gov]; Kelley, Jeff[kelley.jeff@epa.gov]
Cc: Kaplan, Robert[kaplan.robert@epa.gov]
From: Hedman, Susan
Sent: Wed 7/1/2015 10:49:07 PM
Subject: Fwd: Comments on Flint Water

Tim -- Thanks for your help. Would you please send me the bios in a fresh e-mail that I can forward to the Mayor?

Sent from my iPhone

Begin forwarded message:

> **From:** "Hedman, Susan" <hedman.susan@epa.gov>
> **Date:** July 1, 2015 at 5:46:46 PM CDT
> **To:** Dayne Walling <dwalling@cityofflint.com>
> **Subject: Re: Comments on Flint Water**
>
> Mayor Walling --
>
> I apologize for the delay in getting back to you -- but it has taken a while for me to find out what happened.
>
> So far, I have learned that Region 5 staff received a complaint from a Flint resident about lead levels in drinking water -- and that we followed up by doing some tests to determine whether lead levels were indeed high for this particular household and, if so, to try to identify the source(s) of the problem. The EPA staffer mentioned in your e-mail prepared a draft report and apparently shared it with the citizen as a courtesy -- because her name and children's blood lead levels were mentioned in the report -- before sending the draft report up the EPA management chain for review. He subsequently received a call from the ACLU representative -- Curt Guyette -- who said he obtained a copy of the draft report from the resident and then proceeded to ask questions, which the EPA staffer attempted to answer.
>
> The preliminary draft report should not have been released outside the agency. When the report has been revised and fully vetted by EPA management, the findings and recommendations will be shared with the City and MDEQ -- and MDEQ will be responsible for following up with the City.
>
> In the meantime, if you think it would helpful, I can recommend two EPA experts on lead and drinking water distribution systems to work with the Flint Advisory Committee -- to complement Dr. Wright's TTHM expertise. If you are interested, I can provide their bios tomorrow.
>
> Again -- I apologize for taking all day to get back to you and for the manner in which this

matter was handled. Please let me know if you have any additional questions.

Best regards,

Susan

On Jun 30, 2015, at 8:36 PM, Dayne Walling <dwalling@cityofflint.com> wrote:

> Dr. Hedman,
> Please take a look at the communication I received from the City of Flint Public Information Officer about comments that may have been made about Flint Water from an EPA region 5 staff.
>
> It would be helpful for me to have the same information that was shared with the ACLU representative if indeed this is what took place. I will also be following up with the City of Flint DPW Director Howard Croft to see if he has received this information already or not.
>
> We certainly want to work to address any concerns that have arisen as the City's water treatment, distribution system, and testing processes have been examined.
>
> Thank you in advance for any assistance and information you can provide.
>
> All the best,
> Dayne
>
> --
> Dayne Walling
> Mayor, City of Flint
> City Hall, 1101 S. Saginaw St.
> Flint, MI 48502
> 810-766-7346
> mayor@cityofflint.com
> www.cityofflint.com
> follow me on twitter at http://twitter.com/mayorwalling
>
> ---------- Forwarded message ----------
> From: **Jason Lorenz** <jlorenz@cityofflint.com>
> Date: Tue, Jun 30, 2015 at 1:49 PM
> Subject: Fwd: Water treatment
> To: Natasha Henderson <nhenderson@cityofflint.com>, Dayne Walling <dwalling@cityofflint.com>, Howard Croft <hcroft@cityofflint.com>, Michael Glasgow <mglasgow@cityofflint.com>, Peter Bade <pbade@cityofflint.com>

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-Jason Lorenz
Public Information Officer
City of Flint
(810) 237-2039
jlorenz@cityofflint.com

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Cc: Kaplan, Robert[kaplan.robert@epa.gov]
From: Hedman, Susan
Sent: Thur 7/2/2015 11:15:39 PM
Subject: FW: Comments on Flint Water
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FYI

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I hope you have a Happy Fourth of July!

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To: Henry, Timothy[henry.timothy@epa.gov]
From: Hedman, Susan
Sent: Thur 7/2/2015 11:15:09 PM
Subject: RE: Lead expert resumes for Flint

;;;;
Thanks very much.

From: Henry, Timothy
Sent: Thursday, July 02, 2015 8:53 AM
To: Hedman, Susan
Cc: Hyde, Tinka; Bair, Rita; Damato, Nicholas
Subject: Lead expert resumes for Flint

Susan – attached are resumes for Mike Schock and Darren Lytle. Both are from EPA's ORD lab in Cincinnati and have expertise in treatment and corrosion control to address lead contamination. Their resumes have already been shared with the drinking water program staff in MDEQ.

Tim Henry
Deputy Director, Water Division
U.S. EPA (W-15J)
77 W. Jackson Blvd., Chicago, IL 60604-3590
Phone: 312.886.6107 Fax: 312.692.2578

To: Deltoral, Miguel[deltoral.miguel@epa.gov]; Crooks, Jennifer[crooks.jennifer@epa.gov]
Cc: Damato, Nicholas[damato.nicholas@epa.gov]; Poy, Thomas[poy.thomas@epa.gov]; Nelson, Leverett[nelson.leverett@epa.gov]
From: Bair, Rita
Sent: Mon 7/6/2015 1:38:27 PM
Subject: RE: Comments on Flint Water

Below is additional communication between Susan and the City of Flint. I am glad to see the offer of EPA assistance is getting higher level attention. However, please note the instructions to us to not have any further communication with the ACLU representative.

From: Henry, Timothy
Sent: Sunday, July 05, 2015 7:01 PM
To: Bair, Rita; Damato, Nicholas
Cc: Hyde, Tinka
Subject: Fwd: Comments on Flint Water

Please see Susan's message to the mayor. Recommend we read it as instructions to us too.

Tim Henry

Deputy Director, Water Division

US EPA Region V

312-886-6107 (office)

312-296-0690 (cell)

Sent from my iPhone

Begin forwarded message:

> **From:** "Hedman, Susan" <hedman.susan@epa.gov>
> **To:** "Hyde, Tinka" <hyde.tinka@epa.gov>, "Henry, Timothy" <henry.timothy@epa.gov>
> **Cc:** "Kaplan, Robert" <kaplan.robert@epa.gov>
> **Subject: FW: Comments on Flint Water**
>
> FYI
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Issue: Internal memo on lead contamination in Flint drinking water with draft staff findings and recommendations to management released to Flint citizen and obtained by ACLU representative, who then spoke with Region 5 staffer and sent questions to city. The draft report confirms lead contamination and

Draft EPA

EPA received a citizen complaint re high lead levels at a residence in Flint.

Not recommending you raise the issue, but in case it comes up.

Tim Henry
Deputy Director, Water Division
U.S. EPA (W-15J)
77 W. Jackson Blvd., Chicago, IL 60604-3590
Phone: 312.886.6107 Fax: 312.692.2578

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Cc: Kaplan, Robert
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To: Hyde, Tinka; Henry, Timothy
Cc: Kaplan, Robert
Subject: FW: Comments on Flint Water

FYI

From: Hedman, Susan
Sent: Thursday, July 02, 2015 6:14 PM
To: 'Dayne Walling'
Subject: RE: Comments on Flint Water

At this point, I am not inclined for my staff to have any further communications with the ACLU representative -- we need to focus on finalizing the report. In the meantime, however, I have no objection to the City letting him know that the report he was given was a preliminary draft and that it would be premature to draw any conclusions based on that draft.

Also, if you decide that you would like additional expertise in the area of treatment and corrosion control to address lead contamination – we can deploy resources from the EPA lab in Cincinnati. The resumes of two experts in this area are attached – and we can make the necessary connections if you think you would like to add to your Advisory Committee.

I hope you have a Happy Fourth of July!

From: Dayne Walling [mailto:dwalling@cityofflint.com]
Sent: Thursday, July 02, 2015 1:37 PM
To: Hedman, Susan
Subject: Re: Comments on Flint Water

And, it would be helpful if this same information could be shared with the ACLU, at least the aspects of determinations still needing to be made and the City being in the right by following the guidance through the MDEQ

On Thu, Jul 2, 2015 at 2:26 PM, Dayne Walling <dwalling@cityofflint.com> wrote:

> This is very helpful Susan, thank you. Let me discuss where we are at on our end and get back with you. I do know that we are on the same page as far as the City being prepared to respond to any followups that come through the MDEQ as that was the understanding of our team too. Thanks again, Dayne
>
> On Wed, Jul 1, 2015 at 6:46 PM, Hedman, Susan <hedman.susan@epa.gov> wrote:
>
> > Mayor Walling --
> >
> > I apologize for the delay in getting back to you -- but it has taken a while for me to find out what happened.
> >
> > So far, I have learned that Region 5 staff received a complaint from a Flint resident

about lead levels in drinking water -- and that we followed up by doing some tests to determine whether lead levels were indeed high for this particular household and, if so, to try to identify the source(s) of the problem. The EPA staffer mentioned in your e-mail prepared a draft report and apparently shared it with the citizen as a courtesy -- because her name and children's blood lead levels were mentioned in the report -- before sending the draft report up the EPA management chain for review. He subsequently received a call from the ACLU representative -- Curt Guyette -- who said he obtained a copy of the draft report from the resident and then proceeded to ask questions, which the EPA staffer attempted to answer.

The preliminary draft report should not have been released outside the agency. When the report has been revised and fully vetted by EPA management, the findings and recommendations will be shared with the City and MDEQ -- and MDEQ will be responsible for following up with the City.

In the meantime, if you think it would helpful, I can recommend two EPA experts on lead and drinking water distribution systems to work with the Flint Advisory Committee -- to complement Dr. Wright's TTHM expertise. If you are interested, I can provide their bios tomorrow.

Again -- I apologize for taking all day to get back to you and for the manner in which this matter was handled. Please let me know if you have any additional questions.

Best regards,

Susan

On Jun 30, 2015, at 8:36 PM, Dayne Walling <dwalling@cityofflint.com> wrote:

> Dr. Hedman,
>
> Please take a look at the communication I received from the City of Flint Public

Information Officer about comments that may have been made about Flint Water from an EPA region 5 staff.

It would be helpful for me to have the same information that was shared with the ACLU representative if indeed this is what took place. I will also be following up with the City of Flint DPW Director Howard Croft to see if he has received this information already or not.

We certainly want to work to address any concerns that have arisen as the City's water treatment, distribution system, and testing processes have been examined.

Thank you in advance for any assistance and information you can provide.

All the best,

Dayne

--

Dayne Walling
Mayor, City of Flint
City Hall, 1101 S. Saginaw St.
Flint, MI 48502
810-766-7346
mayor@cityofflint.com
www.cityofflint.com
follow me on twitter at http://twitter.com/mayorwalling

---------- Forwarded message ----------
From: **Jason Lorenz** <jlorenz@cityofflint.com>
Date: Tue, Jun 30, 2015 at 1:49 PM
Subject: Fwd: Water treatment

To: Natasha Henderson <nhenderson@cityofflint.com>, Dayne Walling <dwalling@cityofflint.com>, Howard Croft <hcroft@cityofflint.com>, Michael Glasgow <mglasgow@cityofflint.com>, Peter Bade <pbade@cityofflint.com>

FYI-

Curt Guyette, the reporter working for the Michigan ACLU wants to talk to someone from the City regarding the information below. It is worth noting that this is one of the co-producers of the *Hard to Swallow* Youtube video from last week, which somewhat discredits his objectivity.

Best,

-Jason Lorenz

Public Information Officer

City of Flint

(810) 237-2039

jlorenz@cityofflint.com

---------- Forwarded message ----------
From: **Curt Guyette** <cguyette@aclumich.org>
Date: Tue, Jun 30, 2015 at 1:39 PM
Subject: Water treatment
To: Jason Lorenz <jlorenz@cityofflint.com>

Jason,

I have interviewed Miguel Del Toral, regulations manager for ground and drinking water for the EPA's region 5.

He said there are a number of concerns regarding Flint.

Among other things, he said:

A major concern from a public health standpoint is the absence of corrosion control treatment in the City of Flint for mitigating lead and copper levels in the drinking water.

Recent drinking water samples indicate the presence of high lead results in the drinking water.

In addition to the lack of corrosion control, the ferric chloride being added to help address the TTHM problem can accelerate pipe corrosion, exacerbating the problem.

He also said that the city's testing procedures – instructing residents to "pre-flush" their lines before taking water samples to be tested, can lead to deceptively low results that could give Flint residents a false sense of security regarding actual lead levels in their water.

Obviously, this is a very urgent issue. I am interested to talk with someone from the city about what Mr. Del Toral had to say. Can you set up a phone interview with someone for me to talk with tomorrow? I can make myself available whenever is convenient for you.

If you need to talk with me beforehand, you can reach me on my cell phone at 586-925-0493.

Thanks for any help you can provide.

Curt Guyette

--

Dayne Walling
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--

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To: Bair, Rita[bair.rita@epa.gov]; Deltoral, Miguel[deltoral.miguel@epa.gov]; Thomas Poy[Poy.Thomas@epa.gov]
From: Crooks, Jennifer
Sent: Mon 7/6/2015 6:17:56 PM
Subject: FW: Bios for Mike Schock and Darren Lytle from EPA's Office of Research and Development

OK. Steve Busch forwarded the bios for Mike and Darren to the City of Flint. Susan has sent them too, so let's cross our fingers the City wants to involve Mike and Darren.

Jen

From: Busch, Stephen (DEQ) [mailto:BUSCHS@michigan.gov]
Sent: Monday, July 06, 2015 11:50 AM
To: Crooks, Jennifer
Subject: RE: Bios for Mike Schock and Darren Lytle from EPA's Office of Research and Development

I passed the bio info for Mike and Darren on this morning. Not sure if the City has any intention to utilize them at this point.

Stephen Busch, P.E.

Lansing and Jackson District Supervisor

Office of Drinking Water and Municipal Assistance

MDEQ

517-643-2314

From: Busch, Stephen (DEQ)
Sent: Monday, June 29, 2015 3:54 PM
To: 'Crooks, Jennifer'; Prysby, Mike (DEQ); Cook, Pat (DEQ)
Cc: Shekter Smith, Liane (DEQ); Benzie, Richard (DEQ); Philip, Kris (DEQ)
Subject: RE: Bios for Mike Schock and Darren Lytle from EPA's Office of Research and Development

Jennifer,

Mike has been out and won't likely return until next Monday 7/6. I have not been in touch with the City on this yet. The City's Pb/Cu monitoring period ends tomorrow 6/30, so by 7/10 we should also have a better idea where the City stands.

As you saw from the June 9, TTHM MCL VN, only one compliance sample (out of 24) in the last 9 months exceeded 80 ppb (Site DBP4, 94 ppb, 11/20/14).

TOC removal has been effective at the WTP, and with the upcoming GAC filter media changeout should be even more effective.

Total Coliform has not been an issue for the last 9 months, since September 2014, and work on the distribution system has improved chlorine residuals (with additional transmission main work planned over the next couple of years).

So at this point I don't think we have any questions.

Stephen Busch, P.E.

Lansing and Jackson District Supervisor

Office of Drinking Water and Municipal Assistance

MDEQ

517-643-2314

From: Crooks, Jennifer [mailto:crooks.jennifer@epa.gov]
Sent: Friday, June 26, 2015 5:41 PM
To: Busch, Stephen (DEQ); Prysby, Mike (DEQ); Cook, Pat (DEQ)
Cc: Shekter Smith, Liane (DEQ); Benzie, Richard (DEQ); Philip, Kris (DEQ)
Subject: Bios for Mike Schock and Darren Lytle from EPA's Office of Research and Development

Steve and Mike; referring to the bios I sent you all last Monday, 6/22, of Mike Schock and Darren Lytle, I was wondering if you've had a chance to discuss Mike and Darren's participation in evaluating treatment/water quality/lead levels with the City of Flint?

Perhaps I can answer any questions you might have about their participation with you all?

Jennifer

To: Nelson, Leverett[nelson.leverett@epa.gov]
From: Henry, Timothy
Sent: Wed 7/8/2015 4:21:11 PM
Subject: FW: Comments on Flint Water
Lytle Resume 2015.pdf
ATT00001.htm
Michael Schock 6-17-15.pdf
ATT00002.htm

First of a couple as background info for you

Tim Henry
Deputy Director, Water Division
U.S. EPA (W-15J)
77 W. Jackson Blvd., Chicago, IL 60604-3590
Phone: 312.886.6107 Fax: 312.692.2578

From: Henry, Timothy
Sent: Sunday, July 05, 2015 7:01 PM
To: Bair, Rita; Damato, Nicholas
Cc: Hyde, Tinka
Subject: Fwd: Comments on Flint Water

Please see Susan's message to the mayor. Recommend we read it as instructions to us too.

Tim Henry

Deputy Director, Water Division

US EPA Region V

312-886-6107 (office)

312-296-0690 (cell)

Sent from my iPhone

Begin forwarded message:

> **From:** "Hedman, Susan" <hedman.susan@epa.gov>

To: "Hyde, Tinka" <hyde.tinka@epa.gov>, "Henry, Timothy" <henry.timothy@epa.gov>
Cc: "Kaplan, Robert" <kaplan.robert@epa.gov>
Subject: FW: Comments on Flint Water

FYI

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To: 'Dayne Walling'
Subject: RE: Comments on Flint Water

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Sent: Thursday, July 02, 2015 1:37 PM
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Subject: Re: Comments on Flint Water

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Best regards,

Susan

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Thank you in advance for any assistance and information you can provide.

All the best,
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www.cityofflint.com<http://www.cityofflint.com/>
follow me on twitter at http://twitter.com/mayorwalling

---------- Forwarded message ----------
From: Jason Lorenz <jlorenz@cityofflint.com<mailto:jlorenz@cityofflint.com>>
Date: Tue, Jun 30, 2015 at 1:49 PM
Subject: Fwd: Water treatment
To: Natasha Henderson
<nhenderson@cityofflint.com<mailto:nhenderson@cityofflint.com>>, Dayne Walling
<dwalling@cityofflint.com<mailto:dwalling@cityofflint.com>>, Howard Croft
<hcroft@cityofflint.com<mailto:hcroft@cityofflint.com>>, Michael Glasgow
<mglasgow@cityofflint.com<mailto:mglasgow@cityofflint.com>>, Peter Bade
<pbade@cityofflint.com<mailto:pbade@cityofflint.com>>
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Best,

-Jason Lorenz
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jlorenz@cityofflint.com<mailto:jlorenz@cityofflint.com>

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From: Curt Guyette <cguyette@aclumich.org<mailto:cguyette@aclumich.org>>
Date: Tue, Jun 30, 2015 at 1:39 PM
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To: Jason Lorenz <jlorenz@cityofflint.com<mailto:jlorenz@cityofflint.com>>
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Among other things, he said:

A major concern from a public health standpoint is the absence of corrosion control treatment in the City of Flint for mitigating lead and copper levels in the drinking water. Recent drinking water samples indicate the presence of high lead results in the drinking water.

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Obviously, this is a very urgent issue. I am interested to talk with someone from the city about what Mr. Del Toral had to say. Can you set up a phone interview with someone for me to talk with tomorrow? I can make myself available whenever is convenient for you.

If you need to talk with me beforehand, you can reach me on my cell phone at Personal Phone / Ex. 6 Personal Phone / Ex. 6

Thanks for any help you can provide.

Curt Guyette

--
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follow me on twitter at http://twitter.com/mayorwalling

To: Deltoral, Miguel[deltoral.miguel@epa.gov]
Cc: Damato, Nicholas[damato.nicholas@epa.gov]
From: Bair, Rita
Sent: Thur 7/9/2015 6:20:06 PM
Subject: RE: One more water question

Thanks so much. For completeness, where were the 2nd and 3rd samples sent for analysis? Also, thanks for the background on your relationship with Marc Edwards, but I believe Tim is asking do we have any contractual relationship with VA Tech. Did we ask Marc to analyze the samples on our behalf or did Marc volunteer. That should complete what Tim is looking for.

From: Deltoral, Miguel
Sent: Thursday, July 09, 2015 12:29 PM
To: Bair, Rita
Cc: Damato, Nicholas
Subject: Re: One more water question

Hi Rita,

There were four sets of diagnostic (sequential) samples were collected as follows:

- 1st set: Samples collected by Citizen name / Ex. 6 and sent to VT, per request from Citizen name / Ex. 6 to Dr. Marc Edwards at VT.
- 2nd & 3rd sets: Samples were collected by myself at two residents drawing from the same water main as the Citizen name / Ex. 6 The sampling instructions and protocol used was the same as in the Chicago study. No formal QAPP was developed for these samples. The sampling and analytical procedure were the same as what the region approved for the Chicago study.
- 4th set: Collected by Citizen name / Ex. 6 shipped to and analyzed by EPA CRL following the replacement of the Citizen name / Ex. 6 service line.

All pipe samples: All work has been done by VT on behalf of Citizen name / Ex. 6

Regarding the EPA/VT connection...Dr. Edwards has conducted extensive research on lead in drinking water, corrosion and corrosion control. He and I and Mike Schock discuss lead in drinking water, corrosion and corrosion control issues from time to time to evaluate the latest published research relevant to EPA's work on the upcoming LCR revisions. Dr. Edwards is an internationally recognized expert in the area of corrosion and corrosion controland served as a technical resource for the NDWAC LCR WG. With Citizen name / Ex. 6 permission, Dr. Edwards has shared the data/information from his work with Citizen name / Ex. 6 with EPA R5.

Hope that helps clarify things.

Miguel A. Del Toral

Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

From: Bair, Rita
Sent: Wednesday, July 8, 2015 03:47 PM
To: Deltoral, Miguel
Cc: Damato, Nicholas
Subject: FW: One more water question

Miguel, First, please don't shoot the messenger. Can you provide me with a response to Tim's questions below? I told Tim that I did not believe we developed a QAPP for Flint sampling, but needed you to confirm that. I'm also not sure if you personally took the samples or not and if that makes a difference for when a QAPP is needed, but his position is that if EPA is using data that we collected for a written report that we need a QAPP. Questions are also being raised about the role of and relationship we have with VA Tech and why were they analyzing drinking water samples and pipe segments. Any information you can provide to answer those questions would be greatly appreciated.

From: Henry, Timothy
Sent: Tuesday, July 07, 2015 4:53 PM
To: Bair, Rita; Damato, Nicholas
Cc: Hyde, Tinka
Subject: FW: One more water question

Can you please get me the QAPP that covers the sampling/analysis described in the interim report Miguel drafted for Tom? Likewise, any agreement including QAPP between EPA and VA

Tech, which according to the interim report did some of the analyses.

Tim Henry
Deputy Director, Water Division
U.S. EPA (W-15J)
77 W. Jackson Blvd., Chicago, IL 60604-3590
Phone: 312.886.6107 Fax: 312.692.2578

To: Hedman, Susan[hedman.susan@epa.gov]
Cc: Hyde, Tinka[hyde.tinka@epa.gov]; Henry, Timothy[henry.timothy@epa.gov]; Rowan, Anne[rowan.anne@epa.gov]
From: Kelley, Jeff
Sent: Thur 7/9/2015 8:28:13 PM
Subject: ACLU story on Flint drinking water: Corrosive Impact: Leaded Water and One Flint Family's Toxic Nightmare

This just in … I haven't had a chance to read it yet, but I assume you'll be hearing from the mayor again shortly. Migel del Toral, the Water Division staffer quoted at length in the article, describes it as full of mischaracterizations and inaccuracies.

Corrosive Impact: Leaded Water and One Flint Family's Toxic Nightmare

Jul 09 Posted by Curt Guyette in Democracy Watch

It took a while for LeeAnne Walters to realize the full impact of the number: 13,200.

Walters—a stay-at home mom with four sons and a husband in the Navy—had seen other numbers reflecting the quality of drinking water at her Flint home that were devastating. But 13,200? She'd never seen anything like this.

The city had tested her water twice in this past March and both times found dangerously high levels of lead—104 parts per billion (ppb) and 397 ppb, respectively.

Those numbers filled her with dread, because they meant her family had been exposed to high levels of a terribly toxic heavy metal that put her children's future in jeopardy.

But it was the result of a third test of the tap water in her home, performed by independent experts at Virginia Tech university, that most stunned Walters.

“It took a while for me to wrap my head around it,” said Walters.

The VT researchers discovered lead levels in Walters’ water reached a jaw-dropping 13,200 ppb—more than twice the amount at which the U.S. Environmental Protection Agency classifies water as hazardous waste.

“When I saw those numbers I was shocked,” said Virginia Tech professor Marc Edwards, a former MacArthur Fellow and respected authority on corrosion in drinking-water systems, who oversaw the tests.

Edwards played a key role in discovering the problem of corroded water pipes and lead in Washington, D.C. drinking water during the early 2000s, in what has been described as one of the worst contamination events ever seen in an urban water system, with resulting increased incidence of childhood lead poisoning, miscarriages and fetal death.

In terms of lead levels, the Walters family’s numbers eclipsed even the worst D.C. homes.

“I have never in my 25-year career seen such outrageously high levels going into another home in the United States,” said Edwards. “This was literally hazardous-waste levels.”

But the condition of Walters’ tap water raises a much more far-reaching question: Since the city moved away from Detroit’s water system and began pumping water from the Flint River, how many other families have been put at risk by the city’s questionable testing procedures and handling of the water supply?

The Walters family surely isn’t alone in dealing with the threat of lead-laced drinking water. About half of Flint’s 40,000 homes are a half-century old or older, built at a time when water service lines were typically made of lead.

And according to various experts, including an EPA water-quality specialist, the city's actions are only exacerbating the threat.

"What the public needs is accurate information," explained Miguel Del Toral, regulations manager for the Ground Water and Drinking Water Branch of the EPA's Region 5.

Instead, the city is utilizing testing measures that almost ensure that worst-case scenarios such as the one facing the Walters family escape detection, asserted Del Toral in an internal EPA memo provided to the ACLU of Michigan.

Compounding the threat is what Del Toral describes as the continued inability of officials to adequately treat water coming into people's homes from the Flint River.

"I don't want to scare people unnecessarily," said Del Toral in a phone interview from his home in Chicago. "But there is absolutely a problem in Flint that needs to be addressed right away."

During his interview with the ACLU of Michigan, Del Toral said he was willing to go on the record with his concerns, but that he was doing so as a private citizen, not as a representative of the EPA.

EPA rules, he said, required that such interviews be routed through the agency's public affairs people. But he's willing to speak out nonetheless, he said, because of the potential harm to the public is so great, and the need to address it is so urgent.

WATERING DOWN THE TESTS

Perhaps the most vexing problem in all of this is the contamination caused by the city's decades-old network of lead and iron pipes—a problem directly connected to the switch to river water, and the city's failure to adequately treat it.

Under the U.S. Environmental Protection Agency's rules, if lead reaches a level of 15 parts per billion in water, the source of the problem must be identified and corrected.

In early March, after months of requests (and only after Walters had received a doctor's note raising concerns about problems with the water), the city finally conducted a test. It found lead levels of 104 ppb the first time. A second test recorded a level of 397 ppb.

Blood tests, taken after those water-sample numbers were reported, revealed that one of her children, a four year old, had lead poisoning.

The news was devastating, said Walters, and the concern it creates for her child's future is haunting.

"Lead can affect almost every organ and system in your body," according to the EPA's web site. "Children six years old and younger are most susceptible … Even low levels of lead in the blood of children can result in: behavior and learning problems; lower IQ and hyperactivity; slowed growth; and hearing problems."

Those dangers made Walters all the more determined to get her questions answered.

For one thing, she wanted to know why residents were being instructed to "pre-flush" water lines before drawing samples that would be tested by the city

After much searching, she found Del Toral at the EPA's Region 5 in Chicago. He explained to her that her instincts were right, and that she had good cause to be concerned about the way testing was being done.

“The practice of pre-flushing before collecting compliance samples has been shown to result in the minimization of lead capture and significant underestimation of lead levels in drinking water,” wrote Del Toral in an internal memo dated June 24.

Del Toral went on to say that the city’s testing methods were a “serious concern” because they “could provide a false sense of security to the residents of Flint regarding lead levels in the water.” As a result, he warned, residents could fail to take the necessary precautions to protect their families from lead in the drinking water.

Virginia Tech’s Edwards completely agrees with Del Toral’s assessment.

“The net effect of a ‘pre-flush’ is to greatly reduce the likelihood of detecting lead in samples collected … that would normally be present in the consumers drinking water,” Edwards wrote in an email. “I have long maintained that the practice should be banned, as it artificially lowers the amount of lead detected in samples versus typical consumer exposure.”

Asked about these concerns, city spokesman Jason Lorenz offered the following email reply: “While I cannot directly respond to Mr. Del Toral's remarks without first contacting the EPA Region 5 office, I can say that the City of Flint follows all the testing procedures and schedules as required by the U.S. EPA.”

He added that the Michigan Department of Environmental Quality (MDEQ) endorses the city’s sampling method. The MDEQ did not respond to phone calls and e-mails seeking its comments on the controversy.

Del Toral contended in an interview that what Flint’s doing is actually exploiting a “loophole” in the law.

“From a technical standpoint, there’s no justification for the way Flint is conducting its tests,” Del Toral said. “Any credible scientist will tell you [the city’s] method is not the way to catch worst-case conditions.”

There is no legitimate reason for the city's methodology, said Del Toral.

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It was Del Toral who, after determining that the lead problem plaguing the Walters family was coming from outside their home, connected LeeAnne with Edwards at Virginia Tech.

Instead of taking a single sample after a line had been "pre-flushed" under the city's direction, Edwards instructed Walters to collect a series of samples from water that had been allowed to sit in the service line long enough to accurately reflect levels the family could be exposed to under normal use.

(Meanwhile, that same service line, dug up and replaced after the sample collection, was found to be made of lead in one section and iron in another.)

Edwards tested the water and discovered that the lead contamination ranged from 200 ppb to the 13,200 ppb figure that stunned LeeAnne Walters—and should likewise shock many others.

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“I do not see any reason why there would not be serious problems occurring in at least some other Flint homes,” said Edwards.

In 1986, the U.S. Safe Drinking Water Act was amended to prohibit the use of lead pipes in public water systems. Every house built before that is potentially at risk, said Edwards. About half of Flint’s roughly 40,000 homes are at least 50 years old.

Making things worse is the fact that the high levels of chlorine being used to treat Flint’s dirty river water lead to the creation of a carcinogenic byproduct know as total trihalomethanes, or TTHM. To keep TTHM levels down, the city is adding ferric chloride. The trouble is, that additive can also accelerate the corrosion of lead and iron pipes.

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“To our knowledge, that is inaccurate,” said Flint spokesman Lorenz. “Before the plant was placed in operation, the City (and our engineering firm) had numerous discussions with DEQ personnel and inquired if corrosion-control chemicals – typically phosphates -- needed to be included in the treatment process. The use of these chemicals was not required or mandated.”

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In his memo, Del Toral warned: "The lack of mitigating treatment is especially concerning as the high lead levels [that result] will likely not be reflected in the City of Flint's compliance samples due to sampling procedures used…"

In other words, at the same time the city is exacerbating the problem, it's conducting tests that will probably fail to identify the true extent of the threat.

Del Toral described the situation as a "major concern."

"In the absence of any corrosion control treatment, lead levels in drinking water can be expected to increase," he warned in his memo.

The EPA offered Flint officials the use of agency experts to help get the situation under control, said Del Toral, but added that, to his knowledge, the city has so far declined all help.

LeeAnne Walters said that when she asked why city officials weren't taking the EPA's offer of assistance, she was told, "We don't need it."

Flint spokesman Lorenz, on the other hand, maintained that "the city continues to work closely with the MDEQ and the EPA Regional Office."

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The problem now, she said, is that water currently coming out of her tap tinged yellow and smells of rotten eggs. City officials have given her no explanation as to the possible cause of that.

It is just one more in a long list of questions that need to be addressed.

"What we need," said Walters, "are more answers."

But it's not just answers the people of Flint require.

They also need solutions. And, as Del Toral's EPA memo emphasizes, they need them immediately.

Click the link to read the full EPA Memo:
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---
Jeff Kelley
Director, Office of External Communications
U.S. EPA Region 5
ph: 312-353-1159

To: Hedman, Susan[hedman.susan@epa.gov]
Cc: Hyde, Tinka[hyde.tinka@epa.gov]; Henry, Timothy[henry.timothy@epa.gov]; Rowan, Anne[rowan.anne@epa.gov]
From: Kelley, Jeff
Sent: Thur 7/9/2015 8:28:13 PM
Subject: ACLU story on Flint drinking water: Corrosive Impact: Leaded Water and One Flint Family's Toxic Nightmare

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,,,
This just in … I haven't had a chance to read it yet, but I assume you'll be hearing from the mayor again shortly. Migel del Toral, the Water Division staffer quoted at length in the article, describes it as full of mischaracterizations and inaccuracies.

Corrosive Impact: Leaded Water and One Flint Family's Toxic Nightmare

Jul 09 Posted by Curt Guyette in Democracy Watch

It took a while for LeeAnne Walters to realize the full impact of the number: 13,200.

Walters—a stay-at home mom with four sons and a husband in the Navy—had seen other numbers reflecting the quality of drinking water at her Flint home that were devastating. But 13,200? She'd never seen anything like this.

The city had tested her water twice in this past March and both times found dangerously high levels of lead—104 parts per billion (ppb) and 397 ppb, respectively.

Those numbers filled her with dread, because they meant her family had been exposed to high levels of a terribly toxic heavy metal that put her children's future in jeopardy.

But it was the result of a third test of the tap water in her home, performed by independent experts at Virginia Tech university, that most stunned Walters.

"It took a while for me to wrap my head around it," said Walters.

The VT researchers discovered lead levels in Walters' water reached a jaw-dropping 13,200 ppb—more than twice the amount at which the U.S. Environmental Protection Agency classifies water as hazardous waste.

"When I saw those numbers I was shocked," said Virginia Tech professor Marc Edwards, a former MacArthur Fellow and respected authority on corrosion in drinking-water systems, who oversaw the tests.

Edwards played a key role in discovering the problem of corroded water pipes and lead in Washington, D.C. drinking water during the early 2000s, in what has been described as one of the worst contamination events ever seen in an urban water system, with resulting increased incidence of childhood lead poisoning, miscarriages and fetal death.

In terms of lead levels, the Walters family's numbers eclipsed even the worst D.C.

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“I have never in my 25-year career seen such outrageously high levels going into another home in the United States,” said Edwards. “This was literally hazardous-waste levels.”

But the condition of Walters’ tap water raises a much more far-reaching question: Since the city moved away from Detroit’s water system and began pumping water from the Flint River, how many other families have been put at risk by the city’s questionable testing procedures and handling of the water supply?

The Walters family surely isn’t alone in dealing with the threat of lead-laced drinking water. About half of Flint’s 40,000 homes are a half-century old or older, built at a time when water service lines were typically made of lead.

And according to various experts, including an EPA water-quality specialist, the city’s actions are only exacerbating the threat.

“What the public needs is accurate information,” explained Miguel Del Toral, regulations manager for the Ground Water and Drinking Water Branch of the EPA’s Region 5.

Instead, the city is utilizing testing measures that almost ensure that worst-case scenarios such as the one facing the Walters family escape detection, asserted Del Toral in an internal EPA memo provided to the ACLU of Michigan.

Compounding the threat is what Del Toral describes as the continued inability of officials to adequately treat water coming into people’s homes from the Flint River.

“I don’t want to scare people unnecessarily,” said Del Toral in a phone interview from his home in Chicago. “But there is absolutely a problem in Flint that needs to be addressed right away.”

During his interview with the ACLU of Michigan, Del Toral said he was willing to go on the record with his concerns, but that he was doing so as a private citizen, not as a representative of the EPA.

EPA rules, he said, required that such interviews be routed through the agency’s public affairs people. But he’s willing to speak out nonetheless, he said, because of the potential harm to the public is so great, and the need to address it is so urgent.

WATERING DOWN THE TESTS

Perhaps the most vexing problem in all of this is the contamination caused by the city’s decades-old network of lead and iron pipes—a problem directly connected to the switch to river water, and the city’s failure to adequately treat it.

Under the U.S. Environmental Protection Agency's rules, if lead reaches a level of 15 parts per billion in water, the source of the problem must be identified and corrected.

In early March, after months of requests (and only after Walters had received a doctor's note raising concerns about problems with the water), the city finally conducted a test. It found lead levels of 104 ppb the first time. A second test recorded a level of 397 ppb.

Blood tests, taken after those water-sample numbers were reported, revealed that one of her children, a four year old, had lead poisoning.

The news was devastating, said Walters, and the concern it creates for her child's future is haunting.

"Lead can affect almost every organ and system in your body," according to the EPA's web site. "Children six years old and younger are most susceptible … Even low levels of lead in the blood of children can result in: behavior and learning problems; lower IQ and hyperactivity; slowed growth; and hearing problems."

Those dangers made Walters all the more determined to get her questions answered.

For one thing, she wanted to know why residents were being instructed to "pre-flush" water lines before drawing samples that would be tested by the city

After much searching, she found Del Toral at the EPA's Region 5 in Chicago. He explained to her that her instincts were right, and that she had good cause to be concerned about the way testing was being done.

"The practice of pre-flushing before collecting compliance samples has been shown to result in the minimization of lead capture and significant underestimation of lead levels in drinking water," wrote Del Toral in an internal memo dated June 24.

Del Toral went on to say that the city's testing methods were a "serious concern" because they "could provide a false sense of security to the residents of Flint regarding lead levels in the water." As a result, he warned, residents could fail to take the necessary precautions to protect their families from lead in the drinking water.

Virginia Tech's Edwards completely agrees with Del Toral's assessment.

"The net effect of a 'pre-flush' is to greatly reduce the likelihood of detecting lead in samples collected … that would normally be present in the consumers drinking water," Edwards wrote in an email. "I have long maintained that the practice should be banned, as it artificially lowers the amount of lead detected in samples versus typical consumer exposure."

Asked about these concerns, city spokesman Jason Lorenz offered the following email reply: "While I cannot directly respond to Mr. Del Toral's remarks without first contacting the EPA Region 5 office, I can say that the City of Flint follows all the testing procedures and schedules as required by the U.S. EPA."

He added that the Michigan Department of Environmental Quality (MDEQ) endorses the city's sampling method. The MDEQ did not respond to phone calls and e-mails seeking its comments on the controversy.

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Jeff Kelley
Director, Office of External Communications
U.S. EPA Region 5
ph: 312-353-1159

To: Bair, Rita[bair.rita@epa.gov]; Damato, Nicholas[damato.nicholas@epa.gov]; Deltoral, Miguel[deltoral.miguel@epa.gov]; Porter, Andrea[porter.andrea@epa.gov]; Kuefler, Janet[kuefler.janet@epa.gov]; Shoven, Heather[shoven.heather@epa.gov]
From: Crooks, Jennifer
Sent: Thur 7/9/2015 8:44:51 PM
Subject: RE: Flint Discussion

Rita--you asked at our July 1 meeting that we provide you with any comments related to your write-up to summarize this situation with Flint, or from our meeting.

I had a discussion with Miguel earlier this week, and it seems more apparent that Flint may have violated the LCR by not maintaining corrosion control after being optimized back in the early 1990's (since they were a customer of Detroit). MDEQ did not tell Flint to maintain corrosion control; instead, they treated the change in source water as a new system. I'll bet that the State will take this personally since they are responsible for the City of Flint's actions; which isn't a bad thing, but they may get VERY defensive. We can get into the weeds and explain in detail the intent of the rule and our interpretation of the rule and why the State must issue a TT violation, but in the end; the City, the State and we must move forward TOGETHER to correct this problem. We have resources in Mike Schock and Darren Lytle and Mike Wright; and we want to work with the State and the City to address ALL of the contaminant issues going on in Flint; bacti, TTHMs, Legionella, lead--from a wholistic approach to get some form of corrosion control working that doesn't minimize treatment for bacti or TTHMs. It doesn't make sense to discuss with the State what happened in the past; we need to move forward and work with the State as our partner; as the State sees the lead levels climbing, I don't see the benefit in rubbing their nose in the fact that we're right, and they're wrong.

If the State/City agree to issue public education on how citizens must properly flush their taps, I'm wondering what the benefit would be to force the State to issue a TT violation to Flint.

Regarding the State's protocol of pre-flushing, Miguel said earlier this week on the phone with me that pre-flushing didn't really make that much difference in the lead levels when the City was using Detroit water, since there was scale existing on the inside of the lead pipes. Now that the scale appears to be disappearing, the lead levels are starting to rise even with pre-flushing being conducted prior to sampling. Yes, the levels would probably be higher without the pre-flushing, but the City may exceed the Action Level even with the pre-flushing. Maybe the issue of the State's use of pre-flushing is moot at this point; perhaps we need to focus our energy on getting the State and City to accept our offer of Darren and Mike's participation in a wholistic approach to starting corrosion control and implementing public education for lead.

Jennifer

From: Bair, Rita
Sent: Wednesday, July 01, 2015 8:32 AM
To: Damato, Nicholas; Crooks, Jennifer; Deltoral, Miguel; Porter, Andrea; Kuefler, Janet; Shoven, Heather
Subject: RE: Flint Discussion

I have been trying to wrap by brain around all the Flint issues and developed the attached summary that I thought I'd share for the meeting. Our objective for the meeting is to discuss the status of Flint, what are all the current issues are, and to all agree on next steps and messaging. If you have other objectives for the meeting please bring those up first thing at the meeting.

<< File: Flint Summary of Issues.docx >>

-----Original Appointment-----
From: Bair, Rita
Sent: Monday, June 29, 2015 12:29 PM
To: Bair, Rita; Damato, Nicholas; Crooks, Jennifer; Del Toral, Miguel; Porter, Andrea; Kuefler, Janet; Shoven, Heather
Subject: Flint Discussion
When: Wednesday, July 01, 2015 9:00 AM-10:00 AM (UTC-06:00) Central Time (US & Canada).
Where: R5Metcalfe-ConfRm-R1515B/R5-Metcalfe---15th-Floor

To: Hyde, Tinka[hyde.tinka@epa.gov]
From: Henry, Timothy
Sent: Thur 7/9/2015 9:36:36 PM
Subject: Fwd: One more water question

You have been sent the ACLU article. Can we chat tomorrow?

Tim Henry
Deputy Director, Water Division
US EPA Region V
312-886-6107 (office)
312-296-0690 (cell)

Sent from my iPhone

Begin forwarded message:

From: "Bair, Rita" <bair.rita@epa.gov>
Date: July 9, 2015 at 16:32:30 CDT
To: "Henry, Timothy" <henry.timothy@epa.gov>
Cc: "Damato, Nicholas" <damato.nicholas@epa.gov>, "Poy, Thomas" <poy.thomas@epa.gov>
Subject: FW: One more water question

Tim, Below is Miguel's response to your questions about the QAPP and Virginia Tech. I asked some follow-up questions to try to complete the response, but Miguel has not gotten back to me yet. However, I thought I would share what I received so far.

From: Bair, Rita
Sent: Thursday, July 09, 2015 1:20 PM
To: Deltoral, Miguel
Cc: Damato, Nicholas
Subject: RE: One more water question

Thanks so much. For completeness, where were the 2nd and 3rd samples sent for analysis? Also, thanks for the background on your relationship with Marc Edwards, but I believe Tim is asking do we have any contractual relationship with VA Tech. Did we ask Marc to analyze the samples on our behalf or did Marc volunteer. That should complete what Tim is looking for.

From: Deltoral, Miguel
Sent: Thursday, July 09, 2015 12:29 PM
To: Bair, Rita
Cc: Damato, Nicholas
Subject: Re: One more water question

Hi Rita,

There were four sets of diagnostic (sequential) samples were collected as follows:

- 1st set: Samples collected by Citizen name / Ex. 6 and sent to VT, per request from Citizen name / Ex. 6 Citizen name / Ex. 6 to Dr. Marc Edwards at VT.
- 2nd & 3rd sets: Samples were collected by myself at two residents drawing from the same water main as the Citizen name / Ex. 6 s. The sampling instructions and protocol used was the same as in the Chicago study. No formal QAPP was developed for these samples. The sampling and analytical procedure were the same as what the region approved for the Chicago study.
- 4th set: Collected by Citizen name / Ex. 6 shipped to and analyzed by EPA CRL following the replacement of the Walters' service line.

All pipe samples: All work has been done by VT on behalf of Citizen name / Ex. 6

Regarding the EPA/VT connection...Dr. Edwards has conducted extensive research on lead in drinking water, corrosion and corrosion control. He and I and Mike Schock discuss lead in drinking water, corrosion and corrosion control issues from time to time to evaluate the latest published research relevant to EPA's work on the upcoming LCR revisions. Dr. Edwards is an internationally recognized expert in the area of corrosion and corrosion controland served as a technical resource for the NDWAC LCR WG. With Citizen name / Ex. 6 permission, Dr. Edwards has shared the data/information from his work with Citizen name / Ex. 6 with EPA R5.

Hope that helps clarify things.

Miguel A. Del Toral

Regulations Manager

U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

From: Bair, Rita
Sent: Wednesday, July 8, 2015 03:47 PM
To: Deltoral, Miguel
Cc: Damato, Nicholas
Subject: FW: One more water question

Miguel, First, please don't shoot the messenger. Can you provide me with a response to Tim's questions below? I told Tim that I did not believe we developed a QAPP for Flint sampling, but needed you to confirm that. I'm also not sure if you personally took the samples or not and if that makes a difference for when a QAPP is needed, but his position is that if EPA is using data that we collected for a written report that we need a QAPP. Questions are also being raised about the role of and relationship we have with VA Tech and why were they analyzing drinking water samples and pipe segments. Any information you can provide to answer those questions would be greatly appreciated.

From: Henry, Timothy
Sent: Tuesday, July 07, 2015 4:53 PM
To: Bair, Rita; Damato, Nicholas
Cc: Hyde, Tinka
Subject: FW: One more water question

Can you please get me the QAPP that covers the sampling/analysis described in the interim report Miguel drafted for Tom? Likewise, any agreement including QAPP between EPA and VA Tech, which according to the interim report did some of the analyses.

Tim Henry
Deputy Director, Water Division
U.S. EPA (W-15J)
77 W. Jackson Blvd., Chicago, IL 60604-3590
Phone: 312.886.6107 Fax: 312.692.2578

To: Kelley, Jeff[kelley.jeff@epa.gov]
Cc: Hyde, Tinka[hyde.tinka@epa.gov]; Henry, Timothy[henry.timothy@epa.gov]; Rowan, Anne[rowan.anne@epa.gov]; Kaplan, Robert[kaplan.robert@epa.gov]
From: Hedman, Susan
Sent: Thur 7/9/2015 10:26:28 PM
Subject: Re: ACLU story on Flint drinking water: Corrosive Impact: Leaded Water and One Flint Family's Toxic Nightmare

Thanks. Please ask WD to prepare a concise list of the inaccuracies -- and then we can determine whether to request a correction.

Sent from my iPhone

On Jul 9, 2015, at 3:28 PM, Kelley, Jeff <kelley.jeff@epa.gov> wrote:

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Jeff Kelley
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U.S. EPA Region 5
ph: 312-353-1159

To: Bair, Rita[bair.rita@epa.gov]; Damato, Nicholas[damato.nicholas@epa.gov]
From: Henry, Timothy
Sent: Thur 7/9/2015 10:28:06 PM
Subject: Fwd: ACLU story on Flint drinking water: Corrosive Impact: Leaded Water and One Flint Family's Toxic Nightmare

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US EPA Region V
312-886-6107 (office)
312-296-0690 (cell)

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> **From:** "Hedman, Susan" <hedman.susan@epa.gov>
> **Date:** July 9, 2015 at 17:26:28 CDT
> **To:** "Kelley, Jeff" <kelley.jeff@epa.gov>
> **Cc:** "Hyde, Tinka" <hyde.tinka@epa.gov>, "Henry, Timothy" <henry.timothy@epa.gov>, "Rowan, Anne" <rowan.anne@epa.gov>, "Kaplan, Robert" <kaplan.robert@epa.gov>
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Jul 09 Posted by Curt Guyette in Democracy Watch

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Those numbers filled her with dread, because they meant her family had been exposed to high levels of a terribly toxic heavy metal that put her children's future in jeopardy.

But it was the result of a third test of the tap water in her home, performed by independent experts at Virginia Tech university, that most stunned Walters.

"It took a while for me to wrap my head around it," said Walters.

The VT researchers discovered lead levels in Walters' water reached a jaw-dropping 13,200 ppb—more than twice the amount at which the U.S. Environmental Protection Agency classifies water as hazardous waste.

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In terms of lead levels, the Walters family's numbers eclipsed even the worst D.C. homes.

"I have never in my 25-year career seen such outrageously high levels going into another home in the United States," said Edwards. "This was literally hazardous-waste levels."

But the condition of Walters' tap water raises a much more far-reaching question: Since the city moved away from Detroit's water system and began pumping water from the Flint River, how many other families have been put at risk by the city's questionable testing procedures and handling of the water supply?

The Walters family surely isn't alone in dealing with the threat of lead-laced drinking water. About half of Flint's 40,000 homes are a half-century old or older, built at a time when water service lines were typically made of lead.

And according to various experts, including an EPA water-quality specialist, the city's actions are only exacerbating the threat.

"What the public needs is accurate information," explained Miguel Del Toral, regulations manager for the Ground Water and Drinking Water Branch of the EPA's Region 5.

Instead, the city is utilizing testing measures that almost ensure that worst-case scenarios such as the one facing the Walters family escape detection, asserted Del Toral in an internal EPA memo provided to the ACLU of Michigan.

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Perhaps the most vexing problem in all of this is the contamination caused by the city's decades-old network of lead and iron pipes—a problem directly connected to the switch to river water, and the city's failure to adequately treat it.

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U.S. EPA Region 5
ph: 312-353-1159

To: Bair, Rita[bair.rita@epa.gov]; Damato, Nicholas[damato.nicholas@epa.gov]
From: Henry, Timothy
Sent: Thur 7/9/2015 10:28:07 PM
Subject: Fwd: ACLU story on Flint drinking water: Corrosive Impact: Leaded Water and One Flint Family's Toxic Nightmare

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Jeff Kelley
Director, Office of External Communications
U.S. EPA Region 5
ph: 312-353-1159

To: Deltoral, Miguel[deltoral.miguel@epa.gov]
Cc: Bair, Rita[bair.rita@epa.gov]; Hyde, Tinka[hyde.tinka@epa.gov]
From: Henry, Timothy
Sent: Thur 7/9/2015 10:40:29 PM
Subject: Fwd: ACLU story on Flint drinking water: Corrosive Impact: Leaded Water and One Flint Family's Toxic Nightmare

Miguel -
I think Rita said you were already doing generally what Susan requests. Absent any earlier due date that we might get from ORA or Tinka, please have this information ready for Tinka Monday morning so she is prepared for senior staff at 1100.

Tim Henry
Deputy Director, Water Division
US EPA Region V
312-886-6107 (office)
312-296-0690 (cell)

Sent from my iPhone

Begin forwarded message:

> **From:** "Hedman, Susan" <hedman.susan@epa.gov>
> **Date:** July 9, 2015 at 17:26:28 CDT
> **To:** "Kelley, Jeff" <kelley.jeff@epa.gov>
> **Cc:** "Hyde, Tinka" <hyde.tinka@epa.gov>, "Henry, Timothy" <henry.timothy@epa.gov>, "Rowan, Anne" <rowan.anne@epa.gov>, "Kaplan, Robert" <kaplan.robert@epa.gov>
> **Subject: Re: ACLU story on Flint drinking water: Corrosive Impact: Leaded Water and One Flint Family's Toxic Nightmare**
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Corrosive Impact: Leaded Water and One Flint Family's Toxic Nightmare

Jul 09 Posted by Curt Guyette in Democracy Watch

It took a while for LeeAnne Walters to realize the full impact of the number: 13,200.

Walters—a stay-at home mom with four sons and a husband in the Navy—had seen other numbers reflecting the quality of drinking water at her Flint home that were devastating. But 13,200? She'd never seen anything like this.

The city had tested her water twice in this past March and both times found dangerously high levels of lead—104 parts per billion (ppb) and 397 ppb, respectively.

Those numbers filled her with dread, because they meant her family had been exposed to high levels of a terribly toxic heavy metal that put her children's future in jeopardy.

But it was the result of a third test of the tap water in her home, performed by independent experts at Virginia Tech university, that most stunned Walters.

"It took a while for me to wrap my head around it," said Walters.

The VT researchers discovered lead levels in Walters' water reached a jaw-dropping 13,200 ppb—more than twice the amount at which the U.S. Environmental Protection Agency classifies water as hazardous waste.

“When I saw those numbers I was shocked,” said Virginia Tech professor Marc Edwards, a former MacArthur Fellow and respected authority on corrosion in drinking-water systems, who oversaw the tests.

Edwards played a key role in discovering the problem of corroded water pipes and lead in Washington, D.C. drinking water during the early 2000s, in what has been described as one of the worst contamination events ever seen in an urban water system, with resulting increased incidence of childhood lead poisoning, miscarriages and fetal death.

In terms of lead levels, the Walters family’s numbers eclipsed even the worst D.C. homes.

“I have never in my 25-year career seen such outrageously high levels going into another home in the United States,” said Edwards. “This was literally hazardous-waste levels.”

But the condition of Walters’ tap water raises a much more far-reaching question: Since the city moved away from Detroit’s water system and began pumping water from the Flint River, how many other families have been put at risk by the city’s questionable testing procedures and handling of the water supply?

The Walters family surely isn’t alone in dealing with the threat of lead-laced drinking water. About half of Flint’s 40,000 homes are a half-century old or older, built at a time when water service lines were typically made of lead.

And according to various experts, including an EPA water-quality specialist, the city’s actions are only exacerbating the threat.

“What the public needs is accurate information,” explained Miguel Del Toral, regulations manager for the Ground Water and Drinking Water Branch of the EPA’s Region 5.

Instead, the city is utilizing testing measures that almost ensure that worst-case scenarios such as the one facing the Walters family escape detection, asserted Del Toral in an internal EPA memo provided to the ACLU of Michigan.

Compounding the threat is what Del Toral describes as the continued inability of officials to adequately treat water coming into people’s homes from the Flint River.

“I don’t want to scare people unnecessarily,” said Del Toral in a phone interview from his home in Chicago. “But there is absolutely a problem in Flint that needs to be addressed right away.”

During his interview with the ACLU of Michigan, Del Toral said he was willing to go on the record with his concerns, but that he was doing so as a private citizen, not as a representative of the EPA.

EPA rules, he said, required that such interviews be routed through the agency’s public affairs people. But he’s willing to speak out nonetheless, he said, because of the potential harm to the public is so great, and the need to address it is so urgent.

WATERING DOWN THE TESTS

Perhaps the most vexing problem in all of this is the contamination caused by the city’s decades-old network of lead and iron pipes—a problem directly connected to the switch to river water, and the city’s failure to adequately treat it.

Under the U.S. Environmental Protection Agency's rules, if lead reaches a level of 15 parts per billion in water, the source of the problem must be identified and corrected.

In early March, after months of requests (and only after Walters had received a doctor's note raising concerns about problems with the water), the city finally conducted a test. It found lead levels of 104 ppb the first time. A second test recorded a level of 397 ppb.

Blood tests, taken after those water-sample numbers were reported, revealed that one of her children, a four year old, had lead poisoning.

The news was devastating, said Walters, and the concern it creates for her child's future is haunting.

"Lead can affect almost every organ and system in your body," according to the EPA's web site. "Children six years old and younger are most susceptible … Even low levels of lead in the blood of children can result in: behavior and learning problems; lower IQ and hyperactivity; slowed growth; and hearing problems."

Those dangers made Walters all the more determined to get her questions answered.

For one thing, she wanted to know why residents were being instructed to "pre-flush" water lines before drawing samples that would be tested by the city

After much searching, she found Del Toral at the EPA's Region 5 in Chicago. He explained to her that her instincts were right, and that she had good cause to be concerned about the way testing was being done.

“The practice of pre-flushing before collecting compliance samples has been shown to result in the minimization of lead capture and significant underestimation of lead levels in drinking water,” wrote Del Toral in an internal memo dated June 24.

Del Toral went on to say that the city’s testing methods were a “serious concern” because they “could provide a false sense of security to the residents of Flint regarding lead levels in the water.” As a result, he warned, residents could fail to take the necessary precautions to protect their families from lead in the drinking water.

Virginia Tech’s Edwards completely agrees with Del Toral’s assessment.

“The net effect of a ‘pre-flush’ is to greatly reduce the likelihood of detecting lead in samples collected … that would normally be present in the consumers drinking water,” Edwards wrote in an email. “I have long maintained that the practice should be banned, as it artificially lowers the amount of lead detected in samples versus typical consumer exposure.”

Asked about these concerns, city spokesman Jason Lorenz offered the following email reply: “While I cannot directly respond to Mr. Del Toral's remarks without first contacting the EPA Region 5 office, I can say that the City of Flint follows all the testing procedures and schedules as required by the U.S. EPA.”

He added that the Michigan Department of Environmental Quality (MDEQ) endorses the city’s sampling method. The MDEQ did not respond to phone calls and e-mails seeking its comments on the controversy.

Del Toral contended in an interview that what Flint’s doing is actually exploiting a “loophole” in the law.

“From a technical standpoint, there’s no justification for the way Flint is conducting its tests,” Del Toral said. “Any credible scientist will tell you [the city’s] method is not the way to catch worst-case conditions.”

There is no legitimate reason for the city’s methodology, said Del Toral.

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FLUSHING OUT REAL ANSWERS

It was Del Toral who, after determining that the lead problem plaguing the Walters family was coming from outside their home, connected LeeAnne with Edwards at Virginia Tech.

Instead of taking a single sample after a line had been “pre-flushed” under the city’s direction, Edwards instructed Walters to collect a series of samples from water that had been allowed to sit in the service line long enough to accurately reflect levels the family could be exposed to under normal use.

(Meanwhile, that same service line, dug up and replaced after the sample collection, was found to be made of lead in one section and iron in another.)

Edwards tested the water and discovered that the lead contamination ranged from 200 ppb to the 13,200 ppb figure that stunned LeeAnne Walters—and should likewise shock many others.

Given the age of much of Flint’s infrastructure, Edwards agrees with Del Toral’s assessment that the test results they found at the Walters home amount to an alarm going off, and others in the city need to pay attention.

“I do not see any reason why there would not be serious problems occurring in at least some other Flint homes,” said Edwards.

In 1986, the U.S. Safe Drinking Water Act was amended to prohibit the use of lead pipes in public water systems. Every house built before that is potentially at risk, said Edwards. About half of Flint’s roughly 40,000 homes are at least 50 years old.

Making things worse is the fact that the high levels of chlorine being used to treat Flint’s dirty river water lead to the creation of a carcinogenic byproduct know as total trihalomethanes, or TTHM. To keep TTHM levels down, the city is adding ferric chloride. The trouble is, that additive can also accelerate the corrosion of lead and iron pipes.

Adding yet another layer to the problem is something the city is not doing.

According to Del Toral, Flint should be adding corrosion-control chemicals designed to help keep lead and copper in pipes from leaching into drinking water. Doing so is required by federal regulations, wrote Del Toral in his memo.

“To our knowledge, that is inaccurate,” said Flint spokesman Lorenz. “Before the plant was placed in operation, the City (and our engineering firm) had numerous discussions with DEQ personnel and inquired if corrosion-control chemicals – typically phosphates --needed to be included in the treatment process. The use of these chemicals was not required or mandated.”

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Flint's ties to the Detroit water system were severed. Flint officials hailed that changeover as a cost-cutting move for a city facing a financial crisis so severe it had been placed under the control of a state-appointed emergency manager.

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In his memo, Del Toral warned: "The lack of mitigating treatment is especially concerning as the high lead levels [that result] will likely not be reflected in the City of Flint's compliance samples due to sampling procedures used…"

In other words, at the same time the city is exacerbating the problem, it's conducting tests that will probably fail to identify the true extent of the threat.

Del Toral described the situation as a "major concern."

"In the absence of any corrosion control treatment, lead levels in drinking water can be expected to increase," he warned in his memo.

The EPA offered Flint officials the use of agency experts to help get the situation under control, said Del Toral, but added that, to his knowledge, the city has so far declined all help.

LeeAnne Walters said that when she asked why city officials weren't taking the EPA's offer of assistance, she was told, "We don't need it."

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The problem now, she said, is that water currently coming out of her tap tinged yellow and smells of rotten eggs. City officials have given her no explanation as to the possible cause of that.

It is just one more in a long list of questions that need to be addressed.

“What we need,” said Walters, “are more answers.”

But it's not just answers the people of Flint require.

They also need solutions. And, as Del Toral's EPA memo emphasizes, they need them immediately.

Click the link to read the full EPA Memo:
http://www.aclumich.org/sites/default/files/file/EPAWaterReport062415.pdf

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Jeff Kelley
Director, Office of External Communications
U.S. EPA Region 5
ph: 312-353-1159

To: Bair, Rita[bair.rita@epa.gov]
Cc: Damato, Nicholas[damato.nicholas@epa.gov]
From: Deltoral, Miguel
Sent: Fri 7/10/2015 2:36:28 PM
Subject: Re: One more water question

Sorry, I am going too fast. The 2nd, 3rd and 4th sets were analyzed by our lab (R5 CRL).

EPA has no contract with VT. Marc volunteered to do the work. We have no authority to ask Marc to do anything for or on behalf of EPA. He wanted to do it for research reasons. If you recall, one of the journal manuscripts I peer-reviewed recently was from VT on the lead content in the zinc of galvanized iron pipe.

Miguel A. Del Toral
Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

From: Bair, Rita
Sent: Thursday, July 9, 2015 01:20 PM
To: Deltoral, Miguel
Cc: Damato, Nicholas
Subject: RE: One more water question

Thanks so much. For completeness, where were the 2nd and 3rd samples sent for analysis? Also, thanks for the background on your relationship with Marc Edwards, but I believe Tim is asking do we have any contractual relationship with VA Tech. Did we ask Marc to analyze the samples on our behalf or did Marc volunteer. That should complete what Tim is looking for.

From: Deltoral, Miguel
Sent: Thursday, July 09, 2015 12:29 PM
To: Bair, Rita
Cc: Damato, Nicholas
Subject: Re: One more water question

Hi Rita,

There were four sets of diagnostic (sequential) samples were collected as follows:

- 1st set: Samples collected by Citizen name / Ex. 6 and sent to VT, per request from Citizen name / Ex. 6 Citizen name / Ex. 6 Dr. Marc Edwards at VT.
- 2nd & 3rd sets: Samples were collected by myself at two residents drawing from the same water main as the Citizen name / Ex. 6 The sampling instructions and protocol used was the same as in the Chicago study. No formal QAPP was developed for these samples. The sampling and analytical procedure were the same as what the region approved for the Chicago study.
- 4th set: Collected by Citizen name / Ex. 6 shipped to and analyzed by EPA CRL following the replacement of the Citizen name / Ex. 6 service line.

All pipe samples: All work has been done by VT on behalf of Citizen name / Ex. 6

Regarding the EPA/VT connection...Dr. Edwards has conducted extensive research on lead in drinking water, corrosion and corrosion control. He and I and Mike Schock discuss lead in drinking water, corrosion and corrosion control issues from time to time to evaluate the latest published research relevant to EPA's work on the upcoming LCR revisions. Dr. Edwards is an internationally recognized expert in the area of corrosion and corrosion controland served as a technical resource for the NDWAC LCR WG. With Citizen name / Ex. 6 permission, Dr. Edwards has shared the data/information from his work with Citizen name / Ex. 6 with EPA R5.

Hope that helps clarify things.

Miguel A. Del Toral

Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

From: Bair, Rita
Sent: Wednesday, July 8, 2015 03:47 PM
To: Deltoral, Miguel
Cc: Damato, Nicholas

Subject: FW: One more water question

Miguel, First, please don't shoot the messenger. Can you provide me with a response to Tim's questions below? I told Tim that I did not believe we developed a QAPP for Flint sampling, but needed you to confirm that. I'm also not sure if you personally took the samples or not and if that makes a difference for when a QAPP is needed, but his position is that if EPA is using data that we collected for a written report that we need a QAPP. Questions are also being raised about the role of and relationship we have with VA Tech and why were they analyzing drinking water samples and pipe segments. Any information you can provide to answer those questions would be greatly appreciated.

From: Henry, Timothy
Sent: Tuesday, July 07, 2015 4:53 PM
To: Bair, Rita; Damato, Nicholas
Cc: Hyde, Tinka
Subject: FW: One more water question

Can you please get me the QAPP that covers the sampling/analysis described in the interim report Miguel drafted for Tom? Likewise, any agreement including QAPP between EPA and VA Tech, which according to the interim report did some of the analyses.

Tim Henry
Deputy Director, Water Division
U.S. EPA (W-15J)
77 W. Jackson Blvd., Chicago, IL 60604-3590
Phone: 312.886.6107 Fax: 312.692.2578

To: Henry, Timothy[henry.timothy@epa.gov]
Cc: Bair, Rita[bair.rita@epa.gov]; Hyde, Tinka[hyde.tinka@epa.gov]
From: Deltoral, Miguel
Sent: Fri 7/10/2015 2:42:32 PM
Subject: Re: ACLU story on Flint drinking water: Corrosive Impact: Leaded Water and One Flint Family's Toxic Nightmare

Hi Tim,

Yes, **Personal Matters / Ex. 6** but I will try to get that to folks asap. I will cut/paste and annotate the ACLU article text.

Miguel A. Del Toral
Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
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From: Henry, Timothy
Sent: Thursday, July 9, 2015 05:40 PM
To: Deltoral, Miguel
Cc: Bair, Rita; Hyde, Tinka
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Cc: "Hyde, Tinka" <hyde.tinka@epa.gov>, "Henry, Timothy" <henry.timothy@epa.gov>, "Rowan, Anne" <rowan.anne@epa.gov>, "Kaplan, Robert" <kaplan.robert@epa.gov>
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WATERING DOWN THE TESTS

Perhaps the most vexing problem in all of this is the contamination caused by the city's decades-old network of lead and iron pipes—a problem directly connected to the switch to river water, and the city's failure to adequately treat it.

Under the U.S. Environmental Protection Agency's rules, if lead reaches a level of 15 parts per billion in water, the source of the problem must be identified and corrected.

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ph: 312-353-1159

To: Deltoral, Miguel[deltoral.miguel@epa.gov]
Cc: Bair, Rita[bair.rita@epa.gov]; Hyde, Tinka[hyde.tinka@epa.gov]
From: Henry, Timothy
Sent: Fri 7/10/2015 3:18:01 PM
Subject: RE: ACLU story on Flint drinking water: Corrosive Impact: Leaded Water and One Flint Family's Toxic Nightmare

Thanks Miguel

Tim Henry
Deputy Director, Water Division
U.S. EPA (W-15J)
77 W. Jackson Blvd., Chicago, IL 60604-3590
Phone: 312.886.6107 Fax: 312.692.2578

From: Deltoral, Miguel
Sent: Friday, July 10, 2015 9:43 AM
To: Henry, Timothy
Cc: Bair, Rita; Hyde, Tinka
Subject: Re: ACLU story on Flint drinking water: Corrosive Impact: Leaded Water and One Flint Family's Toxic Nightmare

Hi Tim,

Yes, **Personal Matters / Ex. 6** but I will try to get that to folks asap. I will cut/paste and annotate the ACLU article text.

Miguel A. Del Toral

Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

From: Henry, Timothy

Sent: Thursday, July 9, 2015 05:40 PM
To: Deltoral, Miguel
Cc: Bair, Rita; Hyde, Tinka
Subject: Fwd: ACLU story on Flint drinking water: Corrosive Impact: Leaded Water and One Flint Family's Toxic Nightmare

Miguel -

I think Rita said you were already doing generally what Susan requests. Absent any earlier due date that we might get from ORA or Tinka, please have this information ready for Tinka Monday morning so she is prepared for senior staff at 1100.

Tim Henry

Deputy Director, Water Division

US EPA Region V

312-886-6107 (office)

312-296-0690 (cell)

Sent from my iPhone

Begin forwarded message:

> **From:** "Hedman, Susan" <hedman.susan@epa.gov>
> **Date:** July 9, 2015 at 17:26:28 CDT
> **To:** "Kelley, Jeff" <kelley.jeff@epa.gov>
> **Cc:** "Hyde, Tinka" <hyde.tinka@epa.gov>, "Henry, Timothy" <henry.timothy@epa.gov>, "Rowan, Anne" <rowan.anne@epa.gov>, "Kaplan, Robert" <kaplan.robert@epa.gov>
> **Subject: Re: ACLU story on Flint drinking water: Corrosive Impact: Leaded Water and One Flint Family's Toxic Nightmare**
>
> Thanks. Please ask WD to prepare a concise list of the inaccuracies -- and then we can determine whether to request a correction.
>
> Sent from my iPhone
>
> On Jul 9, 2015, at 3:28 PM, Kelley, Jeff <kelley.jeff@epa.gov> wrote:
>
>> This just in … I haven't had a chance to read it yet, but I assume you'll be hearing

from the mayor again shortly. Migel del Toral, the Water Division staffer quoted at length in the article, describes it as full of mischaracterizations and inaccuracies.

Corrosive Impact: Leaded Water and One Flint Family's Toxic Nightmare

Jul 09 Posted by Curt Guyette in Democracy Watch

It took a while for LeeAnne Walters to realize the full impact of the number: 13,200.

Walters—a stay-at home mom with four sons and a husband in the Navy—had seen other numbers reflecting the quality of drinking water at her Flint home that were devastating. But 13,200? She'd never seen anything like this.

The city had tested her water twice in this past March and both times found dangerously high levels of lead—104 parts per billion (ppb) and 397 ppb, respectively.

Those numbers filled her with dread, because they meant her family had been exposed to high levels of a terribly toxic heavy metal that put her children's future in jeopardy.

But it was the result of a third test of the tap water in her home, performed by independent experts at Virginia Tech university, that most stunned Walters.

"It took a while for me to wrap my head around it," said Walters.

The VT researchers discovered lead levels in Walters' water reached a jaw-dropping 13,200 ppb—more than twice the amount at which the U.S. Environmental Protection Agency classifies water as hazardous waste.

“When I saw those numbers I was shocked,” said Virginia Tech professor Marc Edwards, a former MacArthur Fellow and respected authority on corrosion in drinking-water systems, who oversaw the tests.

Edwards played a key role in discovering the problem of corroded water pipes and lead in Washington, D.C. drinking water during the early 2000s, in what has been described as one of the worst contamination events ever seen in an urban water system, with resulting increased incidence of childhood lead poisoning, miscarriages and fetal death.

In terms of lead levels, the Walters family’s numbers eclipsed even the worst D.C. homes.

“I have never in my 25-year career seen such outrageously high levels going into another home in the United States,” said Edwards. “This was literally hazardous-waste levels.”

But the condition of Walters’ tap water raises a much more far-reaching question: Since the city moved away from Detroit’s water system and began pumping water from the Flint River, how many other families have been put at risk by the city’s questionable testing procedures and handling of the water supply?

The Walters family surely isn’t alone in dealing with the threat of lead-laced drinking water. About half of Flint’s 40,000 homes are a half-century old or older, built at a time when water service lines were typically made of lead.

And according to various experts, including an EPA water-quality specialist, the city’s actions are only exacerbating the threat.

“What the public needs is accurate information,” explained Miguel Del Toral, regulations manager for the Ground Water and Drinking Water Branch of the EPA’s Region 5.

Instead, the city is utilizing testing measures that almost ensure that worst-case scenarios such as the one facing the Walters family escape detection, asserted Del Toral in an internal EPA memo provided to the ACLU of Michigan.

Compounding the threat is what Del Toral describes as the continued inability of officials to adequately treat water coming into people's homes from the Flint River.

"I don't want to scare people unnecessarily," said Del Toral in a phone interview from his home in Chicago. "But there is absolutely a problem in Flint that needs to be addressed right away."

During his interview with the ACLU of Michigan, Del Toral said he was willing to go on the record with his concerns, but that he was doing so as a private citizen, not as a representative of the EPA.

EPA rules, he said, required that such interviews be routed through the agency's public affairs people. But he's willing to speak out nonetheless, he said, because of the potential harm to the public is so great, and the need to address it is so urgent.

WATERING DOWN THE TESTS

Perhaps the most vexing problem in all of this is the contamination caused by the city's decades-old network of lead and iron pipes—a problem directly connected to the switch to river water, and the city's failure to adequately treat it.

Under the U.S. Environmental Protection Agency's rules, if lead reaches a level of 15 parts per billion in water, the source of the problem must be identified and corrected.

In early March, after months of requests (and only after Walters had received a doctor's note raising concerns about problems with the water), the city finally conducted a test. It found lead levels of 104 ppb the first time. A second test recorded a level of 397 ppb.

Blood tests, taken after those water-sample numbers were reported, revealed that one of her children, a four year old, had lead poisoning.

The news was devastating, said Walters, and the concern it creates for her child's future is haunting.

"Lead can affect almost every organ and system in your body," according to the EPA's web site. "Children six years old and younger are most susceptible … Even low levels of lead in the blood of children can result in: behavior and learning problems; lower IQ and hyperactivity; slowed growth; and hearing problems."

Those dangers made Walters all the more determined to get her questions answered.

For one thing, she wanted to know why residents were being instructed to "pre-flush" water lines before drawing samples that would be tested by the city

After much searching, she found Del Toral at the EPA's Region 5 in Chicago. He explained to her that her instincts were right, and that she had good cause to be concerned about the way testing was being done.

"The practice of pre-flushing before collecting compliance samples has been shown to result in the minimization of lead capture and significant underestimation of lead levels in drinking water," wrote Del Toral in an internal memo dated June 24.

Del Toral went on to say that the city's testing methods were a "serious concern" because they "could provide a false sense of security to the residents of Flint regarding lead levels in the water." As a result, he warned, residents could fail to take the necessary precautions to protect their families from lead in the drinking water.

Virginia Tech's Edwards completely agrees with Del Toral's assessment.

“The net effect of a ‘pre-flush’ is to greatly reduce the likelihood of detecting lead in samples collected … that would normally be present in the consumers drinking water,” Edwards wrote in an email. “I have long maintained that the practice should be banned, as it artificially lowers the amount of lead detected in samples versus typical consumer exposure.”

Asked about these concerns, city spokesman Jason Lorenz offered the following email reply: “While I cannot directly respond to Mr. Del Toral's remarks without first contacting the EPA Region 5 office, I can say that the City of Flint follows all the testing procedures and schedules as required by the U.S. EPA.”

He added that the Michigan Department of Environmental Quality (MDEQ) endorses the city’s sampling method. The MDEQ did not respond to phone calls and e-mails seeking its comments on the controversy.

Del Toral contended in an interview that what Flint’s doing is actually exploiting a “loophole” in the law.

“From a technical standpoint, there’s no justification for the way Flint is conducting its tests,” Del Toral said. “Any credible scientist will tell you [the city’s] method is not the way to catch worst-case conditions.”

There is no legitimate reason for the city’s methodology, said Del Toral.

EPA rules, he said, required that such interviews be routed through the agency’s public affairs people. But he was willing to speak out nonetheless, he said, because of the potential harm to the public.

FLUSHING OUT REAL ANSWERS

It was Del Toral who, after determining that the lead problem plaguing the Walters family was coming from outside their home, connected LeeAnne with Edwards at Virginia Tech.

Instead of taking a single sample after a line had been "pre-flushed" under the city's direction, Edwards instructed Walters to collect a series of samples from water that had been allowed to sit in the service line long enough to accurately reflect levels the family could be exposed to under normal use.

(Meanwhile, that same service line, dug up and replaced after the sample collection, was found to be made of lead in one section and iron in another.)

Edwards tested the water and discovered that the lead contamination ranged from 200 ppb to the 13,200 ppb figure that stunned LeeAnne Walters—and should likewise shock many others.

Given the age of much of Flint's infrastructure, Edwards agrees with Del Toral's assessment that the test results they found at the Walters home amount to an alarm going off, and others in the city need to pay attention.

"I do not see any reason why there would not be serious problems occurring in at least some other Flint homes," said Edwards.

In 1986, the U.S. Safe Drinking Water Act was amended to prohibit the use of lead pipes in public water systems. Every house built before that is potentially at risk, said Edwards. About half of Flint's roughly 40,000 homes are at least 50 years old.

Making things worse is the fact that the high levels of chlorine being used to treat Flint's dirty river water lead to the creation of a carcinogenic byproduct know as total trihalomethanes, or TTHM. To keep TTHM levels down, the city is adding ferric chloride. The trouble is, that additive can also accelerate the corrosion of lead and iron pipes.

Adding yet another layer to the problem is something the city is not doing.

According to Del Toral, Flint should be adding corrosion-control chemicals designed to help keep lead and copper in pipes from leaching into drinking water. Doing so is required by federal regulations, wrote Del Toral in his memo.

"To our knowledge, that is inaccurate," said Flint spokesman Lorenz. "Before the plant was placed in operation, the City (and our engineering firm) had numerous discussions with DEQ personnel and inquired if corrosion-control chemicals – typically phosphates --needed to be included in the treatment process. The use of these chemicals was not required or mandated."

What's indisputable is this:

Flint's water contained corrosion-control chemicals until April 2014, when Flint's ties to the Detroit water system were severed. Flint officials hailed that changeover as a cost-cutting move for a city facing a financial crisis so severe it had been placed under the control of a state-appointed emergency manager.

Discontinuing the use of the anti-corrosion chemicals allowed toxic scale built up on the insides of pipes over the past decades to be released into water flowing into people's homes, explained Del Toral.

In his memo, Del Toral warned: "The lack of mitigating treatment is especially concerning as the high lead levels [that result] will likely not be reflected in the City of Flint's compliance samples due to sampling procedures used…"

In other words, at the same time the city is exacerbating the problem, it's conducting tests that will probably fail to identify the true extent of the threat.

Del Toral described the situation as a "major concern."

“In the absence of any corrosion control treatment, lead levels in drinking water can be expected to increase,” he warned in his memo.

The EPA offered Flint officials the use of agency experts to help get the situation under control, said Del Toral, but added that, to his knowledge, the city has so far declined all help.

LeeAnne Walters said that when she asked why city officials weren’t taking the EPA’s offer of assistance, she was told, “We don’t need it.”

Flint spokesman Lorenz, on the other hand, maintained that “the city continues to work closely with the MDEQ and the EPA Regional Office.”

As for Walters’s family, that the city has finally replaced the service line leading to their home, and lead levels have dropped below the 15 ppb EPA action level.

The problem now, she said, is that water currently coming out of her tap tinged yellow and smells of rotten eggs. City officials have given her no explanation as to the possible cause of that.

It is just one more in a long list of questions that need to be addressed.

“What we need,” said Walters, “are more answers.”

But it’s not just answers the people of Flint require.

They also need solutions. And, as Del Toral’s EPA memo emphasizes, they need them immediately.

Click the link to read the full EPA Memo:
http://www.aclumich.org/sites/default/files/file/EPAWaterReport062415.pdf

---
Jeff Kelley
Director, Office of External Communications
U.S. EPA Region 5
ph: 312-353-1159

To: Kaplan, Robert[kaplan.robert@epa.gov]
From: Hedman, Susan
Sent: Fri 7/10/2015 3:37:07 PM
Subject: Fwd: ACLU of Michigan Report: Flint Family Pays Heavy Price for City¹s Water Woes

Sent from my iPhone

Begin forwarded message:

From: Dayne Walling <dwalling@cityofflint.com>
Date: July 10, 2015 at 8:36:10 AM CDT
To: "Hedman, Susan" <Hedman.susan@epa.gov>
Subject: Fwd: FW: ACLU of Michigan Report: Flint Family Pays Heavy Price for City¹s Water Woes

keeping you in the loop as I expect our local media will be calling around for comments
press release and document links near the bottom
thanks, Dayne

---------- Forwarded message ----------
From: **Jason Lorenz** <jlorenz@cityofflint.com>
Date: Thu, Jul 9, 2015 at 4:49 PM
Subject: Fwd: FW: ACLU of Michigan Report: Flint Family Pays Heavy Price for City¹s Water Woes
To: Natasha Henderson <nhenderson@cityofflint.com>, Dayne Walling <dwalling@cityofflint.com>, Howard Croft <hcroft@cityofflint.com>, Peter Bade <pbade@cityofflint.com>, Michael Glasgow <mglasgow@cityofflint.com>

---------- Forwarded message ----------
From: "Ronald Fonger" <RFONGER1@mlive.com>
Date: Jul 9, 2015 4:18 PM
Subject: FW: ACLU of Michigan Report: Flint Family Pays Heavy Price for City¹s Water Woes
To: "jlorenz@cityofflint.com" <jlorenz@cityofflint.com>
Cc:

Jason: Thanks for the news release on the filter. Even though I wrote late last month that the installation had started, we are putting up a post and photos taken today.

Do you want to talk or respond?

Ron Fonger

MLive Media Group

Reporter

mobile 810.347.9963

email rfonger1@mlive.com

address 540 S. Saginaw St. #101, Flint MI 48502

From: Kristin Longley
Sent: Thursday, July 09, 2015 2:37 PM
To: Ronald Fonger
Subject: FW: ACLU of Michigan Report: Flint Family Pays Heavy Price for City¹s Water Woes

Kristin Longley

Community Engagement Specialist

The Flint Journal | MLive Media Group

Find me on: MLive | Twitter | Facebook

From: Clark Hughes <CHUGHES3@mlive.com>
Date: Thursday, July 9, 2015 2:29 PM
To: Conde Nast <KLONGLEY1@MLIVE.COM>
Subject: FW: ACLU of Michigan Report: Flint Family Pays Heavy Price for City’s Water Woes

From: Darrell Dawsey [mailto:ddawsey@aclumich.org]
Sent: Thursday, July 09, 2015 2:00 PM
To: Clark Hughes
Subject: ACLU of Michigan Report: Flint Family Pays Heavy Price for City's Water Woes

FOR IMMEDIATE RELEASE:

July 9, 2015

CONTACT: Darrell Dawsey, ACLU of Michigan, 313-578-6831; ddawsey@aclumich.org

DETROIT—Describing the toxicity of one Flint household's tap water as "hazardous-waste levels," alarmed water-quality experts warned in a new ACLU of Michigan report that Flint officials are using a "loophole" in water testing guidelines that skews test results, exacerbates water woes in the city and could create a "false sense of security" about the Flint water supply.

"It is both outrageous and heartbreaking to think that families with small children have been allowed to drink, bathe and cook with water so thoroughly polluted by lead," said ACLU of Michigan executive director Kary Moss. "It's even worse to have to worry that city officials may not only be avoiding the truth about the lead levels, but may be making the problem worse. The people of Flint deserve to know whether their water is hazardous."

Interviewed as part of "Corrosive Impact," an explosive new ACLU report that focuses on one Flint family's ordeal with lead-contaminated water, university researcher Marc Edwards and EPA manager Miguel Del Toral both expressed grave concern about the city's water supply and testing measures after Edwards' independent analysis of the family's tap water revealed lead levels that were more than five times higher than what city tests showed. The report, focused on the Walters family in Flint, was compiled by ACLU of Michigan investigative reporter Curt Guyette.

"I have never in my 25-year career seen such outrageously high levels going into another home in the United States," said Edwards. "This was literally hazardous-waste levels."

Flint has come under increasing scrutiny for its poor water quality ever since an emergency manager severed the city's ties to the Detroit water system in 2014 and ordered the city to begin pumping its water from the Flint River.

The report draws heavily from an internal U.S. Environmental Protection Agency memo that asserts that the city is exacerbating the public health threat of lead-laced water while at the same time conducting tests that minimize the dangers posed to other residents throughout the city. Of greatest concern is the city's practice of having residents "pre-flush" their home plumbing systems before city officials test the water.

"The practice of pre-flushing before collecting compliance samples has been shown to result in the minimization of lead capture and significant underestimation of lead levels in the drinking water," the memo states.

The memo also says the city discontinued corrosion control treatments for lead and copper, materials found in many of the pipes in the city's aging water and sewerage infrastructure: "A major concern from a public health standpoint is the absence of corrosion control treatment in the City of Flint for mitigating lead and copper levels in the drinking water."

Del Toral, who was interviewed for the article as a private citizen, not as an EPA official, underscored the need for the city officials to respond the problem immediately.

“I don’t want to scare people unnecessarily,” said Del Toral. “But there is absolutely a problem in Flint that needs to be addressed right away.”

KEY NEWS & DOCUMENTS

Read the ACLU of Michigan's Flint water story

Watch “Corrosive Impact,” about one family’s struggle with water contamination

Read the EPA memo

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Dayne Walling
Mayor, City of Flint
City Hall, 1101 S. Saginaw St.
Flint, MI 48502
810-766-7346
mayor@cityofflint.com
www.cityofflint.com
follow me on twitter at http://twitter.com/mayorwalling

To: Kelley, Jeff[kelley.jeff@epa.gov]; Kaplan, Robert[kaplan.robert@epa.gov]
From: Hedman, Susan
Sent: Fri 7/10/2015 3:38:35 PM
Subject: Re: ACLU of Michigan Report: Flint Family Pays Heavy Price for City¹s Water Woes

I don't think we need talking points -- we need a very brief statement that we can release.

Sent from my iPhone

On Jul 10, 2015, at 10:36 AM, Kelley, Jeff <kelley.jeff@epa.gov> wrote:

> We have received an inquiry from Michigan radio this morning … we're drafting some talking points that we'll share with you.
>
> ---
> ***Jeff Kelley***
> *Director, Office of External Communications*
> *U.S. EPA Region 5*
> *ph: 312-353-1159*
>
> **From:** Hedman, Susan
> **Sent:** Friday, July 10, 2015 10:35 AM
> **To:** Kelley, Jeff
> **Subject:** Fwd: ACLU of Michigan Report: Flint Family Pays Heavy Price for City¹s Water Woes
>
> Sent from my iPhone
>
> Begin forwarded message:
>
>> **From:** Dayne Walling <dwalling@cityofflint.com>
>> **Date:** July 10, 2015 at 8:36:10 AM CDT
>> **To:** "Hedman, Susan" <Hedman.susan@epa.gov>
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>> keeping you in the loop as I expect our local media will be calling around for comments
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>> press release and document links near the bottom

thanks, Dayne

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From: **Jason Lorenz** <jlorenz@cityofflint.com>
Date: Thu, Jul 9, 2015 at 4:49 PM
Subject: Fwd: FW: ACLU of Michigan Report: Flint Family Pays Heavy Price for City¹s Water Woes
To: Natasha Henderson <nhenderson@cityofflint.com>, Dayne Walling <dwalling@cityofflint.com>, Howard Croft <hcroft@cityofflint.com>, Peter Bade <pbade@cityofflint.com>, Michael Glasgow <mglasgow@cityofflint.com>

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From: "Ronald Fonger" <RFONGER1@mlive.com>
Date: Jul 9, 2015 4:18 PM
Subject: FW: ACLU of Michigan Report: Flint Family Pays Heavy Price for City¹s Water Woes
To: "jlorenz@cityofflint.com" <jlorenz@cityofflint.com>
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Jason: Thanks for the news release on the filter. Even though I wrote late last month that the installation had started, we are putting up a post and photos taken today.

Do you want to talk or respond?

Ron Fonger

MLive Media Group

Reporter

mobile 810.347.9963

email rfonger1@mlive.com

address 540 S. Saginaw St. #101, Flint MI 48502

From: Kristin Longley
Sent: Thursday, July 09, 2015 2:37 PM
To: Ronald Fonger
Subject: FW: ACLU of Michigan Report: Flint Family Pays Heavy Price for City¹s Water Woes

Kristin Longley

Community Engagement Specialist

The Flint Journal | MLive Media Group

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FOR IMMEDIATE RELEASE:

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CONTACT: Darrell Dawsey, ACLU of Michigan, 313-578-6831; ddawsey@aclumich.org

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Michigan - ACLU, . ., ., . . United States

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Dayne Walling
Mayor, City of Flint
City Hall, 1101 S. Saginaw St.
Flint, MI 48502
810-766-7346
mayor@cityofflint.com
www.cityofflint.com
follow me on twitter at http://twitter.com/mayorwalling

To: Hedman, Susan[hedman.susan@epa.gov]; Kaplan, Robert[kaplan.robert@epa.gov]
From: Kelley, Jeff
Sent: Fri 7/10/2015 3:39:29 PM
Subject: RE: ACLU of Michigan Report: Flint Family Pays Heavy Price for City¹s Water Woes

Right, that's what I meant.

Jeff Kelley
Director, Office of External Communications
U.S. EPA Region 5
ph: 312-353-1159

From: Hedman, Susan
Sent: Friday, July 10, 2015 10:39 AM
To: Kelley, Jeff; Kaplan, Robert
Subject: Re: ACLU of Michigan Report: Flint Family Pays Heavy Price for City¹s Water Woes

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> **Date:** July 10, 2015 at 8:36:10 AM CDT
> **To:** "Hedman, Susan" <Hedman.susan@epa.gov>
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Subject: FW: ACLU of Michigan Report: Flint Family Pays Heavy Price for City¹s Water Woes

Kristin Longley

Community Engagement Specialist

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From: Clark Hughes <CHUGHES3@mlive.com>
Date: Thursday, July 9, 2015 2:29 PM
To: Conde Nast <KLONGLEY1@MLIVE.COM>
Subject: FW: ACLU of Michigan Report: Flint Family Pays Heavy Price for City’s Water Woes

From: Darrell Dawsey [mailto:ddawsey@aclumich.org]
Sent: Thursday, July 09, 2015 2:00 PM
To: Clark Hughes
Subject: ACLU of Michigan Report: Flint Family Pays Heavy Price for City's Water Woes

FOR IMMEDIATE RELEASE:

July 9, 2015

CONTACT: Darrell Dawsey, ACLU of Michigan, 313-578-6831; ddawsey@aclumich.org

DETROIT—Describing the toxicity of one Flint household's tap water as "hazardous-waste levels," alarmed water-quality experts warned in a new ACLU of Michigan report that Flint officials are using a "loophole" in water testing guidelines that skews test results, exacerbates water woes in the city and could create a "false sense of security" about the Flint water supply.

"It is both outrageous and heartbreaking to think that families with small children have been allowed to drink, bathe and cook with water so thoroughly polluted by lead," said ACLU of Michigan executive director Kary Moss. "It's even worse to have to worry that city officials may not only be avoiding the truth about the lead levels, but may be making the problem worse. The people of Flint deserve to know whether their water is hazardous."

Interviewed as part of "Corrosive Impact," an explosive new ACLU report that focuses on one Flint family's ordeal with lead-contaminated water, university researcher Marc Edwards and EPA manager Miguel Del Toral both expressed grave concern about the city's water supply and testing measures after Edwards' independent analysis of the family's tap water revealed lead levels that were more than five times higher than what city tests showed. The report, focused on the Walters family in Flint, was compiled by ACLU of Michigan investigative reporter Curt Guyette.

"I have never in my 25-year career seen such outrageously high levels going into another home in the United States," said Edwards. "This was literally hazardous-waste levels."

Flint has come under increasing scrutiny for its poor water quality ever since an emergency manager severed the city's ties to the Detroit water system in 2014 and ordered the city to begin pumping its water from the Flint River.

The report draws heavily from an internal U.S. Environmental Protection Agency memo that asserts that the city is exacerbating the public health threat of lead-laced water while at the same time conducting tests that minimize the dangers posed to other residents throughout the city. Of greatest concern is the city's practice of having residents "pre-flush" their home plumbing systems before city officials test the water.

"The practice of pre-flushing before collecting compliance samples has been shown to result in the minimization of lead capture and significant underestimation of lead levels in the drinking water," the memo states.

The memo also says the city discontinued corrosion control treatments for lead and copper, materials found in many of the pipes in the city's aging water and sewerage infrastructure: "A major concern from a public health standpoint is the absence of corrosion control treatment in the City of Flint for mitigating lead and copper levels in the drinking water."

Del Toral, who was interviewed for the article as a private citizen, not as an EPA official, underscored the need for the city officials to respond the problem immediately.

"I don't want to scare people unnecessarily," said Del Toral. "But there is absolutely a problem in Flint that needs to be addressed right away."

KEY NEWS & DOCUMENTS

Read the ACLU of Michigan's Flint water story

Watch "Corrosive Impact," about one family's struggle with water contamination

Read the EPA memo

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To: Deltoral, Miguel[deltoral.miguel@epa.gov]
Cc: Bair, Rita[bair.rita@epa.gov]; Hyde, Tinka[hyde.tinka@epa.gov]
From: Henry, Timothy
Sent: Fri 7/10/2015 4:22:54 PM
Subject: RE: ACLU story on Flint drinking water: Corrosive Impact: Leaded Water and One Flint Family's Toxic Nightmare

Talking with Tinka now, and saw also that Susan is inquiring about status of assessment. Tinka would like to get the assessment today, so please get it pulled together by COB if not earlier.

Tim Henry
Deputy Director, Water Division
U.S. EPA (W-15J)
77 W. Jackson Blvd., Chicago, IL 60604-3590
Phone: 312.886.6107 Fax: 312.692.2578

From: Deltoral, Miguel
Sent: Friday, July 10, 2015 9:43 AM
To: Henry, Timothy
Cc: Bair, Rita; Hyde, Tinka
Subject: Re: ACLU story on Flint drinking water: Corrosive Impact: Leaded Water and One Flint Family's Toxic Nightmare

Hi Tim,

Yes, I just started work for the day but I will try to get that to folks asap. I will cut/paste and annotate the ACLU article text.

Miguel A. Del Toral

Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

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Sent: Thursday, July 9, 2015 05:40 PM
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Deputy Director, Water Division

US EPA Region V

312-886-6107 (office)

312-296-0690 (cell)

Sent from my iPhone

Begin forwarded message:

> **From:** "Hedman, Susan" <hedman.susan@epa.gov>
> **Date:** July 9, 2015 at 17:26:28 CDT
> **To:** "Kelley, Jeff" <kelley.jeff@epa.gov>
> **Cc:** "Hyde, Tinka" <hyde.tinka@epa.gov>, "Henry, Timothy" <henry.timothy@epa.gov>, "Rowan, Anne" <rowan.anne@epa.gov>, "Kaplan, Robert" <kaplan.robert@epa.gov>
> **Subject: Re: ACLU story on Flint drinking water: Corrosive Impact: Leaded Water and One Flint Family's Toxic Nightmare**
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> Sent from my iPhone
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> On Jul 9, 2015, at 3:28 PM, Kelley, Jeff <kelley.jeff@epa.gov> wrote:

This just in … I haven't had a chance to read it yet, but I assume you'll be hearing from the mayor again shortly. Migel del Toral, the Water Division staffer quoted at length in the article, describes it as full of mischaracterizations and inaccuracies.

Corrosive Impact: Leaded Water and One Flint Family's Toxic Nightmare

Jul 09 Posted by Curt Guyette in Democracy Watch

It took a while for LeeAnne Walters to realize the full impact of the number: 13,200.

Walters—a stay-at home mom with four sons and a husband in the Navy—had seen other numbers reflecting the quality of drinking water at her Flint home that were devastating. But 13,200? She'd never seen anything like this.

The city had tested her water twice in this past March and both times found dangerously high levels of lead—104 parts per billion (ppb) and 397 ppb, respectively.

Those numbers filled her with dread, because they meant her family had been exposed to high levels of a terribly toxic heavy metal that put her children's future in jeopardy.

But it was the result of a third test of the tap water in her home, performed by independent experts at Virginia Tech university, that most stunned Walters.

"It took a while for me to wrap my head around it," said Walters.

The VT researchers discovered lead levels in Walters' water reached a jaw-dropping 13,200 ppb—more than twice the amount at which the U.S. Environmental Protection Agency classifies water as hazardous waste.

“When I saw those numbers I was shocked,” said Virginia Tech professor Marc Edwards, a former MacArthur Fellow and respected authority on corrosion in drinking-water systems, who oversaw the tests.

Edwards played a key role in discovering the problem of corroded water pipes and lead in Washington, D.C. drinking water during the early 2000s, in what has been described as one of the worst contamination events ever seen in an urban water system, with resulting increased incidence of childhood lead poisoning, miscarriages and fetal death.

In terms of lead levels, the Walters family’s numbers eclipsed even the worst D.C. homes.

“I have never in my 25-year career seen such outrageously high levels going into another home in the United States,” said Edwards. “This was literally hazardous-waste levels.”

But the condition of Walters’ tap water raises a much more far-reaching question: Since the city moved away from Detroit’s water system and began pumping water from the Flint River, how many other families have been put at risk by the city’s questionable testing procedures and handling of the water supply?

The Walters family surely isn’t alone in dealing with the threat of lead-laced drinking water. About half of Flint’s 40,000 homes are a half-century old or older, built at a time when water service lines were typically made of lead.

And according to various experts, including an EPA water-quality specialist, the city’s actions are only exacerbating the threat.

“What the public needs is accurate information,” explained Miguel Del Toral, regulations manager for the Ground Water and Drinking Water Branch of the EPA’s Region 5.

Instead, the city is utilizing testing measures that almost ensure that worst-case scenarios such as the one facing the Walters family escape detection, asserted Del Toral in an internal EPA memo provided to the ACLU of Michigan.

Compounding the threat is what Del Toral describes as the continued inability of officials to adequately treat water coming into people's homes from the Flint River.

"I don't want to scare people unnecessarily," said Del Toral in a phone interview from his home in Chicago. "But there is absolutely a problem in Flint that needs to be addressed right away."

During his interview with the ACLU of Michigan, Del Toral said he was willing to go on the record with his concerns, but that he was doing so as a private citizen, not as a representative of the EPA.

EPA rules, he said, required that such interviews be routed through the agency's public affairs people. But he's willing to speak out nonetheless, he said, because of the potential harm to the public is so great, and the need to address it is so urgent.

WATERING DOWN THE TESTS

Perhaps the most vexing problem in all of this is the contamination caused by the city's decades-old network of lead and iron pipes—a problem directly connected to the switch to river water, and the city's failure to adequately treat it.

Under the U.S. Environmental Protection Agency's rules, if lead reaches a level of 15 parts per billion in water, the source of the problem must be identified and corrected.

In early March, after months of requests (and only after Walters had received a doctor's note raising concerns about problems with the water), the city finally conducted a test. It found lead levels of 104 ppb the first time. A second test recorded a level of 397 ppb.

Blood tests, taken after those water-sample numbers were reported, revealed that one of her children, a four year old, had lead poisoning.

The news was devastating, said Walters, and the concern it creates for her child's future is haunting.

"Lead can affect almost every organ and system in your body," according to the EPA's web site. "Children six years old and younger are most susceptible … Even low levels of lead in the blood of children can result in: behavior and learning problems; lower IQ and hyperactivity; slowed growth; and hearing problems."

Those dangers made Walters all the more determined to get her questions answered.

For one thing, she wanted to know why residents were being instructed to "pre-flush" water lines before drawing samples that would be tested by the city

After much searching, she found Del Toral at the EPA's Region 5 in Chicago. He explained to her that her instincts were right, and that she had good cause to be concerned about the way testing was being done.

"The practice of pre-flushing before collecting compliance samples has been shown to result in the minimization of lead capture and significant underestimation of lead levels in drinking water," wrote Del Toral in an internal memo dated June 24.

Del Toral went on to say that the city's testing methods were a "serious concern" because they "could provide a false sense of security to the residents of Flint regarding lead levels in the water." As a result, he warned, residents could fail to take the necessary precautions to protect their families from lead in the drinking water.

Virginia Tech's Edwards completely agrees with Del Toral's assessment.

"The net effect of a 'pre-flush' is to greatly reduce the likelihood of detecting lead in samples collected … that would normally be present in the consumers drinking water," Edwards wrote in an email. "I have long maintained that the practice should be banned, as it artificially lowers the amount of lead detected in samples versus typical consumer exposure."

Asked about these concerns, city spokesman Jason Lorenz offered the following email reply: "While I cannot directly respond to Mr. Del Toral's remarks without first contacting the EPA Region 5 office, I can say that the City of Flint follows all the testing procedures and schedules as required by the U.S. EPA."

He added that the Michigan Department of Environmental Quality (MDEQ) endorses the city's sampling method. The MDEQ did not respond to phone calls and e-mails seeking its comments on the controversy.

Del Toral contended in an interview that what Flint's doing is actually exploiting a "loophole" in the law.

"From a technical standpoint, there's no justification for the way Flint is conducting its tests," Del Toral said. "Any credible scientist will tell you [the city's] method is not the way to catch worst-case conditions."

There is no legitimate reason for the city's methodology, said Del Toral.

EPA rules, he said, required that such interviews be routed through the agency's public affairs people. But he was willing to speak out nonetheless, he said, because of the potential harm to the public.

FLUSHING OUT REAL ANSWERS

It was Del Toral who, after determining that the lead problem plaguing the Walters family was coming from outside their home, connected LeeAnne with Edwards at Virginia Tech.

Instead of taking a single sample after a line had been “pre-flushed” under the city’s direction, Edwards instructed Walters to collect a series of samples from water that had been allowed to sit in the service line long enough to accurately reflect levels the family could be exposed to under normal use.

(Meanwhile, that same service line, dug up and replaced after the sample collection, was found to be made of lead in one section and iron in another.)

Edwards tested the water and discovered that the lead contamination ranged from 200 ppb to the 13,200 ppb figure that stunned LeeAnne Walters—and should likewise shock many others.

Given the age of much of Flint’s infrastructure, Edwards agrees with Del Toral’s assessment that the test results they found at the Walters home amount to an alarm going off, and others in the city need to pay attention.

“I do not see any reason why there would not be serious problems occurring in at least some other Flint homes,” said Edwards.

In 1986, the U.S. Safe Drinking Water Act was amended to prohibit the use of lead pipes in public water systems. Every house built before that is potentially at risk, said Edwards. About half of Flint’s roughly 40,000 homes are at least 50 years old.

Making things worse is the fact that the high levels of chlorine being used to treat Flint’s dirty river water lead to the creation of a carcinogenic byproduct know as total trihalomethanes, or TTHM. To keep TTHM levels down, the city is adding ferric chloride. The trouble is, that additive can also accelerate the corrosion of lead and iron pipes.

Adding yet another layer to the problem is something the city is not doing.

According to Del Toral, Flint should be adding corrosion-control chemicals designed to help keep lead and copper in pipes from leaching into drinking water. Doing so is required by federal regulations, wrote Del Toral in his memo.

“To our knowledge, that is inaccurate,” said Flint spokesman Lorenz. “Before the plant was placed in operation, the City (and our engineering firm) had numerous discussions with DEQ personnel and inquired if corrosion-control chemicals – typically phosphates --needed to be included in the treatment process. The use of these chemicals was not required or mandated.”

What’s indisputable is this:

Flint’s water contained corrosion-control chemicals until April 2014, when Flint’s ties to the Detroit water system were severed. Flint officials hailed that changeover as a cost-cutting move for a city facing a financial crisis so severe it had been placed under the control of a state-appointed emergency manager.

Discontinuing the use of the anti-corrosion chemicals allowed toxic scale built up on the insides of pipes over the past decades to be released into water flowing into people’s homes, explained Del Toral.

In his memo, Del Toral warned: “The lack of mitigating treatment is especially concerning as the high lead levels [that result] will likely not be reflected in the City of Flint’s compliance samples due to sampling procedures used…”

In other words, at the same time the city is exacerbating the problem, it’s conducting tests that will probably fail to identify the true extent of the threat.

Del Toral described the situation as a “major concern.”

“In the absence of any corrosion control treatment, lead levels in drinking water can be expected to increase,” he warned in his memo.

The EPA offered Flint officials the use of agency experts to help get the situation under control, said Del Toral, but added that, to his knowledge, the city has so far declined all help.

LeeAnne Walters said that when she asked why city officials weren’t taking the EPA’s offer of assistance, she was told, “We don’t need it.”

Flint spokesman Lorenz, on the other hand, maintained that “the city continues to work closely with the MDEQ and the EPA Regional Office.”

As for Walters’s family, that the city has finally replaced the service line leading to their home, and lead levels have dropped below the 15 ppb EPA action level.

The problem now, she said, is that water currently coming out of her tap tinged yellow and smells of rotten eggs. City officials have given her no explanation as to the possible cause of that.

It is just one more in a long list of questions that need to be addressed.

“What we need,” said Walters, “are more answers.”

But it’s not just answers the people of Flint require.

They also need solutions. And, as Del Toral’s EPA memo emphasizes, they need them immediately.

Click the link to read the full EPA Memo:
http://www.aclumich.org/sites/default/files/file/EPAWaterReport062415.pdf

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Jeff Kelley
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U.S. EPA Region 5
ph: 312-353-1159

Cc: Bair, Rita[bair.rita@epa.gov]; Hyde, Tinka[hyde.tinka@epa.gov]; Damato, Nicholas[damato.nicholas@epa.gov]
To: Henry, Timothy[henry.timothy@epa.gov]
From: Deltoral, Miguel
Sent: Fri 7/10/2015 4:41:16 PM
Subject: Re: ACLU story on Flint drinking water: Corrosive Impact: Leaded Water and One Flint Family's Toxic Nightmare
MDT comments on ACLU article 07-10-2015.docx

Here you go. If you have any questions or need any additional information, please let me know.

Miguel A. Del Toral
Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

From: Henry, Timothy
Sent: Friday, July 10, 2015 10:18 AM
To: Deltoral, Miguel
Cc: Bair, Rita; Hyde, Tinka
Subject: RE: ACLU story on Flint drinking water: Corrosive Impact: Leaded Water and One Flint Family's Toxic Nightmare

Thanks Miguel

Tim Henry
Deputy Director, Water Division
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Discontinuing the use of the anti-corrosion chemicals allowed toxic scale built up on the insides of pipes over the past decades to be released into water flowing into people's homes, explained Del Toral.

In his memo, Del Toral warned: "The lack of mitigating treatment is especially concerning as the high lead levels [that result] will likely not be reflected in the City of Flint's compliance samples due to sampling procedures used…"

In other words, at the same time the city is exacerbating the problem, it's conducting tests that will probably fail to identify the true extent of the threat.

Del Toral described the situation as a "major concern."

"In the absence of any corrosion control treatment, lead levels in drinking water can be expected to increase," he warned in his memo.

The EPA offered Flint officials the use of agency experts to help get the situation under control, said Del Toral, but added that, to his knowledge, the city has so far declined all help.

LeeAnne Walters said that when she asked why city officials weren't taking the EPA's offer of assistance, she was told, "We don't need it."

Flint spokesman Lorenz, on the other hand, maintained that "the city continues to work closely with the MDEQ and the EPA Regional Office."

As for Walters's family, that the city has finally replaced the service line leading to their home, and lead levels have dropped below the 15 ppb EPA action level.

The problem now, she said, is that water currently coming out of her tap tinged yellow and smells of rotten eggs. City officials have given her no explanation as to the possible cause of that.

It is just one more in a long list of questions that need to be addressed.

“What we need,” said Walters, “are more answers.”

But it’s not just answers the people of Flint require.

They also need solutions. And, as Del Toral’s EPA memo emphasizes, they need them immediately.

Click the link to read the full EPA Memo:
http://www.aclumich.org/sites/default/files/file/EPAWaterReport062415.pdf

---
Jeff Kelley
Director, Office of External Communications
U.S. EPA Region 5
ph: 312-353-1159

To: Bair, Rita[bair.rita@epa.gov]; Henry, Timothy[henry.timothy@epa.gov]
Cc: Hyde, Tinka[hyde.tinka@epa.gov]; Damato, Nicholas[damato.nicholas@epa.gov]
From: Deltoral, Miguel
Sent: Fri 7/10/2015 4:49:27 PM
Subject: Re: ACLU story on Flint drinking water: Corrosive Impact: Leaded Water and One Flint Family's Toxic Nightmare

Up to you folks, but just so you know...Flint is likely to have an LCR monitoring violation and may end up with a lead action level exceedance as well for the January through June 2015 monitoring period. Also, during yesterday's compliance training, OGWDW confirms that a system cannot hit the reset button when switching sources, so they will also have a treatment technique violation as I had indicated.

I think they only got about 80 of the required 100 compliance samples for lead/copper and that was on the last day of June. The number may change when they evaluate customer-requested samples. Based on the results they had in-house on June 30 (last day of compliance period) they were borderline on exceeding the lead action level, even without counting all of the relevant customer-requested samples from Tier 1 sites.

Miguel A. Del Toral
Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

From: Bair, Rita
Sent: Friday, July 10, 2015 11:29 AM
To: Henry, Timothy; Deltoral, Miguel
Cc: Hyde, Tinka; Damato, Nicholas
Subject: RE: ACLU story on Flint drinking water: Corrosive Impact: Leaded Water and One Flint Family's Toxic Nightmare

Do you think that we just want a line-by-line rebuttal or should we also be putting together a general statement about the Region's position on the Flint situation – like, Flint remains in compliance with its implementation of Federal LCR as currently written and implemented by MDEQ and/or that the Region's concerns are above and beyond the current regulatory implementation? Miguel, would that be correct?

From: Henry, Timothy
Sent: Friday, July 10, 2015 11:23 AM
To: Deltoral, Miguel

Cc: Bair, Rita; Hyde, Tinka
Subject: RE: ACLU story on Flint drinking water: Corrosive Impact: Leaded Water and One Flint Family's Toxic Nightmare

Talking with Tinka now, and saw also that Susan is inquiring about status of assessment. Tinka would like to get the assessment today, so please get it pulled together by COB if not earlier.

Tim Henry
Deputy Director, Water Division
U.S. EPA (W-15J)
77 W. Jackson Blvd., Chicago, IL 60604-3590
Phone: 312.886.6107 Fax: 312.692.2578

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Sent: Friday, July 10, 2015 9:43 AM
To: Henry, Timothy
Cc: Bair, Rita; Hyde, Tinka
Subject: Re: ACLU story on Flint drinking water: Corrosive Impact: Leaded Water and One Flint Family's Toxic Nightmare

Hi Tim,

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From: Henry, Timothy

Sent: Thursday, July 9, 2015 05:40 PM
To: Deltoral, Miguel
Cc: Bair, Rita; Hyde, Tinka
Subject: Fwd: ACLU story on Flint drinking water: Corrosive Impact: Leaded Water and One Flint Family's Toxic Nightmare

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US EPA Region V

312-886-6107 (office)

Personal Phone / Ex. 6

Sent from my iPhone

Begin forwarded message:

> **From:** "Hedman, Susan" <hedman.susan@epa.gov>
> **Date:** July 9, 2015 at 17:26:28 CDT
> **To:** "Kelley, Jeff" <kelley.jeff@epa.gov>
> **Cc:** "Hyde, Tinka" <hyde.tinka@epa.gov>, "Henry, Timothy" <henry.timothy@epa.gov>, "Rowan, Anne" <rowan.anne@epa.gov>, "Kaplan, Robert" <kaplan.robert@epa.gov>
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Jul 09 Posted by Curt Guyette in Democracy Watch

It took a while for LeeAnne Walters to realize the full impact of the number: 13,200.

Walters—a stay-at home mom with four sons and a husband in the Navy—had seen other numbers reflecting the quality of drinking water at her Flint home that were devastating. But 13,200? She'd never seen anything like this.

The city had tested her water twice in this past March and both times found dangerously high levels of lead—104 parts per billion (ppb) and 397 ppb, respectively.

Those numbers filled her with dread, because they meant her family had been exposed to high levels of a terribly toxic heavy metal that put her children's future in jeopardy.

But it was the result of a third test of the tap water in her home, performed by independent experts at Virginia Tech university, that most stunned Walters.

"It took a while for me to wrap my head around it," said Citizen name / Ex. 6

The VT researchers discovered lead levels i Citizen name / Ex. 6 ater reached a jaw-dropping 13,200 ppb—more than twice the amount at .S. Environmental Protection Agency classifies water as hazardous waste.

“When I saw those numbers I was shocked,” said Virginia Tech professor Marc Edwards, a former MacArthur Fellow and respected authority on corrosion in drinking-water systems, who oversaw the tests.

Edwards played a key role in discovering the problem of corroded water pipes and lead in Washington, D.C. drinking water during the early 2000s, in what has been described as one of the worst contamination events ever seen in an urban water system, with resulting increased incidence of childhood lead poisoning, miscarriages and fetal death.

In terms of lead levels, the Walters family’s numbers eclipsed even the worst D.C. homes.

“I have never in my 25-year career seen such outrageously high levels going into another home in the United States,” said Edwards. “This was literally hazardous-waste levels.”

But the condition of Walters’ tap water raises a much more far-reaching question: Since the city moved away from Detroit’s water system and began pumping water from the Flint River, how many other families have been put at risk by the city’s questionable testing procedures and handling of the water supply?

The Walters family surely isn’t alone in dealing with the threat of lead-laced drinking water. About half of Flint’s 40,000 homes are a half-century old or older, built at a time when water service lines were typically made of lead.

And according to various experts, including an EPA water-quality specialist, the city’s actions are only exacerbating the threat.

“What the public needs is accurate information,” explained Miguel Del Toral, regulations manager for the Ground Water and Drinking Water Branch of the EPA’s Region 5.

Instead, the city is utilizing testing measures that almost ensure that worst-case scenarios such as the one facing the Walters family escape detection, asserted Del Toral in an internal EPA memo provided to the ACLU of Michigan.

Compounding the threat is what Del Toral describes as the continued inability of officials to adequately treat water coming into people's homes from the Flint River.

"I don't want to scare people unnecessarily," said Del Toral in a phone interview from his home in Chicago. "But there is absolutely a problem in Flint that needs to be addressed right away."

During his interview with the ACLU of Michigan, Del Toral said he was willing to go on the record with his concerns, but that he was doing so as a private citizen, not as a representative of the EPA.

EPA rules, he said, required that such interviews be routed through the agency's public affairs people. But he's willing to speak out nonetheless, he said, because of the potential harm to the public is so great, and the need to address it is so urgent.

WATERING DOWN THE TESTS

Perhaps the most vexing problem in all of this is the contamination caused by the city's decades-old network of lead and iron pipes—a problem directly connected to the switch to river water, and the city's failure to adequately treat it.

Under the U.S. Environmental Protection Agency's rules, if lead reaches a level of 15 parts per billion in water, the source of the problem must be identified and corrected.

In early March, after months of requests (and only after Citizen name / Ex. 6 had received a doctor's note raising concerns about problems with the water), the city finally conducted a test. It found lead levels of 104 ppb the first time. A second test recorded a level of 397 ppb.

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"Lead can affect almost every organ and system in your body," according to the EPA's web site. "Children six years old and younger are most susceptible … Even low levels of lead in the blood of children can result in: behavior and learning problems; lower IQ and hyperactivity; slowed growth; and hearing problems."

Those dangers made Citizen name / Ex. 6 all the more determined to get her questions answered.

For one thing, she wanted to know why residents were being instructed to "pre-flush" water lines before drawing samples that would be tested by the city

After much searching, she found Del Toral at the EPA's Region 5 in Chicago. He explained to her that her instincts were right, and that she had good cause to be concerned about the way testing was being done.

"The practice of pre-flushing before collecting compliance samples has been shown to result in the minimization of lead capture and significant underestimation of lead levels in drinking water," wrote Del Toral in an internal memo dated June 24.

Del Toral went on to say that the city's testing methods were a "serious concern" because they "could provide a false sense of security to the residents of Flint regarding lead levels in the water." As a result, he warned, residents could fail to take the necessary precautions to protect their families from lead in the drinking water.

Virginia Tech's Edwards completely agrees with Del Toral's assessment.

“The net effect of a ‘pre-flush’ is to greatly reduce the likelihood of detecting lead in samples collected … that would normally be present in the consumers drinking water,” Edwards wrote in an email. “I have long maintained that the practice should be banned, as it artificially lowers the amount of lead detected in samples versus typical consumer exposure.”

Asked about these concerns, city spokesman Jason Lorenz offered the following email reply: “While I cannot directly respond to Mr. Del Toral's remarks without first contacting the EPA Region 5 office, I can say that the City of Flint follows all the testing procedures and schedules as required by the U.S. EPA.”

He added that the Michigan Department of Environmental Quality (MDEQ) endorses the city’s sampling method. The MDEQ did not respond to phone calls and e-mails seeking its comments on the controversy.

Del Toral contended in an interview that what Flint’s doing is actually exploiting a “loophole” in the law.

“From a technical standpoint, there’s no justification for the way Flint is conducting its tests,” Del Toral said. “Any credible scientist will tell you [the city’s] method is not the way to catch worst-case conditions.”

There is no legitimate reason for the city’s methodology, said Del Toral.

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It was Del Toral who, after determining that the lead problem plaguing the Citizen name / Ex. 6 family was coming from outside their home, connected Citizen name / Ex. 6 with Edwards at Virginia Tech.

Instead of taking a single sample after a line had been “pre-flushed” under the city’s direction, Edwards instructed Walters to collect a series of samples from water that had been allowed to sit in the service line long enough to accurately reflect levels the family could be exposed to under normal use.

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Edwards tested the water and discovered that the lead contamination ranged from 200 ppb to the 13,200 ppb figure that stunned **Citizen name / Ex. 6**—and should likewise shock many others.

Given the age of much of Flint’s infrastructure, Edwards agrees with Del Toral’s assessment that the test results they found at the Walters home amount to an alarm going off, and others in the city need to pay attention.

“I do not see any reason why there would not be serious problems occurring in at least some other Flint homes,” said Edwards.

In 1986, the U.S. Safe Drinking Water Act was amended to prohibit the use of lead pipes in public water systems. Every house built before that is potentially at risk, said Edwards. About half of Flint’s roughly 40,000 homes are at least 50 years old.

Making things worse is the fact that the high levels of chlorine being used to treat Flint’s dirty river water lead to the creation of a carcinogenic byproduct know as total trihalomethanes, or TTHM. To keep TTHM levels down, the city is adding ferric chloride. The trouble is, that additive can also accelerate the corrosion of lead and iron pipes.

Adding yet another layer to the problem is something the city is not doing.

According to Del Toral, Flint should be adding corrosion-control chemicals designed to help keep lead and copper in pipes from leaching into drinking water. Doing so is required by federal regulations, wrote Del Toral in his memo.

“To our knowledge, that is inaccurate,” said Flint spokesman Lorenz. “Before the plant was placed in operation, the City (and our engineering firm) had numerous discussions with DEQ personnel and inquired if corrosion-control chemicals – typically phosphates --needed to be included in the treatment process. The use of these chemicals was not required or mandated.”

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---
Jeff Kelley
Director, Office of External Communications
U.S. EPA Region 5
ph: 312-353-1159

To: Deltoral, Miguel[deltoral.miguel@epa.gov]
Cc: Bair, Rita[bair.rita@epa.gov]; Hyde, Tinka[hyde.tinka@epa.gov]; Damato, Nicholas[damato.nicholas@epa.gov]
From: Henry, Timothy
Sent: Fri 7/10/2015 5:05:32 PM
Subject: RE: ACLU story on Flint drinking water: Corrosive Impact: Leaded Water and One Flint Family's Toxic Nightmare

Thanks Miguel. Rita and Nick, please give this a careful read and if you see anything that is unclear or raises questions, please work with Miguel to clear up. Let me know when you are all satisfied and I will take a look and send it on to Tinka, Susan and Jeff.

Tim Henry
Deputy Director, Water Division
U.S. EPA (W-15J)
77 W. Jackson Blvd., Chicago, IL 60604-3590
Phone: 312.886.6107 Fax: 312.692.2578

From: Deltoral, Miguel
Sent: Friday, July 10, 2015 11:41 AM
To: Henry, Timothy
Cc: Bair, Rita; Hyde, Tinka; Damato, Nicholas
Subject: Re: ACLU story on Flint drinking water: Corrosive Impact: Leaded Water and One Flint Family's Toxic Nightmare
Importance: High

Here you go. If you have any questions or need any additional information, please let me know.

Miguel A. Del Toral

Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

From: Henry, Timothy
Sent: Friday, July 10, 2015 10:18 AM
To: Deltoral, Miguel

Cc: Bair, Rita; Hyde, Tinka
Subject: RE: ACLU story on Flint drinking water: Corrosive Impact: Leaded Water and One Flint Family's Toxic Nightmare

Thanks Miguel

Tim Henry
Deputy Director, Water Division
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77 W. Jackson Blvd., Chicago, IL 60604-3590
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From: Deltoral, Miguel
Sent: Friday, July 10, 2015 9:43 AM
To: Henry, Timothy
Cc: Bair, Rita; Hyde, Tinka
Subject: Re: ACLU story on Flint drinking water: Corrosive Impact: Leaded Water and One Flint Family's Toxic Nightmare

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Chicago, IL 60604
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From: Henry, Timothy
Sent: Thursday, July 9, 2015 05:40 PM

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Subject: Fwd: ACLU story on Flint drinking water: Corrosive Impact: Leaded Water and One Flint Family's Toxic Nightmare

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US EPA Region V

312-886-6107 (office)

312-296-0690 (cell)

Sent from my iPhone

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> **From:** "Hedman, Susan" <hedman.susan@epa.gov>
> **Date:** July 9, 2015 at 17:26:28 CDT
> **To:** "Kelley, Jeff" <kelley.jeff@epa.gov>
> **Cc:** "Hyde, Tinka" <hyde.tinka@epa.gov>, "Henry, Timothy" <henry.timothy@epa.gov>, "Rowan, Anne" <rowan.anne@epa.gov>, "Kaplan, Robert" <kaplan.robert@epa.gov>
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In 1986, the U.S. Safe Drinking Water Act was amended to prohibit the use of lead pipes in public water systems. Every house built before that is potentially at risk, said Edwards. About half of Flint's roughly 40,000 homes are at least 50 years old.

Making things worse is the fact that the high levels of chlorine being used to treat Flint's dirty river water lead to the creation of a carcinogenic byproduct know as total trihalomethanes, or TTHM. To keep TTHM levels down, the city is adding ferric chloride. The trouble is, that additive can also accelerate the corrosion of lead and iron pipes.

Adding yet another layer to the problem is something the city is not doing.

According to Del Toral, Flint should be adding corrosion-control chemicals designed to help keep lead and copper in pipes from leaching into drinking water. Doing so is required by federal regulations, wrote Del Toral in his memo.

“To our knowledge, that is inaccurate,” said Flint spokesman Lorenz. “Before the plant was placed in operation, the City (and our engineering firm) had numerous discussions with DEQ personnel and inquired if corrosion-control chemicals – typically phosphates --needed to be included in the treatment process. The use of these chemicals was not required or mandated.”

What’s indisputable is this:

Flint’s water contained corrosion-control chemicals until April 2014, when Flint’s ties to the Detroit water system were severed. Flint officials hailed that changeover as a cost-cutting move for a city facing a financial crisis so severe it had been placed under the control of a state-appointed emergency manager.

Discontinuing the use of the anti-corrosion chemicals allowed toxic scale built up on the insides of pipes over the past decades to be released into water flowing into people’s homes, explained Del Toral.

In his memo, Del Toral warned: “The lack of mitigating treatment is especially concerning as the high lead levels [that result] will likely not be reflected in the City of Flint’s compliance samples due to sampling procedures used…”

In other words, at the same time the city is exacerbating the problem, it’s conducting tests that will probably fail to identify the true extent of the threat.

Del Toral described the situation as a “major concern.”

“In the absence of any corrosion control treatment, lead levels in drinking water can be expected to increase,” he warned in his memo.

The EPA offered Flint officials the use of agency experts to help get the situation under control, said Del Toral, but added that, to his knowledge, the city has so far declined all help.

LeeAnne Walters said that when she asked why city officials weren’t taking the EPA’s offer of assistance, she was told, “We don’t need it.”

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As for Walters’s family, that the city has finally replaced the service line leading to their home, and lead levels have dropped below the 15 ppb EPA action level.

The problem now, she said, is that water currently coming out of her tap tinged yellow and smells of rotten eggs. City officials have given her no explanation as to the possible cause of that.

It is just one more in a long list of questions that need to be addressed.

“What we need,” said Walters, “are more answers.”

But it’s not just answers the people of Flint require.

They also need solutions. And, as Del Toral’s EPA memo emphasizes, they need them immediately.

Click the link to read the full EPA Memo:
http://www.aclumich.org/sites/default/files/file/EPAWaterReport062415.pdf

---
Jeff Kelley
Director, Office of External Communications
U.S. EPA Region 5
ph: 312-353-1159

To: Bair, Rita[bair.rita@epa.gov]
Cc: Hyde, Tinka[hyde.tinka@epa.gov]; Damato, Nicholas[damato.nicholas@epa.gov]; Deltoral, Miguel[deltoral.miguel@epa.gov]
From: Henry, Timothy
Sent: Fri 7/10/2015 5:17:24 PM
Subject: RE: ACLU story on Flint drinking water: Corrosive Impact: Leaded Water and One Flint Family's Toxic Nightmare

Rita – in response to your question, Susan asked for this:

"Please ask WD to prepare a concise list of the inaccuracies -- and then we can determine whether to request a correction."

So that should be the starting point.

We can send the annotation Miguel drafted to Susan, but I think we also need to digest it into a list of specific items that would go into a transmittal message. Please do that.

Tim Henry
Deputy Director, Water Division
U.S. EPA (W-15J)
77 W. Jackson Blvd., Chicago, IL 60604-3590
Phone: 312.886.6107 Fax: 312.692.2578

From: Bair, Rita
Sent: Friday, July 10, 2015 11:30 AM
To: Henry, Timothy; Deltoral, Miguel
Cc: Hyde, Tinka; Damato, Nicholas
Subject: RE: ACLU story on Flint drinking water: Corrosive Impact: Leaded Water and One Flint Family's Toxic Nightmare

Do you think that we just want a line-by-line rebuttal or should we also be putting together a general statement about the Region's position on the Flint situation – like, Flint remains in compliance with its implementation of Federal LCR as currently written and implemented by MDEQ and/or that the Region's concerns are above and beyond the current regulatory implementation? Miguel, would that be correct?

From: Henry, Timothy
Sent: Friday, July 10, 2015 11:23 AM
To: Deltoral, Miguel
Cc: Bair, Rita; Hyde, Tinka
Subject: RE: ACLU story on Flint drinking water: Corrosive Impact: Leaded Water and One Flint Family's Toxic Nightmare

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Hi Tim,

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Miguel A. Del Toral

Regulations Manager
U.S. EPA R5 GWDWB
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To: Deltoral, Miguel
Cc: Bair, Rita; Hyde, Tinka
Subject: Fwd: ACLU story on Flint drinking water: Corrosive Impact: Leaded Water and One Flint Family's Toxic Nightmare

Miguel -

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Tim Henry

Deputy Director, Water Division

US EPA Region V

312-886-6107 (office)

312-296-0690 (cell)

Sent from my iPhone

Begin forwarded message:

> **From:** "Hedman, Susan" <hedman.susan@epa.gov>
> **Date:** July 9, 2015 at 17:26:28 CDT
> **To:** "Kelley, Jeff" <kelley.jeff@epa.gov>
> **Cc:** "Hyde, Tinka" <hyde.tinka@epa.gov>, "Henry, Timothy" <henry.timothy@epa.gov>, "Rowan, Anne" <rowan.anne@epa.gov>, "Kaplan, Robert" <kaplan.robert@epa.gov>
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Corrosive Impact: Leaded Water and One Flint Family's Toxic Nightmare

Jul 09 Posted by Curt Guyette in Democracy Watch

It took a while for LeeAnne Walters to realize the full impact of the number: 13,200.

Walters—a stay-at home mom with four sons and a husband in the Navy—had seen other numbers reflecting the quality of drinking water at her Flint home that were devastating. But 13,200? She'd never seen anything like this.

The city had tested her water twice in this past March and both times found dangerously high levels of lead—104 parts per billion (ppb) and 397 ppb, respectively.

Those numbers filled her with dread, because they meant her family had been exposed to high levels of a terribly toxic heavy metal that put her children's future in jeopardy.

But it was the result of a third test of the tap water in her home, performed by independent experts at Virginia Tech university, that most stunned Walters.

"It took a while for me to wrap my head around it," said Walters.

The VT researchers discovered lead levels in Walters' water reached a jaw-dropping 13,200 ppb—more than twice the amount at which the U.S. Environmental Protection Agency classifies water as hazardous waste.

"When I saw those numbers I was shocked," said Virginia Tech professor Marc Edwards, a former MacArthur Fellow and respected authority on corrosion in drinking-water systems, who oversaw the tests.

Edwards played a key role in discovering the problem of corroded water pipes and lead in Washington, D.C. drinking water during the early 2000s, in what has been described as one of the worst contamination events ever seen in an urban water system, with resulting increased incidence of childhood lead poisoning, miscarriages and fetal death.

In terms of lead levels, the Walters family's numbers eclipsed even the worst D.C. homes.

"I have never in my 25-year career seen such outrageously high levels going into another home in the United States," said Edwards. "This was literally hazardous-waste levels."

But the condition of Walters' tap water raises a much more far-reaching question: Since the city moved away from Detroit's water system and began pumping water from the Flint River, how many other families have been put at risk by the city's questionable testing procedures and handling of the water supply?

The Walters family surely isn't alone in dealing with the threat of lead-laced drinking water. About half of Flint's 40,000 homes are a half-century old or older, built at a time when water service lines were typically made of lead.

And according to various experts, including an EPA water-quality specialist, the city's actions are only exacerbating the threat.

“What the public needs is accurate information,” explained Miguel Del Toral, regulations manager for the Ground Water and Drinking Water Branch of the EPA’s Region 5.

Instead, the city is utilizing testing measures that almost ensure that worst-case scenarios such as the one facing the Walters family escape detection, asserted Del Toral in an internal EPA memo provided to the ACLU of Michigan.

Compounding the threat is what Del Toral describes as the continued inability of officials to adequately treat water coming into people’s homes from the Flint River.

“I don’t want to scare people unnecessarily,” said Del Toral in a phone interview from his home in Chicago. “But there is absolutely a problem in Flint that needs to be addressed right away.”

During his interview with the ACLU of Michigan, Del Toral said he was willing to go on the record with his concerns, but that he was doing so as a private citizen, not as a representative of the EPA.

EPA rules, he said, required that such interviews be routed through the agency’s public affairs people. But he’s willing to speak out nonetheless, he said, because of the potential harm to the public is so great, and the need to address it is so urgent.

WATERING DOWN THE TESTS

Perhaps the most vexing problem in all of this is the contamination caused by the city’s decades-old network of lead and iron pipes—a problem directly connected to the switch to river water, and the city’s failure to adequately treat it.

Under the U.S. Environmental Protection Agency’s rules, if lead reaches a level of 15 parts per billion in water, the source of the problem must be identified and corrected.

In early March, after months of requests (and only after Walters had received a doctor's note raising concerns about problems with the water), the city finally conducted a test. It found lead levels of 104 ppb the first time. A second test recorded a level of 397 ppb.

Blood tests, taken after those water-sample numbers were reported, revealed that one of her children, a four year old, had lead poisoning.

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"Lead can affect almost every organ and system in your body," according to the EPA's web site. "Children six years old and younger are most susceptible … Even low levels of lead in the blood of children can result in: behavior and learning problems; lower IQ and hyperactivity; slowed growth; and hearing problems."

Those dangers made Walters all the more determined to get her questions answered.

For one thing, she wanted to know why residents were being instructed to "pre-flush" water lines before drawing samples that would be tested by the city

After much searching, she found Del Toral at the EPA's Region 5 in Chicago. He explained to her that her instincts were right, and that she had good cause to be concerned about the way testing was being done.

"The practice of pre-flushing before collecting compliance samples has been shown to result in the minimization of lead capture and significant underestimation of lead levels in drinking water," wrote Del Toral in an internal memo dated June 24.

Del Toral went on to say that the city's testing methods were a "serious concern" because they "could provide a false sense of security to the residents of Flint regarding lead levels in the water." As a result, he warned, residents could fail to take the necessary precautions to protect their families from lead in the drinking water.

Virginia Tech's Edwards completely agrees with Del Toral's assessment.

"The net effect of a 'pre-flush' is to greatly reduce the likelihood of detecting lead in samples collected … that would normally be present in the consumers drinking water," Edwards wrote in an email. "I have long maintained that the practice should be banned, as it artificially lowers the amount of lead detected in samples versus typical consumer exposure."

Asked about these concerns, city spokesman Jason Lorenz offered the following email reply: "While I cannot directly respond to Mr. Del Toral's remarks without first contacting the EPA Region 5 office, I can say that the City of Flint follows all the testing procedures and schedules as required by the U.S. EPA."

He added that the Michigan Department of Environmental Quality (MDEQ) endorses the city's sampling method. The MDEQ did not respond to phone calls and e-mails seeking its comments on the controversy.

Del Toral contended in an interview that what Flint's doing is actually exploiting a "loophole" in the law.

"From a technical standpoint, there's no justification for the way Flint is conducting its tests," Del Toral said. "Any credible scientist will tell you [the city's] method is not the way to catch worst-case conditions."

There is no legitimate reason for the city's methodology, said Del Toral.

EPA rules, he said, required that such interviews be routed through the agency's public affairs people. But he was willing to speak out nonetheless, he said, because of the potential harm to the public.

FLUSHING OUT REAL ANSWERS

It was Del Toral who, after determining that the lead problem plaguing the Walters family was coming from outside their home, connected LeeAnne with Edwards at Virginia Tech.

Instead of taking a single sample after a line had been “pre-flushed” under the city’s direction, Edwards instructed Walters to collect a series of samples from water that had been allowed to sit in the service line long enough to accurately reflect levels the family could be exposed to under normal use.

(Meanwhile, that same service line, dug up and replaced after the sample collection, was found to be made of lead in one section and iron in another.)

Edwards tested the water and discovered that the lead contamination ranged from 200 ppb to the 13,200 ppb figure that stunned LeeAnne Walters—and should likewise shock many others.

Given the age of much of Flint’s infrastructure, Edwards agrees with Del Toral’s assessment that the test results they found at the Walters home amount to an alarm going off, and others in the city need to pay attention.

“I do not see any reason why there would not be serious problems occurring in at least some other Flint homes,” said Edwards.

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---
Jeff Kelley
Director, Office of External Communications
U.S. EPA Region 5
ph: 312-353-1159

To: Henry, Timothy[henry.timothy@epa.gov]
Cc: Bair, Rita[bair.rita@epa.gov]; Hyde, Tinka[hyde.tinka@epa.gov]; Damato, Nicholas[damato.nicholas@epa.gov]
From: Deltoral, Miguel
Sent: Fri 7/10/2015 5:24:12 PM
Subject: Re: ACLU story on Flint drinking water: Corrosive Impact: Leaded Water and One Flint Family's Toxic Nightmare

Personal Matters / Ex. 6

All,

I did not want to talk about this, but I feel I have to at this point.

Personal Matters / Ex. 6

Personal Matters / Ex. 6 Folks want me to get the report done and keep MDEQ in the loop (and hurry up) and also finish the state primacy reviews (and hurry up). Again, it's not the workload, but these things take time. The Chicago study took a long time to put together and folks all over the place use it now.

So I am asked to expedite the report. I knew I could not finish it and decided on an interim report and stepped on the first landmine, following by immediately stepping on another landmine in releasing the report. Personal Matters / Ex. 6 There's no time to think and that's how mistakes happen. Good intentions on my part, but mistakes in the end.

I am trying to get the final report done, but there is no way I can do it today. Personal Matters / Ex. 6 Personal Matters / Ex. 6 Personal Matters / Ex. 6 I am really trying to finish this up, and now I am asked to produce it by COB. I cannot, and if I rush this (again) my fear is that I am going to step on another landmine. Last night I had similar reservations about responding to the ACLU article, Personal Matters / Ex. 6 Personal Matters / Ex. 6

At a minimum, I can provide a short bullet-point summary and get that to you and hopefully make revisions to it before COB today or at the latest, by Monday morning. Please let me know if that is acceptable.

Respectfully,

Miguel A. Del Toral
Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

From: Henry, Timothy
Sent: Friday, July 10, 2015 11:22 AM
To: Deltoral, Miguel
Cc: Bair, Rita; Hyde, Tinka
Subject: RE: ACLU story on Flint drinking water: Corrosive Impact: Leaded Water and One Flint Family's Toxic Nightmare

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Deputy Director, Water Division

US EPA Region V

312-886-6107 (office)

Personal Phone / Ex. 6

Sent from my iPhone

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> **From:** "Hedman, Susan" <hedman.susan@epa.gov>
> **Date:** July 9, 2015 at 17:26:28 CDT
> **To:** "Kelley, Jeff" <kelley.jeff@epa.gov>
> **Cc:** "Hyde, Tinka" <hyde.tinka@epa.gov>, "Henry, Timothy" <henry.timothy@epa.gov>, "Rowan, Anne" <rowan.anne@epa.gov>, "Kaplan, Robert" <kaplan.robert@epa.gov>
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“From a technical standpoint, there’s no justification for the way Flint is conducting its tests,” Del Toral said. “Any credible scientist will tell you [the city’s] method is not the way to catch worst-case conditions.”

There is no legitimate reason for the city’s methodology, said Del Toral.

EPA rules, he said, required that such interviews be routed through the agency’s public affairs people. But he was willing to speak out nonetheless, he said, because of the potential harm to the public.

FLUSHING OUT REAL ANSWERS

It was Del Toral who, after determining that the lead problem plaguing the Citizen name / Ex. 6 family was coming from outside their home, connected Citizen name / Ex. 6 with Edwards at Virginia Tech.

Instead of taking a single sample after a line had been “pre-flushed” under the city’s direction, Edwards instructed Walters to collect a series of samples from water that had been allowed to sit in the service line long enough to accurately reflect levels the family could be exposed to under normal use.

(Meanwhile, that same service line, dug up and replaced after the sample collection, was found to be made of lead in one section and iron in another.)

Edwards tested the water and discovered that the lead contamination ranged from 200 ppb to the 13,200 ppb figure that stunned Citizen name / Ex. 6 —and should likewise shock many others.

Given the age of much of Flint's infrastructure, Edwards agrees with Del Toral's assessment that the test results they found at the Citizen name / Ex. 6 home amount to an alarm going off, and others in the city need to pay attention.

"I do not see any reason why there would not be serious problems occurring in at least some other Flint homes," said Edwards.

In 1986, the U.S. Safe Drinking Water Act was amended to prohibit the use of lead pipes in public water systems. Every house built before that is potentially at risk, said Edwards. About half of Flint's roughly 40,000 homes are at least 50 years old.

Making things worse is the fact that the high levels of chlorine being used to treat Flint's dirty river water lead to the creation of a carcinogenic byproduct know as total trihalomethanes, or TTHM. To keep TTHM levels down, the city is adding ferric chloride. The trouble is, that additive can also accelerate the corrosion of lead and iron pipes.

Adding yet another layer to the problem is something the city is not doing.

According to Del Toral, Flint should be adding corrosion-control chemicals designed to help keep lead and copper in pipes from leaching into drinking water. Doing so is required by federal regulations, wrote Del Toral in his memo.

"To our knowledge, that is inaccurate," said Flint spokesman Lorenz. "Before the plant was placed in operation, the City (and our engineering firm) had numerous discussions with DEQ personnel and inquired if corrosion-control chemicals – typically phosphates --needed to be included in the treatment process. The use of these chemicals was not required or mandated."

What's indisputable is this:

Flint's water contained corrosion-control chemicals until April 2014, when Flint's ties to the Detroit water system were severed. Flint officials hailed that changeover as a cost-cutting move for a city facing a financial crisis so severe it had been placed under the control of a state-appointed emergency manager.

Discontinuing the use of the anti-corrosion chemicals allowed toxic scale built up on the insides of pipes over the past decades to be released into water flowing into people's homes, explained Del Toral.

In his memo, Del Toral warned: "The lack of mitigating treatment is especially concerning as the high lead levels [that result] will likely not be reflected in the City of Flint's compliance samples due to sampling procedures used…"

In other words, at the same time the city is exacerbating the problem, it's conducting tests that will probably fail to identify the true extent of the threat.

Del Toral described the situation as a "major concern."

"In the absence of any corrosion control treatment, lead levels in drinking water can be expected to increase," he warned in his memo.

The EPA offered Flint officials the use of agency experts to help get the situation under control, said Del Toral, but added that, to his knowledge, the city has so far declined all help.

Citizen name / Ex. 6 said that when she asked why city officials weren't taking the EPA's offer of assistance, she was told, "We don't need it."

Flint spokesman Lorenz, on the other hand, maintained that “the city continues to work closely with the MDEQ and the EPA Regional Office.”

As for Citizen name / Ex. 6 family, that the city has finally replaced the service line leading to their home, and lead levels have dropped below the 15 ppb EPA action level.

The problem now, she said, is that water currently coming out of her tap tinged yellow and smells of rotten eggs. City officials have given her no explanation as to the possible cause of that.

It is just one more in a long list of questions that need to be addressed.

“What we need,” said Citizen name / Ex. 6 “are more answers.”

But it’s not just answers the people of Flint require.

They also need solutions. And, as Del Toral’s EPA memo emphasizes, they need them immediately.

Click the link to read the full EPA Memo:
http://www.aclumich.org/sites/default/files/file/EPAWaterReport062415.pdf

---

Jeff Kelley
Director, Office of External Communications
U.S. EPA Region 5
ph: 312-353-1159

To: Henry, Timothy[henry.timothy@epa.gov]
Cc: Bair, Rita[bair.rita@epa.gov]
From: Deltoral, Miguel
Sent: Fri 7/10/2015 5:58:18 PM
Subject: Re: ACLU story on Flint drinking water: Corrosive Impact: Leaded Water and One Flint Family's Toxic Nightmare

……..
,,,,,,,,
Sorry Tim,

I misunderstood your email. I just chatted with Rita and I can turn that around quickly. I thought Susan was asking for the final report. Just flying through things too fast.

Miguel A. Del Toral
Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

From: Henry, Timothy
Sent: Friday, July 10, 2015 12:54 PM
To: Deltoral, Miguel
Cc: Bair, Rita
Subject: RE: ACLU story on Flint drinking water: Corrosive Impact: Leaded Water and One Flint Family's Toxic Nightmare

Miguel – thanks for sharing this. I don't want to be adding to the stress – I can tell that this is bothering you. I got and read through your annotation and what I am hoping for today is a check by Rita and Nick and a concise summary of the issues embedded in your annotation. The summary would benefit from your review, but could be done by Rita or Nick as a first cut.

If you want to chat, please feel free to give me a call.

Tim Henry
Deputy Director, Water Division
U.S. EPA (W-15J)
77 W. Jackson Blvd., Chicago, IL 60604-3590
Phone: 312.886.6107 Fax: 312.692.2578

From: Deltoral, Miguel
Sent: Friday, July 10, 2015 12:24 PM
To: Henry, Timothy
Cc: Bair, Rita; Hyde, Tinka; Damato, Nicholas
Subject: Re: ACLU story on Flint drinking water: Corrosive Impact: Leaded Water and One Flint Family's Toxic Nightmare

Nonresponsive Discussion of Personal Matters / Ex. 6

All,

Nonresponsive Discussion of Personal Matters / Ex. 6

Nonresponsive Discussion of Personal Matters / Ex. 6 Folks want me to get the report done and keep MDEQ in the loop (and hurry up) and also finish the state primacy reviews (and hurry up). Again, it's not the workload, but these things take time. The Chicago study took a long time to put together and folks all over the place use it now.

So I am asked to expedite the report. I knew I could not finish it and decided on an interim report and stepped on the first landmine, following by immediately stepping on another landmine in releasing the report **Nonresponsive Discussion of Personal Matters / Ex. 6** There's no time to think and that's how mistakes happen. Good intentions on my part, but mistakes in the end.

I am trying to get the final report done, but there is no way I can do it today. **Personal Matters / Ex. 6** **Personal Matters / Ex. 6** **Personal Matters / Ex. 6** I am really trying to finish this up, and now I am asked to produce it by COB. I cannot, and if I rush this (again) my fear is that I am going to step on another landmine. Last night I had similar reservations about responding to the ACLU article **Nonresponsive Discussion of Personal Matters / Ex. 6** **Nonresponsive Discussion of Personal Matters / Ex. 6**

At a minimum, I can provide a short bullet-point summary and get that to you and hopefully make revisions to it before COB today or at the latest, by Monday morning. Please let me know if that is acceptable.

Respectfully,

Miguel A. Del Toral

Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

From: Henry, Timothy
Sent: Friday, July 10, 2015 11:22 AM
To: Deltoral, Miguel
Cc: Bair, Rita; Hyde, Tinka
Subject: RE: ACLU story on Flint drinking water: Corrosive Impact: Leaded Water and One Flint Family's Toxic Nightmare

Talking with Tinka now, and saw also that Susan is inquiring about status of assessment. Tinka would like to get the assessment today, so please get it pulled together by COB if not earlier.

Tim Henry
Deputy Director, Water Division
U.S. EPA (W-15J)
77 W. Jackson Blvd., Chicago, IL 60604-3590
Phone: 312.886.6107 Fax: 312.692.2578

From: Deltoral, Miguel
Sent: Friday, July 10, 2015 9:43 AM
To: Henry, Timothy
Cc: Bair, Rita; Hyde, Tinka
Subject: Re: ACLU story on Flint drinking water: Corrosive Impact: Leaded Water and One Flint Family's Toxic Nightmare

Hi Tim,

Yes, I just started work for the day but I will try to get that to folks asap. I will cut/paste and annotate the ACLU article text.

Miguel A. Del Toral

Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

From: Henry, Timothy

Sent: Thursday, July 9, 2015 05:40 PM
To: Deltoral, Miguel
Cc: Bair, Rita; Hyde, Tinka
Subject: Fwd: ACLU story on Flint drinking water: Corrosive Impact: Leaded Water and One Flint Family's Toxic Nightmare

Miguel -

I think Rita said you were already doing generally what Susan requests. Absent any earlier due date that we might get from ORA or Tinka, please have this information ready for Tinka Monday morning so she is prepared for senior staff at 1100.

Tim Henry

Deputy Director, Water Division

US EPA Region V

312-886-6107 (office)

Personal Phone / Ex. 6

Sent from my iPhone

Begin forwarded message:

> **From:** "Hedman, Susan" <hedman.susan@epa.gov>
> **Date:** July 9, 2015 at 17:26:28 CDT
> **To:** "Kelley, Jeff" <kelley.jeff@epa.gov>
> **Cc:** "Hyde, Tinka" <hyde.tinka@epa.gov>, "Henry, Timothy" <henry.timothy@epa.gov>, "Rowan, Anne" <rowan.anne@epa.gov>, "Kaplan, Robert" <kaplan.robert@epa.gov>
> **Subject: Re: ACLU story on Flint drinking water: Corrosive Impact: Leaded Water and One Flint Family's Toxic Nightmare**
>
> Thanks. Please ask WD to prepare a concise list of the inaccuracies -- and then we can determine whether to request a correction.
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> On Jul 9, 2015, at 3:28 PM, Kelley, Jeff <kelley.jeff@epa.gov> wrote:
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>> This just in … I haven't had a chance to read it yet, but I assume you'll be hearing from the mayor again shortly. Migel del Toral, the Water Division staffer quoted at length in the article, describes it as full of mischaracterizations and inaccuracies.
>>
>> **Corrosive Impact: Leaded Water and One Flint Family's Toxic Nightmare**

Jul 09 Posted by Curt Guyette in Democracy Watch

It took a while for LeeAnne Walters to realize the full impact of the number: 13,200.

Walters—a stay-at home mom with four sons and a husband in the Navy—had seen other numbers reflecting the quality of drinking water at her Flint home that were devastating. But 13,200? She'd never seen anything like this.

The city had tested her water twice in this past March and both times found dangerously high levels of lead—104 parts per billion (ppb) and 397 ppb, respectively.

Those numbers filled her with dread, because they meant her family had been exposed to high levels of a terribly toxic heavy metal that put her children's future in jeopardy.

But it was the result of a third test of the tap water in her home, performed by independent experts at Virginia Tech university, that most stunned Walters.

"It took a while for me to wrap my head around it," said Walters.

The VT researchers discovered lead levels in Walters' water reached a jaw-dropping 13,200 ppb—more than twice the amount at which the U.S. Environmental Protection Agency classifies water as hazardous waste.

"When I saw those numbers I was shocked," said Virginia Tech professor Marc Edwards, a former MacArthur Fellow and respected authority on corrosion in drinking-water systems, who oversaw the tests.

Edwards played a key role in discovering the problem of corroded water pipes and lead in Washington, D.C. drinking water during the early 2000s, in what has been described as one of the worst contamination events ever seen in an urban water system, with resulting increased incidence of childhood lead poisoning, miscarriages and fetal death.

In terms of lead levels, the Walters family's numbers eclipsed even the worst D.C. homes.

"I have never in my 25-year career seen such outrageously high levels going into another home in the United States," said Edwards. "This was literally hazardous-waste levels."

But the condition of Walters' tap water raises a much more far-reaching question: Since the city moved away from Detroit's water system and began pumping water from the Flint River, how many other families have been put at risk by the city's questionable testing procedures and handling of the water supply?

The Walters family surely isn't alone in dealing with the threat of lead-laced drinking water. About half of Flint's 40,000 homes are a half-century old or older, built at a time when water service lines were typically made of lead.

And according to various experts, including an EPA water-quality specialist, the city's actions are only exacerbating the threat.

"What the public needs is accurate information," explained Miguel Del Toral, regulations manager for the Ground Water and Drinking Water Branch of the EPA's Region 5.

Instead, the city is utilizing testing measures that almost ensure that worst-case scenarios such as the one facing the Walters family escape detection, asserted Del Toral in an internal EPA memo provided to the ACLU of Michigan.

Compounding the threat is what Del Toral describes as the continued inability of officials to adequately treat water coming into people's homes from the Flint River.

"I don't want to scare people unnecessarily," said Del Toral in a phone interview from his home in Chicago. "But there is absolutely a problem in Flint that needs to be addressed right away."

During his interview with the ACLU of Michigan, Del Toral said he was willing to go on the record with his concerns, but that he was doing so as a private citizen, not as a representative of the EPA.

EPA rules, he said, required that such interviews be routed through the agency's public affairs people. But he's willing to speak out nonetheless, he said, because of the potential harm to the public is so great, and the need to address it is so urgent.

WATERING DOWN THE TESTS

Perhaps the most vexing problem in all of this is the contamination caused by the city's decades-old network of lead and iron pipes—a problem directly connected to the switch to river water, and the city's failure to adequately treat it.

Under the U.S. Environmental Protection Agency's rules, if lead reaches a level of 15 parts per billion in water, the source of the problem must be identified and corrected.

In early March, after months of requests (and only after Walters had received a doctor's note raising concerns about problems with the water), the city finally conducted a test. It found lead levels of 104 ppb the first time. A second test recorded a level of 397 ppb.

Blood tests, taken after those water-sample numbers were reported, revealed that one of her children, a four year old, had lead poisoning.

The news was devastating, said Walters, and the concern it creates for her child's future is haunting.

"Lead can affect almost every organ and system in your body," according to the EPA's web site. "Children six years old and younger are most susceptible … Even low levels of lead in the blood of children can result in: behavior and learning problems; lower IQ and hyperactivity; slowed growth; and hearing problems."

Those dangers made Walters all the more determined to get her questions answered.

For one thing, she wanted to know why residents were being instructed to "pre-flush" water lines before drawing samples that would be tested by the city

After much searching, she found Del Toral at the EPA's Region 5 in Chicago. He explained to her that her instincts were right, and that she had good cause to be concerned about the way testing was being done.

"The practice of pre-flushing before collecting compliance samples has been shown to result in the minimization of lead capture and significant underestimation of lead levels in drinking water," wrote Del Toral in an internal memo dated June 24.

Del Toral went on to say that the city's testing methods were a "serious concern" because they "could provide a false sense of security to the residents of Flint regarding lead levels in the water." As a result, he warned, residents could fail to take the necessary precautions to protect their families from lead in the drinking water.

Virginia Tech's Edwards completely agrees with Del Toral's assessment.

"The net effect of a 'pre-flush' is to greatly reduce the likelihood of detecting lead in samples collected … that would normally be present in the consumers drinking water," Edwards wrote in an email. "I have long maintained that the practice should be banned, as it artificially lowers the amount of lead detected in samples versus typical consumer exposure."

Asked about these concerns, city spokesman Jason Lorenz offered the following email reply: "While I cannot directly respond to Mr. Del Toral's remarks without first contacting the EPA Region 5 office, I can say that the City of Flint follows all the testing procedures and schedules as required by the U.S. EPA."

He added that the Michigan Department of Environmental Quality (MDEQ) endorses the city's sampling method. The MDEQ did not respond to phone calls and e-mails seeking its comments on the controversy.

Del Toral contended in an interview that what Flint's doing is actually exploiting a "loophole" in the law.

"From a technical standpoint, there's no justification for the way Flint is conducting its tests," Del Toral said. "Any credible scientist will tell you [the city's] method is not the way to catch worst-case conditions."

There is no legitimate reason for the city's methodology, said Del Toral.

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FLUSHING OUT REAL ANSWERS

It was Del Toral who, after determining that the lead problem plaguing the Walters family was coming from outside their home, connected LeeAnne with Edwards at Virginia Tech.

Instead of taking a single sample after a line had been "pre-flushed" under the city's direction, Edwards instructed Walters to collect a series of samples from water that had been allowed to sit in the service line long enough to accurately reflect levels the family could be exposed to under normal use.

(Meanwhile, that same service line, dug up and replaced after the sample collection, was found to be made of lead in one section and iron in another.)

Edwards tested the water and discovered that the lead contamination ranged from 200 ppb to the 13,200 ppb figure that stunned LeeAnne Walters—and should likewise shock many others.

Given the age of much of Flint's infrastructure, Edwards agrees with Del Toral's assessment that the test results they found at the Walters home amount to an alarm going off, and others in the city need to pay attention.

"I do not see any reason why there would not be serious problems occurring in at least some other Flint homes," said Edwards.

In 1986, the U.S. Safe Drinking Water Act was amended to prohibit the use of lead pipes in public water systems. Every house built before that is potentially at risk, said Edwards. About half of Flint's roughly 40,000 homes are at least 50 years old.

Making things worse is the fact that the high levels of chlorine being used to treat Flint's dirty river water lead to the creation of a carcinogenic byproduct know as total trihalomethanes, or TTHM. To keep TTHM levels down, the city is adding ferric chloride. The trouble is, that additive can also accelerate the corrosion of lead and iron pipes.

Adding yet another layer to the problem is something the city is not doing.

According to Del Toral, Flint should be adding corrosion-control chemicals designed to help keep lead and copper in pipes from leaching into drinking water. Doing so is required by federal regulations, wrote Del Toral in his memo.

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Discontinuing the use of the anti-corrosion chemicals allowed toxic scale built up on the insides of pipes over the past decades to be released into water flowing into people's homes, explained Del Toral.

In his memo, Del Toral warned: "The lack of mitigating treatment is especially concerning as the high lead levels [that result] will likely not be reflected in the City of Flint's compliance samples due to sampling procedures used…"

In other words, at the same time the city is exacerbating the problem, it's conducting tests that will probably fail to identify the true extent of the threat.

Del Toral described the situation as a "major concern."

"In the absence of any corrosion control treatment, lead levels in drinking water can be expected to increase," he warned in his memo.

The EPA offered Flint officials the use of agency experts to help get the situation under control, said Del Toral, but added that, to his knowledge, the city has so far declined all help.

LeeAnne Walters said that when she asked why city officials weren't taking the EPA's offer of assistance, she was told, "We don't need it."

Flint spokesman Lorenz, on the other hand, maintained that "the city continues to work closely with the MDEQ and the EPA Regional Office."

As for Walters's family, that the city has finally replaced the service line leading to their home, and lead levels have dropped below the 15 ppb EPA action level.

The problem now, she said, is that water currently coming out of her tap tinged yellow and smells of rotten eggs. City officials have given her no explanation as to the possible cause of that.

It is just one more in a long list of questions that need to be addressed.

"What we need," said Walters, "are more answers."

But it's not just answers the people of Flint require.

They also need solutions. And, as Del Toral's EPA memo emphasizes, they need them immediately.

Click the link to read the full EPA Memo:
http://www.aclumich.org/sites/default/files/file/EPAWaterReport062415.pdf

---

Jeff Kelley
Director, Office of External Communications
U.S. EPA Region 5
ph: 312-353-1159

Cc: Damato, Nicholas[damato.nicholas@epa.gov]; Henry, Timothy[henry.timothy@epa.gov]; Poy, Thomas[poy.thomas@epa.gov]
To: Bair, Rita[bair.rita@epa.gov]
From: Deltoral, Miguel
Sent: Fri 7/10/2015 7:39:18 PM
Subject: Re: ACLU story on Flint drinking water: Corrosive Impact: Leaded Water and One Flint Family's Toxic Nightmare
MDT comments on ACLU article version 2 07-10-2015.docx

Here are the updated responses. The top part contains the summary of inaccuracies/mischaracterizations. The bottom has the whole thing with my revised comments.

Miguel A. Del Toral
Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

From: Bair, Rita
Sent: Friday, July 10, 2015 12:12 PM
To: Deltoral, Miguel
Cc: Damato, Nicholas
Subject: RE: ACLU story on Flint drinking water: Corrosive Impact: Leaded Water and One Flint Family's Toxic Nightmare

Miguel, attached are my initial comments/reactions to what you wrote. Since this is going to Susan, I would really be as direct and to the point and defending yourself more. If you want to have a call with Nick and I to go through this more closely let me know.

From: Henry, Timothy
Sent: Friday, July 10, 2015 12:06 PM
To: Deltoral, Miguel
Cc: Bair, Rita; Hyde, Tinka; Damato, Nicholas
Subject: RE: ACLU story on Flint drinking water: Corrosive Impact: Leaded Water and One Flint Family's Toxic Nightmare

Thanks Miguel. Rita and Nick, please give this a careful read and if you see anything that is unclear or raises questions, please work with Miguel to clear up. Let me know when you are all satisfied and I will take a look and send it on to Tinka, Susan and Jeff.

Tim Henry
Deputy Director, Water Division
U.S. EPA (W-15J)
77 W. Jackson Blvd., Chicago, IL 60604-3590
Phone: 312.886.6107 Fax: 312.692.2578

From: Deltoral, Miguel
Sent: Friday, July 10, 2015 11:41 AM
To: Henry, Timothy
Cc: Bair, Rita; Hyde, Tinka; Damato, Nicholas
Subject: Re: ACLU story on Flint drinking water: Corrosive Impact: Leaded Water and One Flint Family's Toxic Nightmare
Importance: High

Here you go. If you have any questions or need any additional information, please let me know.

Miguel A. Del Toral

Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

From: Henry, Timothy
Sent: Friday, July 10, 2015 10:18 AM
To: Deltoral, Miguel
Cc: Bair, Rita; Hyde, Tinka
Subject: RE: ACLU story on Flint drinking water: Corrosive Impact: Leaded Water and One Flint Family's Toxic Nightmare

Thanks Miguel

Tim Henry

Deputy Director, Water Division
U.S. EPA (W-15J)
77 W. Jackson Blvd., Chicago, IL 60604-3590
Phone: 312.886.6107 Fax: 312.692.2578

From: Deltoral, Miguel
Sent: Friday, July 10, 2015 9:43 AM
To: Henry, Timothy
Cc: Bair, Rita; Hyde, Tinka
Subject: Re: ACLU story on Flint drinking water: Corrosive Impact: Leaded Water and One Flint Family's Toxic Nightmare

Hi Tim,

Yes, I just started work for the day but I will try to get that to folks asap. I will cut/paste and annotate the ACLU article text.

Miguel A. Del Toral

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From: Henry, Timothy
Sent: Thursday, July 9, 2015 05:40 PM
To: Deltoral, Miguel
Cc: Bair, Rita; Hyde, Tinka
Subject: Fwd: ACLU story on Flint drinking water: Corrosive Impact: Leaded Water and One Flint Family's Toxic Nightmare

Miguel -

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Tim Henry

Deputy Director, Water Division

US EPA Region V

312-886-6107 (office)

Personal Phone / Ex. 6

Sent from my iPhone

Begin forwarded message:

> **From:** "Hedman, Susan" <hedman.susan@epa.gov>
> **Date:** July 9, 2015 at 17:26:28 CDT
> **To:** "Kelley, Jeff" <kelley.jeff@epa.gov>
> **Cc:** "Hyde, Tinka" <hyde.tinka@epa.gov>, "Henry, Timothy" <henry.timothy@epa.gov>, "Rowan, Anne" <rowan.anne@epa.gov>, "Kaplan, Robert" <kaplan.robert@epa.gov>
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>>
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The city had tested her water twice in this past March and both times found dangerously high levels of lead—104 parts per billion (ppb) and 397 ppb, respectively.

Those numbers filled her with dread, because they meant her family had been exposed to high levels of a terribly toxic heavy metal that put her children's future in jeopardy.

But it was the result of a third test of the tap water in her home, performed by independent experts at Virginia Tech university, that most stunned Walters.

"It took a while for me to wrap my head around it," said Citizen name / Ex. 6

The VT researchers discovered lead levels in Walters' water reached a jaw-dropping 13,200 ppb—more than twice the amount at which the U.S. Environmental Protection Agency classifies water as hazardous waste.

"When I saw those numbers I was shocked," said Virginia Tech professor Marc Edwards, a former MacArthur Fellow and respected authority on corrosion in drinking-water systems, who oversaw the tests.

Edwards played a key role in discovering the problem of corroded water pipes and lead in Washington, D.C. drinking water during the early 2000s, in what has been described as one of the worst contamination events ever seen in an urban water system, with resulting increased incidence of childhood lead poisoning, miscarriages and fetal death.

In terms of lead levels, the [redacted] Citizen name / Ex. 6 family's numbers eclipsed even the worst D.C. homes.

“I have never in my 25-year career seen such outrageously high levels going into another home in the United States,” said Edwards. “This was literally hazardous-waste levels.”

But the condition of [redacted] Citizen name / Ex. 6 tap water raises a much more far-reaching question: Since the city moved away from Detroit’s water system and began pumping water from the Flint River, how many other families have been put at risk by the city’s questionable testing procedures and handling of the water supply?

The [redacted] Citizen name / Ex. 6 family surely isn’t alone in dealing with the threat of lead-laced drinking water. About half of Flint’s 40,000 homes are a half-century old or older, built at a time when water service lines were typically made of lead.

And according to various experts, including an EPA water-quality specialist, the city’s actions are only exacerbating the threat.

“What the public needs is accurate information,” explained Miguel Del Toral, regulations manager for the Ground Water and Drinking Water Branch of the EPA’s Region 5.

Instead, the city is utilizing testing measures that almost ensure that worst-case scenarios such as the one facing the Walters family escape detection, asserted Del Toral in an internal EPA memo provided to the ACLU of Michigan.

Compounding the threat is what Del Toral describes as the continued inability of officials to adequately treat water coming into people’s homes from the Flint River.

“I don’t want to scare people unnecessarily,” said Del Toral in a phone interview from his home in Chicago. “But there is absolutely a problem in Flint that needs to be addressed right away.”

During his interview with the ACLU of Michigan, Del Toral said he was willing to go on the record with his concerns, but that he was doing so as a private citizen, not as a representative of the EPA.

EPA rules, he said, required that such interviews be routed through the agency’s public affairs people. But he’s willing to speak out nonetheless, he said, because of the potential harm to the public is so great, and the need to address it is so urgent.

WATERING DOWN THE TESTS

Perhaps the most vexing problem in all of this is the contamination caused by the city’s decades-old network of lead and iron pipes—a problem directly connected to the switch to river water, and the city’s failure to adequately treat it.

Under the U.S. Environmental Protection Agency’s rules, if lead reaches a level of 15 parts per billion in water, the source of the problem must be identified and corrected.

In early March, after months of requests (and only after [redacted] had received a doctor’s note raising concerns about problems with the water), the city finally conducted a test. It found lead levels of 104 ppb the first time. A second test recorded a level of 397 ppb.

Blood tests, taken after those water-sample numbers were reported, revealed that one of her children, a four year old, had lead poisoning.

The news was devastating, said Walters, and the concern it creates for her child’s future is haunting.

“Lead can affect almost every organ and system in your body,” according to the EPA’s web site. “Children six years old and younger are most susceptible … Even low levels of lead in the blood of children can result in: behavior and learning problems; lower IQ and hyperactivity; slowed growth; and hearing problems.”

Those dangers made Citizen name / Ex. 6 all the more determined to get her questions answered.

For one thing, she wanted to know why residents were being instructed to “pre-flush” water lines before drawing samples that would be tested by the city

After much searching, she found Del Toral at the EPA’s Region 5 in Chicago. He explained to her that her instincts were right, and that she had good cause to be concerned about the way testing was being done.

“The practice of pre-flushing before collecting compliance samples has been shown to result in the minimization of lead capture and significant underestimation of lead levels in drinking water,” wrote Del Toral in an internal memo dated June 24.

Del Toral went on to say that the city’s testing methods were a “serious concern” because they “could provide a false sense of security to the residents of Flint regarding lead levels in the water.” As a result, he warned, residents could fail to take the necessary precautions to protect their families from lead in the drinking water.

Virginia Tech’s Edwards completely agrees with Del Toral’s assessment.

“The net effect of a ‘pre-flush’ is to greatly reduce the likelihood of detecting lead in samples collected … that would normally be present in the consumers drinking water,” Edwards wrote in an email. “I have long maintained that the practice should be banned, as it artificially lowers the amount of lead detected in samples versus typical consumer exposure.”

Asked about these concerns, city spokesman Jason Lorenz offered the following email reply: “While I cannot directly respond to Mr. Del Toral's remarks without first contacting the EPA Region 5 office, I can say that the City of Flint follows all the testing procedures and schedules as required by the U.S. EPA."

He added that the Michigan Department of Environmental Quality (MDEQ) endorses the city's sampling method. The MDEQ did not respond to phone calls and e-mails seeking its comments on the controversy.

Del Toral contended in an interview that what Flint's doing is actually exploiting a "loophole" in the law.

"From a technical standpoint, there's no justification for the way Flint is conducting its tests," Del Toral said. "Any credible scientist will tell you [the city's] method is not the way to catch worst-case conditions."

There is no legitimate reason for the city's methodology, said Del Toral.

EPA rules, he said, required that such interviews be routed through the agency's public affairs people. But he was willing to speak out nonetheless, he said, because of the potential harm to the public.

FLUSHING OUT REAL ANSWERS

It was Del Toral who, after determining that the lead problem plaguing the Citizen name / Ex. 6 family was coming from outside their home, connected Citizen name / Ex. 6 th Edwards at Virginia Tech.

Instead of taking a single sample after a line had been "pre-flushed" under the city's direction, Edwards instructed Walters to collect a series of samples from water that had been allowed to sit in the service line long enough to accurately reflect levels the family could be exposed to under normal use.

(Meanwhile, that same service line, dug up and replaced after the sample collection, was found to be made of lead in one section and iron in another.)

Edwards tested the water and discovered that the lead contamination ranged from 200 ppb to the 13,200 ppb figure that stunned Citizen name / Ex. 6 —and should likewise shock many others.

Given the age of much of Flint's infrastructure, Edwards agrees with Del Toral's assessment that the test results they found at the Walters home amount to an alarm going off, and others in the city need to pay attention.

"I do not see any reason why there would not be serious problems occurring in at least some other Flint homes," said Edwards.

In 1986, the U.S. Safe Drinking Water Act was amended to prohibit the use of lead pipes in public water systems. Every house built before that is potentially at risk, said Edwards. About half of Flint's roughly 40,000 homes are at least 50 years old.

Making things worse is the fact that the high levels of chlorine being used to treat Flint's dirty river water lead to the creation of a carcinogenic byproduct know as total trihalomethanes, or TTHM. To keep TTHM levels down, the city is adding ferric chloride. The trouble is, that additive can also accelerate the corrosion of lead and iron pipes.

Adding yet another layer to the problem is something the city is not doing.

According to Del Toral, Flint should be adding corrosion-control chemicals designed to help keep lead and copper in pipes from leaching into drinking water. Doing so is required by federal regulations, wrote Del Toral in his memo.

"To our knowledge, that is inaccurate," said Flint spokesman Lorenz. "Before the plant was placed in operation, the City (and our engineering firm) had numerous discussions with DEQ personnel and inquired if corrosion-control chemicals – typically phosphates --needed to be included in the treatment process. The use of these chemicals was not required or mandated."

What's indisputable is this:

Flint's water contained corrosion-control chemicals until April 2014, when Flint's ties to the Detroit water system were severed. Flint officials hailed that changeover as a cost-cutting move for a city facing a financial crisis so severe it had been placed under the control of a state-appointed emergency manager.

Discontinuing the use of the anti-corrosion chemicals allowed toxic scale built up on the insides of pipes over the past decades to be released into water flowing into people's homes, explained Del Toral.

In his memo, Del Toral warned: "The lack of mitigating treatment is especially concerning as the high lead levels [that result] will likely not be reflected in the City of Flint's compliance samples due to sampling procedures used…"

In other words, at the same time the city is exacerbating the problem, it's conducting tests that will probably fail to identify the true extent of the threat.

Del Toral described the situation as a "major concern."

"In the absence of any corrosion control treatment, lead levels in drinking water can be expected to increase," he warned in his memo.

The EPA offered Flint officials the use of agency experts to help get the situation under control, said Del Toral, but added that, to his knowledge, the city has so far declined all help.

Citizen name / Ex. 6 said that when she asked why city officials weren't taking the EPA's offer of assistance, she was told, "We don't need it."

Flint spokesman Lorenz, on the other hand, maintained that “the city continues to work closely with the MDEQ and the EPA Regional Office.”

As for Walters’s family, that the city has finally replaced the service line leading to their home, and lead levels have dropped below the 15 ppb EPA action level.

The problem now, she said, is that water currently coming out of her tap tinged yellow and smells of rotten eggs. City officials have given her no explanation as to the possible cause of that.

It is just one more in a long list of questions that need to be addressed.

“What we need,” said Citizen name / Ex. 6 “are more answers.”

But it’s not just answers the people of Flint require.

They also need solutions. And, as Del Toral’s EPA memo emphasizes, they need them immediately.

Click the link to read the full EPA Memo:
http://www.aclumich.org/sites/default/files/file/EPAWaterReport062415.pdf

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Jeff Kelley
Director, Office of External Communications
U.S. EPA Region 5
ph: 312-353-1159

Summary of Inaccurate statements and mischaracterizations

It took a while for LeeAnne Walters to realize the full impact of the number: 13,200. Walters—a stay-at home mom with four sons and a husband in the Navy—had seen other numbers reflecting the quality of drinking water at her Flint home that were devastating. But 13,200? She'd never seen anything like this.

The ACLU should revise the article to include more specifics on the high results so as not to unduly alarm the residents of Flint. The very high lead levels discovered in the samples were from the Walters' residence after the water had been stagnant in the service line for almost a month (April 3, 2015 to April 27, 2015). The Walters' service line configuration and long length is also likely not what would be found in most typical homes in Flint. Using the information in an unexplained or unqualified manner can lead to residents inferring that their situations could be the same.

The Walters family surely isn't alone in dealing with the threat of lead-laced drinking water. About half of Flint's 40,000 homes are a half-century old or older, built at a time when water service lines were typically made of lead.

Although there certainly are lead lines in Flint, EPA does not have information to indicate when lead service lines were used or not used in Flint. Unless the period of time that lead lines were used is known to the ACLU, it should not be assumed that lead lines were used during this time. Many cities stopped using lead lines in the 1920s, 1930s, 1940s, etc.

Del Toral contended in an interview that what Flint's doing is actually exploiting a "loophole" in the law.

"From a technical standpoint, there's no justification for the way Flint is conducting its tests," Del Toral said. "Any credible scientist will tell you [the city's] method is not the way to catch worst-case conditions."

There is no legitimate reason for the city's methodology, said Del Toral.

The Lead and Copper Rule is silent on the issue of pre-flushing before collecting compliance samples. It does not include pre-flushing instructions or prohibit them. EPA is concerned with the potential impact of pre-flushing, given the absence of treatment for lead and we are in discussions with the MDEQ on this issue.

EPA rules, he said, required that such interviews be routed through the agency's public affairs people. But he was willing to speak out nonetheless, he said, because of the potential harm to the public.

Do we want to address this? If so, I am not sure what we would say.

Instead of taking a single sample after a line had been "pre-flushed" under the city's direction, Edwards instructed Walters to collect a series of samples from water that had been allowed to sit in the service line long enough to accurately reflect levels the family could be exposed to under normal use.

This characterization is not accurate/misleading. Prior to the collection of the samples, the water was not used in the home from April 3, 2015 to April 27, 2015. This is not how water is used in a typical home. The ACLU should explain how the conditions under which the samples were collected and the atypical (very long) service line at the Walters' residence, to put these results in the proper context.

Given the age of much of Flint's infrastructure, Edwards agrees with Del Toral's assessment that the test results they found at the Walters home amount to an alarm going off, and others in the city need to pay attention.

This is a mischaracterization of what I said. I did not say this about the VT sampling. I said this about the samples collected by the City of Flint from the Walters' home (104 ppb & 397 ppb). It was with respect to the lack of any mitigating treatment, and my professional opinion regarding the disintegration of the existing scales formed during the time phosphate treated water was provided by Detroit, which would be occurring city-wide.

According to Del Toral, Flint should be adding corrosion-control chemicals designed to help keep lead and copper in pipes from leaching into drinking water. Doing so is required by federal regulations, wrote Del Toral in his memo.

This is not an accurate statement. What I said was that large systems were required to install and maintain optimal corrosion control, unless the system meets the treatment exemption criteria in the Lead and Copper Rule.

The EPA offered Flint officials the use of agency experts to help get the situation under control, said Del Toral, but added that, to his knowledge, the city has so far declined all help.

This is not accurate. EPA has discuss the offer to technical assistance to the City of Flint.

LeeAnne Walters said that when she asked why city officials weren't taking the EPA's offer of assistance, she was told, "We don't need it."

--**[End of summary]**--

Introductory comment: I quit work early one day and [redacted] *called that day after I had quit work and asked if I would speak to the ACLU. I told* [redacted] *that I had no authority to speak to the ACLU on behalf of EPA and that he should contact our public affairs office if he wanted comments from EPA.* [redacted] *indicated that he just wanted to better understand some of the issues and I reiterated that although I was willing to speak to him in my personal capacity, I wanted it to be very clear that I am not speaking on behalf of EPA and that any questions I answer are not to portrayed as EPA comments or responses. I also reiterated the same to the ACLU when Mr. Guyette called later that day. The language in the article seems to convey that I was the one that initiated the contact with the ACLU out of concern with the situation in Flint. I did not contact the ACLU, offer to contact the ACLU or have any intent to do so in my EPA or personal capacity regarding Flint or any other drinking water issue. I do contact the ACLU for other non-work issues and discussed those with* [redacted] *Unlike bankers and tax lawyers sifting through tax law to avoid tax liabilities, I want to comply with the letter and the spirit of the ethics regulations and I am willing to work with EPA to clarify the training regarding outside activities so that others don't have to go through this. I will be* [redacted]

The central issue I focused on in my discussion with the ACLU was the need for Flint to evaluate treatment on a system-wide basis, and the EPA offer to provide technical assistance so that they are not fixing one problem (E.coli and Coliform MCL violations) only to cause another problem (TTHM MCL violations).

It took a while for LeeAnne Walters to realize the full impact of the number: 13,200.

MDT comment: I tried to make it clear that using these results could unduly alarm the public. I stressed is that we do not want to unduly alarm the residents in Flint, and I said this more than once regarding the very high lead at the Citizen name / Ex. 6 home. I said we had never seen lead levels this high in drinking water and we had no information that would tell us if the Citizen name / Ex. 6 home was unique or whether there were any other homes with similar configurations. I also said that these results were from sampling conducted after the water in that service line had not been used for almost a month, so it is very likely not representative of what we would expect to find in most homes in Flint unless the Citizen name / Ex. 6 service line configuration is more common than we think, which is doubtful. Mr. Guyette chose to use the highest result from that sampling set and without proper qualification.

Walters—a stay-at home mom with four sons and a husband in the Navy—had seen other numbers reflecting the quality of drinking water at her Flint home that were devastating. But 13,200? She'd never seen anything like this.

The city had tested her water twice in this past March and both times found dangerously high levels of lead—104 parts per billion (ppb) and 397 ppb, respectively.

Those numbers filled her with dread, because they meant her family had been exposed to high levels of a terribly toxic heavy metal that put her children's future in jeopardy.

But it was the result of a third test of the tap water in her home, performed by independent experts at Virginia Tech university, that most stunned Walters.

"It took a while for me to wrap my head around it," said Walters.

The VT researchers discovered lead levels in Walters' water reached a jaw-dropping 13,200 ppb—more than twice the amount at which the U.S. Environmental Protection Agency classifies water as hazardous waste.

"When I saw those numbers I was shocked," said Virginia Tech professor Marc Edwards, a former MacArthur Fellow and respected authority on corrosion in drinking-water systems, who oversaw the tests.

Edwards played a key role in discovering the problem of corroded water pipes and lead in Washington, D.C. drinking water during the early 2000s, in what has been described as one of the *worst* contamination events ever seen in an urban water system, with resulting increased incidence of childhood lead poisoning, miscarriages and fetal death.

In terms of lead levels, the Walters family's numbers eclipsed even the worst D.C. homes.

"I have never in my 25-year career seen such outrageously high levels going into another home in the United States," said Edwards. "This was literally hazardous-waste levels."

But the condition of Walters' tap water raises a much more far-reaching question: Since the city moved away from Detroit's water system and began pumping water from the Flint River, how many other families have been put at risk by the city's questionable testing procedures and handling of the water supply?

The Walters family surely isn't alone in dealing with the threat of lead-laced drinking water. About half of Flint's 40,000 homes are a half-century old or older, built at a time when water service lines were typically made of lead.

MDT: This did not come from me. Flint definitely used lead lines, but I have no idea whatsoever when they stopped using lead lines in Flint.

And according to various experts, including an EPA water-quality specialist, the city's actions are only exacerbating the threat.

"What the public needs is accurate information," explained Miguel Del Toral, regulations manager for the Ground Water and Drinking Water Branch of the EPA's Region 5.

MDT: This was part of my trying to stress that we should not unduly alarm people.

Instead, the city is utilizing testing measures that almost ensure that worst-case scenarios such as the one facing the Walters family escape detection, asserted Del Toral in an internal EPA memo provided to the ACLU of Michigan.

Compounding the threat is what Del Toral describes as the continued inability of officials to adequately treat water coming into people's homes from the Flint River.

MDT: The main focus of what I told the ACLU was that Flint has gone from essentially a finishing operation at the treatment plant to a raw water treatment plant and is dealing with a number of drinking water issues and could benefit from expert assistance in simultaneously complying across all drinking water regulations.

"I don't want to scare people unnecessarily," said Del Toral in a phone interview from his home in Chicago. "But there is absolutely a problem in Flint that needs to be addressed right away."

MDT: My comment was specifically on lead. In the absence of treatment we expect that lead levels will increase due to the presence of lead service lines. The concerns that the Region has and the actions to be taken are scheduled for discussion with MDEQ later in July.

During his interview with the ACLU of Michigan, Del Toral said he was willing to go on the record with his concerns, but that he was doing so as a private citizen, not as a representative of the EPA.

EPA rules, he said, required that such interviews be routed through the agency's public affairs people. But he's willing to speak out nonetheless, he said, because of the potential harm to the public is so great, and the need to address it is so urgent.

MDT: What I said was that I was not authorized to speak on behalf of EPA and that if he wanted EPA's comments he should contact public affairs.

WATERING DOWN THE TESTS

Perhaps the most vexing problem in all of this is the contamination caused by the city's decades-old network of lead and iron pipes—a problem directly connected to the switch to river water, and the city's failure to adequately treat it.

Under the U.S. Environmental Protection Agency's rules, if lead reaches a level of 15 parts per billion in water, the source of the problem must be identified and corrected.

In early March, after months of requests (and only after Walters had received a doctor's note raising concerns about problems with the water), the city finally conducted a test. It found lead levels of 104 ppb the first time. A second test recorded a level of 397 ppb.

Blood tests, taken after those water-sample numbers were reported, revealed that one of her children, a four year old, had lead poisoning.

The news was devastating, said Walters, and the concern it creates for her child's future is haunting.

"Lead can affect almost every organ and system in your body," according to the EPA's web site. "Children six years old and younger are most susceptible … Even low levels of lead in the blood of children can result in: behavior and learning problems; lower IQ and hyperactivity; slowed growth; and hearing problems."

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For one thing, she wanted to know why residents were being instructed to "pre-flush" water lines before drawing samples that would be tested by the city

After much searching, she found Del Toral at the EPA's Region 5 in Chicago. He explained to her that her instincts were right, and that she had good cause to be concerned about the way testing was being done.

"The practice of pre-flushing before collecting compliance samples has been shown to result in the minimization of lead capture and significant underestimation of lead levels in drinking water," wrote Del Toral in an internal memo dated June 24.

Del Toral went on to say that the city's testing methods were a "serious concern" because they "could provide a false sense of security to the residents of Flint regarding lead levels in the water." As a result, he warned, residents could fail to take the necessary precautions to protect their families from lead in the drinking water.

Virginia Tech's Edwards completely agrees with Del Toral's assessment.

"The net effect of a 'pre-flush' is to greatly reduce the likelihood of detecting lead in samples collected … that would normally be present in the consumers drinking water," Edwards wrote in an email. "I have long maintained that the practice should be banned, as it artificially lowers the amount of lead detected in samples versus typical consumer exposure."

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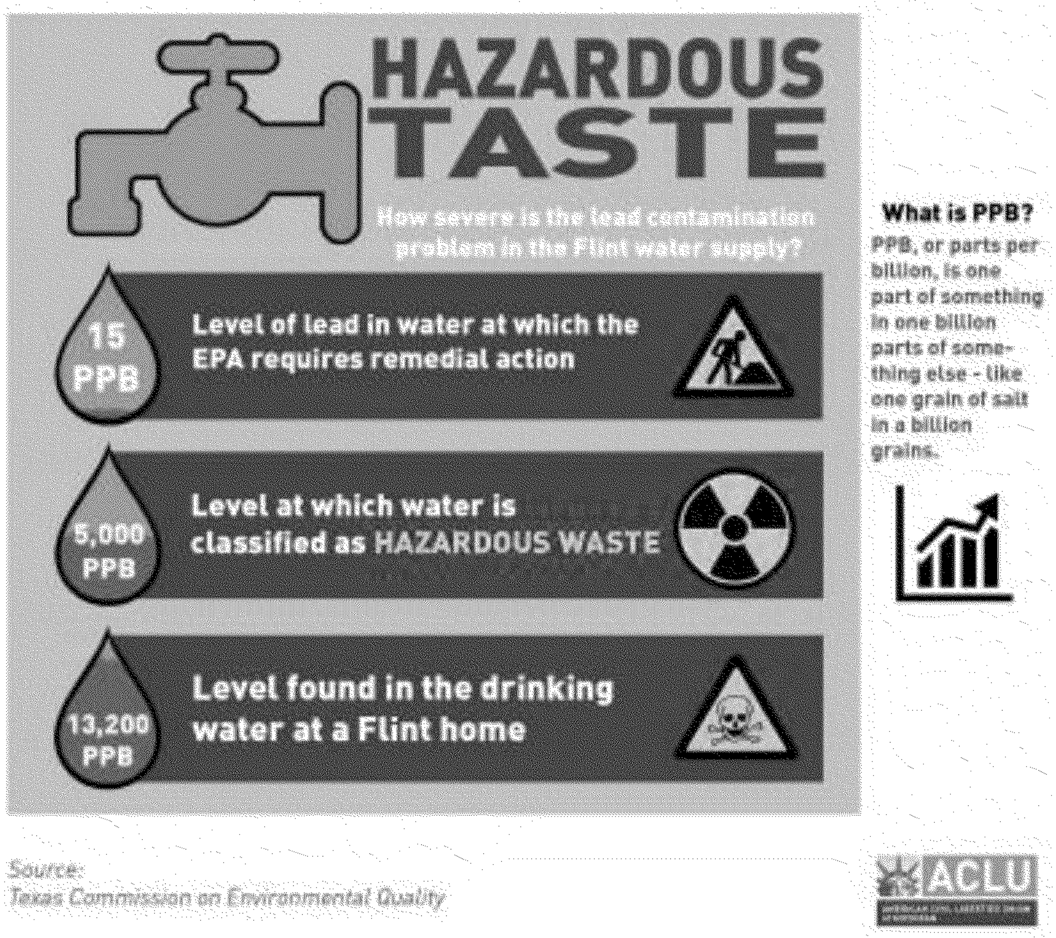

HAZARDOUS TASTE
How severe is the lead contamination problem in the Flint water supply?
15 PPB
Level of lead in water at which the EPA requires remedial action
5,000 PPB
Level at which water is classified as HAZARDOUS WASTE
13,200 PPB
Level found in the drinking water at a Flint home
What is PPB?
ACLU

PPB, or parts per billion, is one part of something in one billion parts of something else - like one grain of salt in a billion grains.

Source:
Texas Commission on Environmental Quality

Del Toral contended in an interview that what Flint's doing is actually exploiting a "loophole" in the law.

MDT: Unfortunately, I can't recall exactly what I said on this. Flint, as well as all other systems in Michigan are following the MDEQ guidance which includes the pre-flushing.

"From a technical standpoint, there's no justification for the way Flint is conducting its tests," Del Toral said. "Any credible scientist will tell you [the city's] method is not the way to catch worst-case conditions."

There is no legitimate reason for the city's methodology, said Del Toral.

MDT: Again, this is ACLU wording. I think I said something like there was no technical reason for pre-flushing (i.e., it is not something that is done in response to a problem with the EPA sampling method).

EPA rules, he said, required that such interviews be routed through the agency's public affairs people. But he was willing to speak out nonetheless, he said, because of the potential harm to the public.

MDT: See above comment on this issue.

FLUSHING OUT REAL ANSWERS

It was Del Toral who, after determining that the lead problem plaguing the Walters family was coming from outside their home, connected LeeAnne with Edwards at Virginia Tech.

Instead of taking a single sample after a line had been "pre-flushed" under the city's direction, Edwards instructed Walters to collect a series of samples from water that had been allowed to sit in the service line long enough to accurately reflect levels the family could be exposed to under normal use.

MDT: This is not accurate. The water sat in the pipes from April 3, 2015 through April 27, 2015, which is not typical of average household usage.

(Meanwhile, that same service line, dug up and replaced after the sample collection, was found to be made of lead in one section and iron in another.)

Edwards tested the water and discovered that the lead contamination ranged from 200 ppb to the 13,200 ppb figure that stunned LeeAnne Walters—and should likewise shock many others.

Given the age of much of Flint's infrastructure, Edwards agrees with Del Toral's assessment that the test results they found at the Walters home amount to an alarm going off, and others in the city need to pay attention.

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treated water was provided by Detroit, which would be occurring city-wide.

"I do not see any reason why there would not be serious problems occurring in at least some other Flint homes," said Edwards.

In 1986, the U.S. Safe Drinking Water Act was amended to prohibit the use of lead pipes in public water systems. Every house built before that is potentially at risk, said Edwards. About half of Flint's roughly 40,000 homes are at least 50 years old.

Making things worse is the fact that the high levels of chlorine being used to treat Flint's dirty river water lead to the creation of a carcinogenic byproduct know as total trihalomethanes, or TTHM. To keep TTHM levels down, the city is adding ferric chloride. The trouble is, that additive can also accelerate the corrosion of lead and iron pipes.

Adding yet another layer to the problem is something the city is *not* doing.

According to Del Toral, Flint should be adding corrosion-control chemicals designed to help keep lead and copper in pipes from leaching into drinking water. Doing so is required by federal regulations, wrote Del Toral in his memo.

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"To our knowledge, that is inaccurate," said Flint spokesman Lorenz. "Before the plant was placed in operation, the City (and our engineering firm) had numerous discussions with DEQ personnel and inquired if corrosion-control chemicals – typically phosphates --needed to be included in the treatment process. The use of these chemicals was not required or mandated."

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In his memo, Del Toral warned: "The lack of mitigating treatment is especially concerning as the high lead levels [that result] will likely not be reflected in the City of Flint's compliance samples due to sampling procedures used…"

In other words, at the same time the city is exacerbating the problem, it's conducting tests that will probably fail to identify the true extent of the threat.

Del Toral described the situation as a “major concern.”

“In the absence of any corrosion control treatment, lead levels in drinking water can be expected to increase,” he warned in his memo.

The EPA offered Flint officials the use of agency experts to help get the situation under control, said Del Toral, but added that, to his knowledge, the city has so far declined all help.

MDT: This is inaccurate. My standing recommendation to R5 management is to pursue this and that has not played out yet. He may be mixing up what I said with what Ms. Walters said (see below).

LeeAnne Walters said that when she asked why city officials weren’t taking the EPA’s offer of assistance, she was told, “We don’t need it.”

Flint spokesman Lorenz, on the other hand, maintained that “the city continues to work closely with the MDEQ and the EPA Regional Office.”

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“What we need,” said Walters, “are more answers.”

But it’s not just answers the people of Flint require.

They also need solutions. And, as Del Toral’s EPA memo emphasizes, they need them immediately.

Click the link to read the full EPA Memo: http://www.aclumich.org/sites/default/files/file/EPAWaterReport062415.pdf

To: Bair, Rita[bair.rita@epa.gov]
Cc: Damato, Nicholas[damato.nicholas@epa.gov]; Henry, Timothy[henry.timothy@epa.gov]; Poy, Thomas[poy.thomas@epa.gov]
From: Deltoral, Miguel
Sent: Fri 7/10/2015 7:39:17 PM
Subject: Re: ACLU story on Flint drinking water: Corrosive Impact: Leaded Water and One Flint Family's Toxic Nightmare
MDT comments on ACLU article version 2 07-10-2015.docx

....
,,,,,,,,

Here are the updated responses. The top part contains the summary of inaccuracies/mischaracterizations. The bottom has the whole thing with my revised comments.

Miguel A. Del Toral
Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

From: Bair, Rita
Sent: Friday, July 10, 2015 12:12 PM
To: Deltoral, Miguel
Cc: Damato, Nicholas
Subject: RE: ACLU story on Flint drinking water: Corrosive Impact: Leaded Water and One Flint Family's Toxic Nightmare

Miguel, attached are my initial comments/reactions to what you wrote. Since this is going to Susan, I would really be as direct and to the point and defending yourself more. If you want to have a call with Nick and I to go through this more closely let me know.

From: Henry, Timothy
Sent: Friday, July 10, 2015 12:06 PM
To: Deltoral, Miguel
Cc: Bair, Rita; Hyde, Tinka; Damato, Nicholas
Subject: RE: ACLU story on Flint drinking water: Corrosive Impact: Leaded Water and One Flint Family's Toxic Nightmare

Thanks Miguel. Rita and Nick, please give this a careful read and if you see anything that is unclear or raises questions, please work with Miguel to clear up. Let me know when you are all satisfied and I will take a look and send it on to Tinka, Susan and Jeff.

Tim Henry
Deputy Director, Water Division
U.S. EPA (W-15J)
77 W. Jackson Blvd., Chicago, IL 60604-3590
Phone: 312.886.6107 Fax: 312.692.2578

From: Deltoral, Miguel
Sent: Friday, July 10, 2015 11:41 AM
To: Henry, Timothy
Cc: Bair, Rita; Hyde, Tinka; Damato, Nicholas
Subject: Re: ACLU story on Flint drinking water: Corrosive Impact: Leaded Water and One Flint Family's Toxic Nightmare
Importance: High

Here you go. If you have any questions or need any additional information, please let me know.

Miguel A. Del Toral

Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

From: Henry, Timothy
Sent: Friday, July 10, 2015 10:18 AM
To: Deltoral, Miguel
Cc: Bair, Rita; Hyde, Tinka
Subject: RE: ACLU story on Flint drinking water: Corrosive Impact: Leaded Water and One Flint Family's Toxic Nightmare

Thanks Miguel

Tim Henry
Deputy Director, Water Division
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77 W. Jackson Blvd., Chicago, IL 60604-3590
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From: Deltoral, Miguel
Sent: Friday, July 10, 2015 9:43 AM
To: Henry, Timothy
Cc: Bair, Rita; Hyde, Tinka
Subject: Re: ACLU story on Flint drinking water: Corrosive Impact: Leaded Water and One Flint Family's Toxic Nightmare

Hi Tim,

Yes, I just started work for the day but I will try to get that to folks asap. I will cut/paste and annotate the ACLU article text.

Miguel A. Del Toral

Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

From: Henry, Timothy
Sent: Thursday, July 9, 2015 05:40 PM
To: Deltoral, Miguel
Cc: Bair, Rita; Hyde, Tinka
Subject: Fwd: ACLU story on Flint drinking water: Corrosive Impact: Leaded Water and One Flint Family's Toxic Nightmare

Miguel -

I think Rita said you were already doing generally what Susan requests. Absent any earlier due date that we might get from ORA or Tinka, please have this information ready for Tinka Monday morning so she is prepared for senior staff at 1100.

Tim Henry

Deputy Director, Water Division

US EPA Region V

312-886-6107 (office)

Personal Phone / Ex. 6

Sent from my iPhone

Begin forwarded message:

> **From:** "Hedman, Susan" <hedman.susan@epa.gov>
> **Date:** July 9, 2015 at 17:26:28 CDT
> **To:** "Kelley, Jeff" <kelley.jeff@epa.gov>
> **Cc:** "Hyde, Tinka" <hyde.tinka@epa.gov>, "Henry, Timothy" <henry.timothy@epa.gov>, "Rowan, Anne" <rowan.anne@epa.gov>, "Kaplan, Robert" <kaplan.robert@epa.gov>
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>
> Thanks. Please ask WD to prepare a concise list of the inaccuracies -- and then we can determine whether to request a correction.
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On Jul 9, 2015, at 3:28 PM, Kelley, Jeff <kelley.jeff@epa.gov> wrote:

This just in … I haven't had a chance to read it yet, but I assume you'll be hearing from the mayor again shortly. Migel del Toral, the Water Division staffer quoted at length in the article, describes it as full of mischaracterizations and inaccuracies.

Corrosive Impact: Leaded Water and One Flint Family's Toxic Nightmare

Jul 09 Posted by Curt Guyette in Democracy Watch

It took a while for Citizen name / Ex. 6 [redacted] realize the full impact of the number: 13,200.

Citizen name / Ex. 6 [redacted]—a stay-at home mom with four sons and a husband in the Navy—had seen other numbers reflecting the quality of drinking water at her Flint home that were devastating. But 13,200? She'd never seen anything like this.

The city had tested her water twice in this past March and both times found dangerously high levels of lead—104 parts per billion (ppb) and 397 ppb, respectively.

Those numbers filled her with dread, because they meant her family had been exposed to high levels of a terribly toxic heavy metal that put her children's future in jeopardy.

But it was the result of a third test of the tap water in her home, performed by independent experts at Virginia Tech university, that most stunned Walters.

"It took a while for me to wrap my head around it," said Citizen name / Ex. 6 [redacted]

The VT researchers discovered lead levels in Walters' water reached a jaw-dropping 13,200 ppb—more than twice the amount at which the U.S. Environmental Protection Agency classifies water as hazardous waste.

"When I saw those numbers I was shocked," said Virginia Tech professor Marc Edwards, a former MacArthur Fellow and respected authority on corrosion in drinking-water systems, who oversaw the tests.

Edwards played a key role in discovering the problem of corroded water pipes and lead in Washington, D.C. drinking water during the early 2000s, in what has been described as one of the worst contamination events ever seen in an urban water system, with resulting increased incidence of childhood lead poisoning, miscarriages and fetal death.

In terms of lead levels, the Citizen name / Ex. 6 [redacted] family's numbers eclipsed even the worst D.C. homes.

"I have never in my 25-year career seen such outrageously high levels going into another home in the United States," said Edwards. "This was literally hazardous-waste levels."

But the condition of Citizen name / Ex. 6 [redacted] tap water raises a much more far-reaching question:

Since the city moved away from Detroit's water system and began pumping water from the Flint River, how many other families have been put at risk by the city's questionable testing procedures and handling of the water supply?

The Citizen name / Ex. 6 family surely isn't alone in dealing with the threat of lead-laced drinking water. About half of Flint's 40,000 homes are a half-century old or older, built at a time when water service lines were typically made of lead.

And according to various experts, including an EPA water-quality specialist, the city's actions are only exacerbating the threat.

"What the public needs is accurate information," explained Miguel Del Toral, regulations manager for the Ground Water and Drinking Water Branch of the EPA's Region 5.

Instead, the city is utilizing testing measures that almost ensure that worst-case scenarios such as the one facing the Walters family escape detection, asserted Del Toral in an internal EPA memo provided to the ACLU of Michigan.

Compounding the threat is what Del Toral describes as the continued inability of officials to adequately treat water coming into people's homes from the Flint River.

"I don't want to scare people unnecessarily," said Del Toral in a phone interview from his home in Chicago. "But there is absolutely a problem in Flint that needs to be addressed right away."

During his interview with the ACLU of Michigan, Del Toral said he was willing to go on the record with his concerns, but that he was doing so as a private citizen, not as a representative of the EPA.

EPA rules, he said, required that such interviews be routed through the agency's public affairs people. But he's willing to speak out nonetheless, he said, because of the potential harm to the public is so great, and the need to address it is so urgent.

WATERING DOWN THE TESTS

Perhaps the most vexing problem in all of this is the contamination caused by the city's decades-old network of lead and iron pipes—a problem directly connected to the switch to river water, and the city's failure to adequately treat it.

Under the U.S. Environmental Protection Agency's rules, if lead reaches a level of 15 parts per billion in water, the source of the problem must be identified and corrected.

In early March, after months of requests (and only after Citizen name / Ex. 6 had received a doctor's note raising concerns about problems with the water), the city finally conducted a test. It found lead levels of 104 ppb the first time. A second test recorded a level of 397 ppb.

Blood tests, taken after those water-sample numbers were reported, revealed that one of her children, a four year old, had lead poisoning.

The news was devastating, said Citizen name / Ex. 6 and the concern it creates for her child's future is haunting.

"Lead can affect almost every organ and system in your body," according to the EPA's web site. "Children six years old and younger are most susceptible … Even low levels of lead in the blood of children can result in: behavior and learning problems; lower IQ and hyperactivity; slowed growth; and hearing problems."

Those dangers made Citizen name / Ex. 6 all the more determined to get her questions answered.

For one thing, she wanted to know why residents were being instructed to "pre-flush" water lines before drawing samples that would be tested by the city

After much searching, she found Del Toral at the EPA's Region 5 in Chicago. He explained to her that her instincts were right, and that she had good cause to be concerned about the way testing was being done.

"The practice of pre-flushing before collecting compliance samples has been shown to result in the minimization of lead capture and significant underestimation of lead levels in drinking water," wrote Del Toral in an internal memo dated June 24.

Del Toral went on to say that the city's testing methods were a "serious concern" because they "could provide a false sense of security to the residents of Flint regarding lead levels in the water." As a result, he warned, residents could fail to take the necessary precautions to protect their families from lead in the drinking water.

Virginia Tech's Edwards completely agrees with Del Toral's assessment.

"The net effect of a 'pre-flush' is to greatly reduce the likelihood of detecting lead in samples collected … that would normally be present in the consumers drinking water," Edwards wrote in an email. "I have long maintained that the practice should be banned, as it artificially lowers the amount of lead detected in samples versus typical consumer exposure."

Asked about these concerns, city spokesman Jason Lorenz offered the following email reply: "While I cannot directly respond to Mr. Del Toral's remarks without first contacting the EPA Region 5 office, I can say that the City of Flint follows all the testing procedures and schedules as required by the U.S. EPA."

He added that the Michigan Department of Environmental Quality (MDEQ) endorses the city's sampling method. The MDEQ did not respond to phone calls and e-mails seeking its comments on the controversy.

Del Toral contended in an interview that what Flint's doing is actually exploiting a "loophole" in the law.

"From a technical standpoint, there's no justification for the way Flint is conducting its tests," Del Toral said. "Any credible scientist will tell you [the city's] method is not the way to catch worst-case conditions."

There is no legitimate reason for the city's methodology, said Del Toral.

EPA rules, he said, required that such interviews be routed through the agency's public affairs people. But he was willing to speak out nonetheless, he said, because of the potential harm to the public.

FLUSHING OUT REAL ANSWERS

It was Del Toral who, after determining that the lead problem plaguing the Citizen name / Ex. 6 family was coming from outside their home, connected Citizen name / Ex. 6 with Edwards at Virginia Tech.

Instead of taking a single sample after a line had been "pre-flushed" under the city's direction, Edwards instructed Citizen name / Ex. 6 o collect a series of samples from water that had been allowed to sit in the service line long enough to accurately reflect levels the family could be exposed to under normal use.

(Meanwhile, that same service line, dug up and replaced after the sample collection, was found to be made of lead in one section and iron in another.)

Edwards tested the water and discovered that the lead contamination ranged from 200 ppb to the 13,200 ppb figure that stunned Citizen name / Ex. 6 —and should likewise shock many others.

Given the age of much of Flint's infrastructure, Edwards agrees with Del Toral's assessment that the test results they found at the Walters home amount to an alarm going off, and others in the city need to pay attention.

"I do not see any reason why there would not be serious problems occurring in at least some other Flint homes," said Edwards.

In 1986, the U.S. Safe Drinking Water Act was amended to prohibit the use of lead pipes in public water systems. Every house built before that is potentially at risk, said Edwards. About half of Flint's roughly 40,000 homes are at least 50 years old.

Making things worse is the fact that the high levels of chlorine being used to treat Flint's dirty river water lead to the creation of a carcinogenic byproduct know as total trihalomethanes, or TTHM. To keep TTHM levels down, the city is adding ferric chloride. The trouble is, that additive can also accelerate the corrosion of lead and iron pipes.

Adding yet another layer to the problem is something the city is not doing.

According to Del Toral, Flint should be adding corrosion-control chemicals designed to help keep lead and copper in pipes from leaching into drinking water. Doing so is required by federal regulations, wrote Del Toral in his memo.

"To our knowledge, that is inaccurate," said Flint spokesman Lorenz. "Before the plant was placed in operation, the City (and our engineering firm) had numerous discussions with DEQ personnel and inquired if corrosion-control chemicals – typically phosphates --needed to be included in the treatment process. The use of these chemicals was not required or mandated."

What's indisputable is this:

Flint's water contained corrosion-control chemicals until April 2014, when Flint's ties to the Detroit water system were severed. Flint officials hailed that changeover as a cost-cutting move for a city facing a financial crisis so severe it had been placed under the control of a state-appointed emergency manager.

Discontinuing the use of the anti-corrosion chemicals allowed toxic scale built up on the insides of pipes over the past decades to be released into water flowing into people's homes, explained Del Toral.

In his memo, Del Toral warned: "The lack of mitigating treatment is especially concerning as the high lead levels [that result] will likely not be reflected in the City of Flint's compliance samples due to sampling procedures used…"

In other words, at the same time the city is exacerbating the problem, it's conducting tests that will probably fail to identify the true extent of the threat.

Del Toral described the situation as a "major concern."

"In the absence of any corrosion control treatment, lead levels in drinking water can be expected to increase," he warned in his memo.

The EPA offered Flint officials the use of agency experts to help get the situation under control, said Del Toral, but added that, to his knowledge, the city has so far declined all help.

Citizen name / Ex. 6 said that when she asked why city officials weren't taking the EPA's offer of assistance, she was told, "We don't need it."

Flint spokesman Lorenz, on the other hand, maintained that "the city continues to work closely with the MDEQ and the EPA Regional Office."

As for Walters's family, that the city has finally replaced the service line leading to their home, and lead levels have dropped below the 15 ppb EPA action level.

The problem now, she said, is that water currently coming out of her tap tinged yellow and smells of rotten eggs. City officials have given her no explanation as to the possible cause of that.

It is just one more in a long list of questions that need to be addressed.

"What we need," said Citizen name / Ex. 6 "are more answers."

But it's not just answers the people of Flint require.

They also need solutions. And, as Del Toral's EPA memo emphasizes, they need them immediately.

Click the link to read the full EPA Memo:
http://www.aclumich.org/sites/default/files/file/EPAWaterReport062415.pdf

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Jeff Kelley
Director, Office of External Communications
U.S. EPA Region 5
ph: 312-353-1159

To: Hyde, Tinka[hyde.tinka@epa.gov]
Cc: Bair, Rita[bair.rita@epa.gov]; Damato, Nicholas[damato.nicholas@epa.gov]; Deltoral, Miguel[deltoral.miguel@epa.gov]
From: Henry, Timothy
Sent: Fri 7/10/2015 8:22:34 PM
Subject: FW: ACLU story on Flint drinking water: Corrosive Impact: Leaded Water and One Flint Family's Toxic Nightmare
MDT comments on ACLU article version 2 07-10-2015.docx

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Miguel said to give him a call on Monday morning if you have any questions regarding the content and he can provide explanation, additional information, etc.

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Sent: Thursday, July 09, 2015 5:26 PM
To: Kelley, Jeff
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Those numbers filled her with dread, because they meant her family had been exposed to high levels of a terribly toxic heavy metal that put her children's future in jeopardy.

But it was the result of a third test of the tap water in her home, performed by independent experts at Virginia Tech university, that most stunned Walters.

"It took a while for me to wrap my head around it," said Walters.

The VT researchers discovered lead levels in Walters' water reached a jaw-dropping 13,200 ppb—more than twice the amount at which the U.S. Environmental Protection Agency classifies water as hazardous waste.

"When I saw those numbers I was shocked," said Virginia Tech professor Marc Edwards, a former MacArthur Fellow and respected authority on corrosion in drinking-water systems, who oversaw the tests.

Edwards played a key role in discovering the problem of corroded water pipes and lead in Washington, D.C. drinking water during the early 2000s, in what has been described as one of the worst contamination events ever seen in an urban water system, with resulting increased incidence of childhood lead poisoning, miscarriages and fetal death.

In terms of lead levels, the Walters family's numbers eclipsed even the worst D.C. homes.

"I have never in my 25-year career seen such outrageously high levels going into another home in the United States," said Edwards. "This was literally hazardous-waste levels."

But the condition of Walters' tap water raises a much more far-reaching question: Since the city moved away from Detroit's water system and began pumping water from the Flint River, how many other families have been put at risk by the city's questionable testing procedures and handling of the water supply?

The Walters family surely isn't alone in dealing with the threat of lead-laced drinking water. About half of Flint's 40,000 homes are a half-century old or older, built at a time when water service lines were typically made of lead.

And according to various experts, including an EPA water-quality specialist, the city's actions are only exacerbating the threat.

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Perhaps the most vexing problem in all of this is the contamination caused by the city’s decades-old network of lead and iron pipes—a problem directly connected to the switch to river water, and the city’s failure to adequately treat it.

Under the U.S. Environmental Protection Agency's rules, if lead reaches a level of 15 parts per billion in water, the source of the problem must be identified and corrected.

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Del Toral went on to say that the city’s testing methods were a “serious concern” because they “could provide a false sense of security to the residents of Flint regarding lead levels in the water.” As a result, he warned, residents could fail to take the necessary precautions to protect their families from lead in the drinking water.

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Jeff Kelley
Director, Office of External Communications
U.S. EPA Region 5
ph: 312-353-1159

To: Tinka Hyde[Hyde.Tinka@epa.gov]
Cc: Bair, Rita[bair.rita@epa.gov]; Nicholas Damato[Damato.Nicholas@epa.gov]; Deltoral, Miguel[deltoral.miguel@epa.gov]
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The VT researchers discovered lead levels in Walters' water reached a jaw-dropping 13,200 ppb—more than twice the amount at which the U.S. Environmental Protection Agency classifies water as hazardous waste.

"When I saw those numbers I was shocked," said Virginia Tech professor Marc Edwards, a former MacArthur Fellow and respected authority on corrosion in drinking-water systems, who oversaw the tests.

Edwards played a key role in discovering the problem of corroded water pipes and lead in Washington, D.C. drinking water during the early 2000s, in what has been described as one of the worst contamination events ever seen in an urban water system, with resulting increased incidence of childhood lead poisoning, miscarriages and fetal death.

In terms of lead levels, the Walters family's numbers eclipsed even the worst D.C. homes.

"I have never in my 25-year career seen such outrageously high levels going into another home in the United States," said Edwards. "This was literally hazardous-waste levels."

But the condition of Walters' tap water raises a much more far-reaching question: Since the city moved away from Detroit's water system and began pumping water from the Flint River, how many other families have been put at risk by the city's questionable testing procedures and handling of the water supply?

The Walters family surely isn't alone in dealing with the threat of lead-laced drinking water. About half of Flint's 40,000 homes are a half-century old or older, built at a time when water service lines were typically made of lead.

And according to various experts, including an EPA water-quality specialist, the city's actions are only exacerbating the threat.

"What the public needs is accurate information," explained Miguel Del Toral, regulations manager for the Ground Water and Drinking Water Branch of the EPA's Region 5.

Instead, the city is utilizing testing measures that almost ensure that worst-case scenarios such as the one facing the Walters family escape detection, asserted Del Toral in an internal EPA memo provided to the ACLU of Michigan.

Compounding the threat is what Del Toral describes as the continued inability of officials to adequately treat water coming into people's homes from the Flint River.

"I don't want to scare people unnecessarily," said Del Toral in a phone interview from his home in Chicago. "But there is absolutely a problem in Flint that needs to be addressed right away."

During his interview with the ACLU of Michigan, Del Toral said he was willing to go on the record with his concerns, but that he was doing so as a private citizen, not as a representative of the EPA.

EPA rules, he said, required that such interviews be routed through the agency's public affairs people. But he's willing to speak out nonetheless, he said, because of the potential harm to the public is so great, and the need to address it is so urgent.

WATERING DOWN THE TESTS

Perhaps the most vexing problem in all of this is the contamination caused by the city's decades-old network of lead and iron pipes—a problem directly connected to the switch to river water, and the city's failure to adequately treat it.

Under the U.S. Environmental Protection Agency's rules, if lead reaches a level of 15 parts per billion in water, the source of the problem must be identified and corrected.

In early March, after months of requests (and only after Walters had received a doctor's note raising concerns about problems with the water), the city finally conducted a test. It found lead levels of 104 ppb the first time. A second test recorded a level of 397 ppb.

Blood tests, taken after those water-sample numbers were reported, revealed that one of her children, a four year old, had lead poisoning.

The news was devastating, said Walters, and the concern it creates for her child's future is haunting.

"Lead can affect almost every organ and system in your body," according to the EPA's web site. "Children six years old and younger are most susceptible … Even low levels of lead in the blood of children can result in: behavior and learning problems; lower IQ and hyperactivity; slowed growth; and hearing problems."

Those dangers made Walters all the more determined to get her questions answered.

For one thing, she wanted to know why residents were being instructed to "pre-flush" water lines before drawing samples that would be tested by the city

After much searching, she found Del Toral at the EPA's Region 5 in Chicago. He explained to her that her instincts were right, and that she had good cause to be concerned about the way testing was being done.

"The practice of pre-flushing before collecting compliance samples has been shown to result in the minimization of lead capture and significant underestimation of lead levels in drinking water," wrote Del Toral in an internal memo dated June 24.

Del Toral went on to say that the city's testing methods were a "serious concern" because they "could provide a false sense of security to the residents of Flint regarding lead levels in the water." As a result, he warned, residents could fail to take the necessary precautions to protect their families from lead in the drinking water.

Virginia Tech's Edwards completely agrees with Del Toral's assessment.

"The net effect of a 'pre-flush' is to greatly reduce the likelihood of detecting lead in samples collected … that would normally be present in the consumers drinking water," Edwards wrote in an email. "I have long maintained that the practice should be banned, as it artificially lowers the amount of lead detected in samples versus typical consumer exposure."

Asked about these concerns, city spokesman Jason Lorenz offered the following email reply: "While I cannot directly respond to Mr. Del Toral's remarks without first contacting the EPA Region 5 office, I can say that the City of Flint follows all the testing procedures and schedules as required by the U.S. EPA."

He added that the Michigan Department of Environmental Quality (MDEQ) endorses the city's sampling method. The MDEQ did not respond to phone calls and e-mails seeking its comments on the controversy.

Del Toral contended in an interview that what Flint's doing is actually exploiting a "loophole" in the law.

“From a technical standpoint, there’s no justification for the way Flint is conducting its tests,” Del Toral said. “Any credible scientist will tell you [the city’s] method is not the way to catch worst-case conditions.”

There is no legitimate reason for the city’s methodology, said Del Toral.

EPA rules, he said, required that such interviews be routed through the agency’s public affairs people. But he was willing to speak out nonetheless, he said, because of the potential harm to the public.

FLUSHING OUT REAL ANSWERS

It was Del Toral who, after determining that the lead problem plaguing the Walters family was coming from outside their home, connected LeeAnne with Edwards at Virginia Tech.

Instead of taking a single sample after a line had been “pre-flushed” under the city’s direction, Edwards instructed Walters to collect a series of samples from water that had been allowed to sit in the service line long enough to accurately reflect levels the family could be exposed to under normal use.

(Meanwhile, that same service line, dug up and replaced after the sample collection, was found to be made of lead in one section and iron in another.)

Edwards tested the water and discovered that the lead contamination ranged from 200 ppb to the 13,200 ppb figure that stunned LeeAnne Walters—and should likewise shock many others.

Given the age of much of Flint’s infrastructure, Edwards agrees with Del Toral’s assessment that the test results they found at the Walters home amount to an alarm going off, and others in the city need to pay attention.

“I do not see any reason why there would not be serious problems occurring in at least some other Flint homes,” said Edwards.

In 1986, the U.S. Safe Drinking Water Act was amended to prohibit the use of lead pipes in public water systems. Every house built before that is potentially at risk, said Edwards. About half of Flint’s roughly 40,000 homes are at least 50 years old.

Making things worse is the fact that the high levels of chlorine being used to treat Flint’s dirty river water lead to the creation of a carcinogenic byproduct know as total trihalomethanes, or TTHM. To keep TTHM levels down, the city is adding ferric chloride. The trouble is, that additive can also accelerate the corrosion of lead and iron pipes.

Adding yet another layer to the problem is something the city is not doing.

According to Del Toral, Flint should be adding corrosion-control chemicals designed to help keep lead and copper in pipes from leaching into drinking water. Doing so is required by federal regulations, wrote Del Toral in his memo.

“To our knowledge, that is inaccurate,” said Flint spokesman Lorenz. “Before the plant was placed in operation, the City (and our engineering firm) had numerous discussions with DEQ personnel and inquired if corrosion-control chemicals – typically phosphates --needed to be included in the treatment process. The use of these chemicals was not required or mandated.”

What’s indisputable is this:

Flint’s water contained corrosion-control chemicals until April 2014, when Flint’s ties to the Detroit water system were severed. Flint officials hailed that changeover as a cost-cutting move for a city facing a financial crisis so severe it had been placed under the control of a state-appointed emergency manager.

Discontinuing the use of the anti-corrosion chemicals allowed toxic scale built up on the insides of pipes over the past decades to be released into water flowing into people’s homes, explained Del Toral.

In his memo, Del Toral warned: “The lack of mitigating treatment is especially concerning as the high lead levels [that result] will likely not be reflected in the City of Flint’s compliance samples due to sampling procedures used…”

In other words, at the same time the city is exacerbating the problem, it’s conducting tests that will probably fail to identify the true extent of the threat.

Del Toral described the situation as a “major concern.”

“In the absence of any corrosion control treatment, lead levels in drinking water can be expected to increase,” he warned in his memo.

The EPA offered Flint officials the use of agency experts to help get the situation under control, said Del Toral, but added that, to his knowledge, the city has so far declined all help.

LeeAnne Walters said that when she asked why city officials weren’t taking the EPA’s offer of assistance, she was told, “We don’t need it.”

Flint spokesman Lorenz, on the other hand, maintained that “the city continues to work closely with the MDEQ and the EPA Regional Office.”

As for Walters’s family, that the city has finally replaced the service line leading to their home, and lead levels have dropped below the 15 ppb EPA action level.

The problem now, she said, is that water currently coming out of her tap tinged yellow and smells of rotten eggs. City officials have given her no explanation as to the possible cause of that.

It is just one more in a long list of questions that need to be addressed.

“What we need,” said Walters, “are more answers.”

But it’s not just answers the people of Flint require.

They also need solutions. And, as Del Toral’s EPA memo emphasizes, they need them immediately.

Click the link to read the full EPA Memo:
http://www.aclumich.org/sites/default/files/file/EPAWaterReport062415.pdf

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Jeff Kelley
Director, Office of External Communications
U.S. EPA Region 5
ph: 312-353-1159

To: Hyde, Tinka[hyde.tinka@epa.gov]
Cc: Harris, Kimberly[harris.kimberly@epa.gov]; Crooks, Jennifer[crooks.jennifer@epa.gov]
From: Deltoral, Miguel
Sent: Mon 7/13/2015 11:57:10 AM
Subject: Fw: Flint Water Question from a Pregnant Flint Resident

Hi Tinka,

Tom, Rita, Nick and Tim are out, so I wanted to run this by you before responding...

We received an email from a resident in Flint which was also sent to Dr Edwards at Virginia Tech. Below is the email exchange between Dr. Edwards and the resident. I propose to respond to the resident with the draft email below, but wanted to run this by you before I send it. Please advise.

Kim - Please send the draft response on TTHMs to Tinka for review before sending and copy Jen, since she is acting today.

DRAFT RESPONSE

Hello **Citizen name / Ex. 6**

I agree with Marc's responses on the water filter . Filters that are certified to remove lead are typically designed to remove 99 percent of lead. They are also designed with additional capacity as a safety measure, but you should still change the filter in accordance with the manufacturer's instructions.

Regarding the sampling, it can get fairly expensive to collect water samples to characterize lead levels in the untreated and treated water and I don't think that is necessary. If you change the filter in accordance with the manufacturer's instructions, you should be fine. If your concern is regarding the capacity of the filter to remove the lead, you could collect a sample of the filtered water which I think would be more informative and less expensive than trying to characterize the untreated and treated water. If you decide to test the water, you should use a laboratory that has been certified by the State for drinking water analyses (link below).

http://www.michigan.gov/deq/0,4561,7-135-3307_4131_4156-36940--,00.html

Regarding your questions on the TTHMs, I am not a health effects expert, so I am forwarding your email to Kimberly Harris for response.

Regards,

Miguel Del Toral

Hi Kim,

See email exchange below. I think Marc's responses are fine on the lead, but we need to respond to the TTHM/showering questions, which I think you have responded in the past. Please forward your draft response to Tinka for review prior to responding.

Miguel A. Del Toral
Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

From: Marc Edwards <edwardsm@vt.edu>
Sent: Sunday, July 12, 2015 09:22 AM
To: 'Mona Munroe-Younis'
Cc: Deltoral, Miguel
Subject: RE: Flint Water Question from a Pregnant Flint Resident

I think it will ok. Just replace the filter in the device on the recommended schedule, and do not drink the water if it is discolored…the water should look clean.

Best Regards, Marc

From: Citizen name / Ex. 6
Sent: Sunday, July 12, 2015 12:24 AM
To: Marc Edwards
Cc: deltoral.miguel@epa.gov

Subject: Re: Flint Water Question from a Pregnant Flint Resident

Marc, thank you for your quick reply and thoughtful feedback. I appreciate it very much. You are correct that the faucet filter is rated to remove 99% of lead contamination. What I am not certain about is whether that level of removal is variable based on the amount of lead coming to the faucet. I suppose that if a higher lead level would just result in the filter needing replacement sooner rather than passing more through the filter and into my drinking glass. Please correct me if this is a mistaken assumption.

Again, thank you, and Miguel I appreciate any recommendations you may have as well.

All the best,

Mona

On Sat, Jul 11, 2015 at 8:31 PM, Marc Edwards <edwardsm@vt.edu> wrote:

Hi Citizen name / Ex. 6

I too thank Miguel for his leadership on this.

I think the filtered water will generally be of very high quality. It is likely that your filtered is rated for lead removal....let me know.

Even if it is not rated for lead, it is probably a big improvement and does remove a lot of the lead, if it is present.

Bottled water is a good alternative, but as you say, there is no “perfectly” pure water source.

If it were me, I would continue to use the filtered water. Good luck with your pregnancy. Sounds like you are doing everything right.

Best Regards,

Marc

From: Citizen name / Ex. 6
Sent: Saturday, July 11, 2015 5:57 PM
To: deltoral.miguel@epa.gov; edwardsm@vt.edu
Subject: Flint Water Question from a Pregnant Flint Resident

Dear Dr. Edwards and Dr. Del Toral,

Thank you for the work you have already done in my city to protect families from water contaminant exposure. I am a Flint resident, pregnant with my first child, and therefore advised to drink a whopping 10-16 cups of water each day. I am writing to see if you can shed some light or point me to another source for answers regarding water testing and the safest option for staying hydrated.

If your wife or sister or friend were living in Flint and pregnant, what course of action would you recommend she take? Here is my situation:

- A little background: Prior to becoming pregnant, I installed a pur advanced water filter on our kitchen faucet and always use it when drinking from the tap, which I do frequently. (According to the pur website, the filter is said to filter out 70+ chemicals. Recently, I contacted the company to request more information on exactly what chemicals are filtered and up to what level, and am awaiting their reply.) When using the filter, the water is crystal clear, free of the river smell and without the slight yellow tinge that we sometimes have coming out of the tap (unlike in our bathroom sink which I use to brush my teeth...). I was compelled to purchase the filter because my legs began to swell after Flint changed to the river water, and after installing the filter this problem went away. I even tested the difference by drinking filtered water some days (consistently no swelling) and and unfiltered water others (consistent swelling) for a week or two. I understand the swelling to be the result of sodium chloride in our water which is corrosive enough to make GM stop using Flint water in their local plant

(http://www.mlive.com/news/flint/index.ssf/2014/10/general_motors_wont_use_flint.html)

- Given your findings of high levels of lead in some residents' water, my husband strongly believes that I should cease drinking all Flint water and drink bottled water instead. However, I have read extensively about safety concerns of plastic-bottled water (chemists who work with plastics avoid drinking it) and this does not seem to be a safer option despite frequent bottled water drives organized by well-meaning activists across Flint.

- I would like to test our house's tap water with and without the kitchen filter using an independent lab, but my husband thinks this will be a futile effort because we have no reliable way of knowing if the results on one day will be consistent with results on other days, such as if the City of Flint were doing some special change to the water treatment procedure. Would testing multiple times across several weeks be sufficient to address this possibility? If so, how many times and at what interval would you recommend testing, and can you recommend a testing lab? If a high level of lead is discovered, who should we contact to determine where the lead is coming from as a next step?

- According to the consultant that Erin Brockovich sent to Flint earlier this year (http://www.mlive.com/news/flint/index.ssf/2015/02/tthm_how_worried_should_flint.html), total trihalomethanes (TTHM) in the water are dangerous to pregnant women through inhalation exposure during hot showers. (And pregnant women tend to appreciate long, hot showers because our backs are constantly aching!) At this point, the lead issues seem more frightening, though we are considering investing in a costly whole-house water filtration system to deal with both. How can we determine the relative risk to pregnant women for lead in the water vs. TTHMs? I suppose that could differ from house to house. What sort of whole-house filtration would you recommend?

- Are there any other considerations that you think I should keep in mind?

Even for those residents who are privileged to be educated and able to afford water filtration devices, the public water issues we are living with are confounding. The information we receive about our public water supply tends to be fragmented and coming from local public officials who have an interest in downplaying public concerns. In the meantime, it is very difficult to make truly informed decisions about our health.

Thank you in advance for any insights you can share and helping to give my baby a good start in life. I understand if you need to respond as a fellow resident of the world and as experts in general rather than as affiliates of the organizations in which you are employed.

Thank you much,

Citizen name / Ex. 6

Personal Address / Ex. 6

Personal Phone / Ex. 6

To: Deltoral, Miguel[deltoral.miguel@epa.gov]
Cc: Harris, Kimberly[harris.kimberly@epa.gov]; Crooks, Jennifer[crooks.jennifer@epa.gov]
From: Hyde, Tinka
Sent: Mon 7/13/2015 2:48:17 PM
Subject: RE: Flint Water Question from a Pregnant Flint Resident

Miguel – Thanks for sharing your draft response. I recommend the following:

1. That we send one response that covers both the TTHMs and the Lead questions. Once you have Kim's response then please combine them into one message.

2. I think that she wants to test her water because she only has one filtered tap (the kitchen) and her bath tap is not filtered. She also had a couple other questions which I'm not sure we can answer. To make sure we provide a complete response, I have a couple of questions:

- □□□□□□□□ Will the city test her unfiltered water? If so we can refer her to them.
- □□□□□□□□ Do we have a recommended testing frequency?
- □□□□□□□□ If there are high levels of lead how to they assess the source?

If we are only responding to the question of how to get water tested, I recommend rewording the second paragraph as follows:

~~Regarding the sampling, it can get fairly expensive to collect water samples to characterize lead levels in the untreated and treated water and I don't think that is necessary. If you change the filter in accordance with the manufacturer's instructions, you should be fine. If your concern is regarding the capacity of the filter to remove the lead, you could collect a sample of the filtered water which I think would be more informative and less expensive than trying to characterize the untreated and treated water.~~ If you decide to test your filtered and unfiltered water, you should use a laboratory that has been certified by the State for drinking water analyses (link below).

http://www.michigan.gov/deq/0,4561,7-135-3307_4131_4156-36940--,00.html

Once you have answered my questions above and Kim has developed a response, please send me your updated response. Thanks.

From: Deltoral, Miguel
Sent: Monday, July 13, 2015 6:57 AM
To: Hyde, Tinka
Cc: Harris, Kimberly; Crooks, Jennifer
Subject: Fw: Flint Water Question from a Pregnant Flint Resident

Hi Tinka,

Tom, Rita, Nick and Tim are out, so I wanted to run this by you before responding...

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Kim - Please send the draft response on TTHMs to Tinka for review before sending and copy Jen, since she is acting today.

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Citizen name / Ex. 6

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Regards,

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Miguel A. Del Toral

Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604

Phone: (312) 886-5253

From: Marc Edwards <edwardsm@vt.edu>
Sent: Sunday, July 12, 2015 09:22 AM
To: Citizen name / Ex. 6
Cc: Deltoral, Miguel
Subject: RE: Flint Water Question from a Pregnant Flint Resident

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From: Personal Email / Ex. 6
Sent: Sunday, July 12, 2015 12:24 AM
To: Marc Edwards
Cc: deltoral.miguel@epa.gov
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Again, thank you, and Miguel I appreciate any recommendations you may have as well.

All the best,

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Bottled water is a good alternative, but as you say, there is no "perfectly" pure water source.

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- Given your findings of high levels of lead in some residents' water, my husband strongly believes that I should cease drinking all Flint water and drink bottled water instead. However, I have read extensively about safety concerns of plastic-bottled water (chemists who work with plastics avoid drinking it) and this does not seem to be a safer option despite frequent bottled water drives organized by well-meaning activists across Flint.
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Thank you much,

Citizen name / Ex. 6

To: Hyde, Tinka[hyde.tinka@epa.gov]
Cc: Harris, Kimberly[harris.kimberly@epa.gov]; Crooks, Jennifer[crooks.jennifer@epa.gov]
From: Deltoral, Miguel
Sent: Mon 7/13/2015 3:24:13 PM
Subject: Re: Flint Water Question from a Pregnant Flint Resident

Sounds good. I'll wait on Kim and combine everyone into one response. On your questions below...

Will the city test her unfiltered water? If so we can refer her to them.

Yes, the city will test her water, but they do resident-requested testing using pre-flushed 1st draw samples and I cannot in good conscience recommend that. It would miss any lead that is there if she has a lead service line and she would have a false sense of security and may end up being exposed to high lead levels.

Do we have a recommended testing frequency?

The sample collection methodology is far more important than the testing frequency. For example, if frequent (monthly) pre-flushed first-draw samples were collected, you would miss the high lead every time you sample. You would catch lead particles from time to time becasuse they are released sporadically, but that is hit or miss in any given sample. If you collect a set of sequential samples only once, that would provide much better information because it tells you if there is high lead and where it is coming from, but a typical set of sequential samples would involved 12-15 samples at about $25 per sample ($300 - $375), and that's not something the average homeowner can afford. I didn't want to get into all of these details with the resident for obvious resasons. Regarding the bathroom tap...I don't recommend filters for the bathroom tap, so I should have also included a recommendation that if she tests the filtered water from the kitchen tap and it's fine, maybe another recommendation is that only water from the kitchen tap should be used for consumption (cooking/drinking).

•□□□□□□□□ If there are high levels of lead how to they assess the source?

The most straightforward way is to collect sequential samples, but as I mentioned that can be expensive, and if you find a lead line, my recommendation would be to use a water filter anyway. Since she is already doing that, I tried to provide advice based on her specific situation.

Miguel A. Del Toral
Regulations Manager
U.S. EPA R5 GWDWB

77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

From: Hyde, Tinka
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Cc: Harris, Kimberly; Crooks, Jennifer
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http://www.michigan.gov/deq/0,4561,7-135-3307_4131_4156-36940--,00.html

Once you have answered my questions above and Kim has developed a response, please send me your updated response. Thanks.

From: Deltoral, Miguel
Sent: Monday, July 13, 2015 6:57 AM
To: Hyde, Tinka
Cc: Harris, Kimberly; Crooks, Jennifer
Subject: Fw: Flint Water Question from a Pregnant Flint Resident

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Tom, Rita, Nick and Tim are out, so I wanted to run this by you before responding...

We received an email from a resident in Flint which was also sent to Dr Edwards at Virginia Tech. Below is the email exchange between Dr. Edwards and the resident. I propose to respond to the resident with the draft email below, but wanted to run this by you before I send it. Please advise.

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DRAFT RESPONSE

Hello **Citizen name / Ex. 6**

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Regards,

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Miguel A. Del Toral

Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

From: Marc Edwards <edwardsm@vt.edu>
Sent: Sunday, July 12, 2015 09:22 AM
To: 'Mona Munroe-Younis'
Cc: Deltoral, Miguel
Subject: RE: Flint Water Question from a Pregnant Flint Resident

I think it will ok. Just replace the filter in the device on the recommended schedule, and do not drink the water if it is discolored…the water should look clean.

Best Regards, Marc

From: **Citizen name / Ex. 6**
Sent: Sunday, July 12, 2015 12:24 AM
To: Marc Edwards
Cc: deltoral.miguel@epa.gov
Subject: Re: Flint Water Question from a Pregnant Flint Resident

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Again, thank you, and Miguel I appreciate any recommendations you may have as well.

All the best,

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On Sat, Jul 11, 2015 at 8:31 PM, Marc Edwards <edwardsm@vt.edu> wrote:

Hi Citizen name / Ex. 6

I too thank Miguel for his leadership on this.

I think the filtered water will generally be of very high quality. It is likely that your filtered is rated for lead removal….let me know.

Even if it is not rated for lead, it is probably a big improvement and does remove a lot of the lead, if it is present.

Bottled water is a good alternative, but as you say, there is no “perfectly” pure water source.

If it were me, I would continue to use the filtered water. Good luck with your pregnancy. Sounds like you are doing everything right.

Best Regards,

Marc

From: Citizen name / Ex. 6
Sent: Saturday, July 11, 2015 5:57 PM
To: deltoral.miguel@epa.gov; edwardsm@vt.edu
Subject: Flint Water Question from a Pregnant Flint Resident

Dear Dr. Edwards and Dr. Del Toral,

Thank you for the work you have already done in my city to protect families from water contaminant exposure. I am a Flint resident, pregnant with my first child, and therefore advised to drink a whopping 10-16 cups of water each day. I am writing to see if you can shed some light or point me to another source for answers regarding water testing and the safest option for staying hydrated.

If your wife or sister or friend were living in Flint and pregnant, what course of action would you recommend she take? Here is my situation:

- A little background: Prior to becoming pregnant, I installed a pur advanced water filter on our kitchen faucet and always use it when drinking from the tap, which I do frequently. (According to the pur website, the filter is said to filter out 70+ chemicals. Recently, I contacted the company to request more information on exactly what chemicals are filtered and up to what level, and am awaiting their reply.) When using the filter, the water is crystal clear, free of the river smell and without the slight yellow tinge that we sometimes have coming out of the tap (unlike in our bathroom sink which I use to brush my teeth...). I was compelled to purchase the filter because my legs began to swell after Flint changed to the river water, and after installing the filter this problem went away. I even tested the difference by drinking filtered water some days (consistently no swelling) and and unfiltered water others (consistent swelling) for a week or two. I understand the swelling to be the result of sodium chloride in our water which is corrosive enough to make GM stop using Flint water in their local plant (http://www.mlive.com/news/flint/index.ssf/2014/10/general_motors_wont_use_flint.html)
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- Are there any other considerations that you think I should keep in mind?

Even for those residents who are privileged to be educated and able to afford water filtration devices, the public water issues we are living with are confounding. The information we receive about our public water supply tends to be fragmented and coming from local public officials who have an interest in downplaying public concerns. In the meantime, it is very difficult to make truly informed decisions about our health.

Thank you in advance for any insights you can share and helping to give my baby a good start in life. I understand if you need to respond as a fellow resident of the world and as experts in general rather than as affiliates of the organizations in which you are employed.

Thank you much,

Citizen name / Ex. 6

Personal Address / Ex. 6

Personal Phone / Ex. 6

To: Deltoral, Miguel[deltoral.miguel@epa.gov]
Cc: Harris, Kimberly[harris.kimberly@epa.gov]; Crooks, Jennifer[crooks.jennifer@epa.gov]
From: Hyde, Tinka
Sent: Mon 7/13/2015 3:32:24 PM
Subject: RE: Flint Water Question from a Pregnant Flint Resident

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Do we have a recommended testing frequency?

The sample collection methodology is far more important than the testing frequency. For example, if frequent (monthly) pre-flushed first-draw samples were collected, you would miss the high lead every time you sample. You would catch lead particles from time to time becasuse they are released sporadically, but that is hit or miss in any given sample. If you collect a set of sequential samples only once, that would provide much better information because it tells you if there is high lead and where it is coming from, but a typical set of sequential samples would involved 12-15 samples at about $25 per sample ($300 - $375), and that's not something the average homeowner can afford. I didn't want to get into all of these details with the resident for obvious resasons. Regarding the bathroom tap...I don't recommend filters for the bathroom tap, so I should have also included a recommendation that if she tests the filtered water from the kitchen tap and it's fine, maybe another recommendation is that only water from the kitchen tap should be used for consumption (cooking/drinking).

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To: Hyde, Tinka[hyde.tinka@epa.gov]
Cc: Harris, Kimberly[harris.kimberly@epa.gov]; Crooks, Jennifer[crooks.jennifer@epa.gov]
From: Deltoral, Miguel
Sent: Mon 7/13/2015 3:43:02 PM
Subject: Re: Flint Water Question from a Pregnant Flint Resident

Will do. Kim will be in late today, so when I get her input I'll re-draft and send it to you.

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Marc, thank you for your quick reply and thoughtful feedback. I appreciate it very much. You are correct that the faucet filter is rated to remove 99% of lead contamination. What I am not certain about is whether that level of removal is variable based on the amount of lead coming to the faucet. I suppose that if a higher lead level would just result in the filter needing replacement sooner rather than passing more through the filter and into my drinking glass. Please correct me if this is a mistaken assumption.

Again, thank you, and Miguel I appreciate any recommendations you may have as well.

All the best,

Citizen name / Ex. 6

On Sat, Jul 11, 2015 at 8:31 PM, Marc Edwards <edwardsm@vt.edu> wrote:

Hi Citizen name / Ex. 6

I too thank Miguel for his leadership on this.

I think the filtered water will generally be of very high quality. It is likely that your filtered is rated for lead removal….let me know.

Even if it is not rated for lead, it is probably a big improvement and does remove a lot of the lead, if it is present.

Bottled water is a good alternative, but as you say, there is no "perfectly" pure water source.

If it were me, I would continue to use the filtered water. Good luck with your pregnancy. Sounds like you are doing everything right.

Best Regards,

Marc

From: Personal Email / Ex. 6
Sent: Saturday, July 11, 2015 5:57 PM

To: deltoral.miguel@epa.gov; edwardsm@vt.edu
Subject: Flint Water Question from a Pregnant Flint Resident

Dear Dr. Edwards and Dr. Del Toral,

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If your wife or sister or friend were living in Flint and pregnant, what course of action would you recommend she take? Here is my situation:

- A little background: Prior to becoming pregnant, I installed a pur advanced water filter on our kitchen faucet and always use it when drinking from the tap, which I do frequently. (According to the pur website, the filter is said to filter out 70+ chemicals. Recently, I contacted the company to request more information on exactly what chemicals are filtered and up to what level, and am awaiting their reply.) When using the filter, the water is crystal clear, free of the river smell and without the slight yellow tinge that we sometimes have coming out of the tap (unlike in our bathroom sink which I use to brush my teeth...). I was compelled to purchase the filter because my legs began to swell after Flint changed to the river water, and after installing the filter this problem went away. I even tested the difference by drinking filtered water some days (consistently no swelling) and and unfiltered water others (consistent swelling) for a week or two. I understand the swelling to be the result of sodium chloride in our water which is corrosive enough to make GM stop using Flint water in their local plant (http://www.mlive.com/news/flint/index.ssf/2014/10/general_motors_wont_use_flint.html)
- Given your findings of high levels of lead in some residents' water, my husband strongly believes that I should cease drinking all Flint water and drink bottled water instead. However, I have read extensively about safety concerns of plastic-bottled water (chemists who work with plastics avoid drinking it) and this does not seem to be a safer option despite frequent bottled water drives organized by well-meaning activists across Flint.
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- Are there any other considerations that you think I should keep in mind?

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Thank you in advance for any insights you can share and helping to give my baby a good start in life. I understand if you need to respond as a fellow resident of the world and as experts in general rather than as affiliates of the organizations in which you are employed.

Thank you much,

Citizen name / Ex. 6

To: Deltoral, Miguel[deltoral.miguel@epa.gov]
Cc: Harris, Kimberly[harris.kimberly@epa.gov]
From: Crooks, Jennifer
Sent: Mon 7/13/2015 3:53:18 PM
Subject: RE: Flint Water Question from a Pregnant Flint Resident

Miguel—Flint has offered, and will conduct free water testing for residents.

Flint Water Treatment Plant – (810) 787-6537

Flint Water Service Center – (810) 766-7202

From: Deltoral, Miguel
Sent: Monday, July 13, 2015 10:43 AM
To: Hyde, Tinka
Cc: Harris, Kimberly; Crooks, Jennifer
Subject: Re: Flint Water Question from a Pregnant Flint Resident

Will do. Kim will be in late today, so when I get her input I'll re-draft and send it to you.

Miguel A. Del Toral

Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

From: Hyde, Tinka
Sent: Monday, July 13, 2015 10:32 AM
To: Deltoral, Miguel
Cc: Harris, Kimberly; Crooks, Jennifer
Subject: RE: Flint Water Question from a Pregnant Flint Resident

Thanks Miguel this is helpful. So I think the response should include the following:

- Reference to the sampling protocol you would recommend – I assume that would include little or no pre-flushing. I recall that we have a protocol already established?

- A statement about if elevated levels either add a filter on bath tap or recommend only using filtered tap for consumption. Can also refer them to our web site for flushing protocols as appropriate.

Thanks

From: Deltoral, Miguel
Sent: Monday, July 13, 2015 10:24 AM
To: Hyde, Tinka
Cc: Harris, Kimberly; Crooks, Jennifer
Subject: Re: Flint Water Question from a Pregnant Flint Resident

Sounds good. I'll wait on Kim and combine everyone into one response. On your questions below...

Will the city test her unfiltered water? If so we can refer her to them.

Yes, the city will test her water, but they do resident-requested testing using pre-flushed 1st draw samples and I cannot in good conscience recommend that. It would miss any lead that is there if she has a lead service line and she would have a false sense of security and may end up being exposed to high lead levels.

Do we have a recommended testing frequency?

The sample collection methodology is far more important than the testing frequency. For example, if frequent (monthly) pre-flushed first-draw samples were collected, you would miss the high lead every time you sample. You would catch lead particles from time to time becasuse they are released sporadically, but that is hit or miss in any given sample. If you collect a set of sequential samples only once, that would provide much better information because it tells you if there is high lead and where it is coming from, but a typical set of sequential samples would involved 12-15 samples at about $25 per sample ($300 - $375), and that's not something the average homeowner can afford. I didn't want to get into all of these details with the resident for obvious resasons. Regarding the bathroom tap...I don't recommend filters for the bathroom tap, so I should have also included a recommendation that if she tests the filtered water from the kitchen tap and it's fine, maybe another recommendation is that only water from the kitchen tap should be used for consumption (cooking/drinking).

- **If there are high levels of lead how to they assess the source?**

The most straightforward way is to collect sequential samples, but as I mentioned that can be expensive, and if you find a lead line, my recommendation would be to use a water filter anyway. Since she is already doing that, I tried to provide advice based on her specific situation.

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From: Hyde, Tinka
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To: Deltoral, Miguel
Cc: Harris, Kimberly; Crooks, Jennifer
Subject: RE: Flint Water Question from a Pregnant Flint Resident

Miguel – Thanks for sharing your draft response. I recommend the following:

1. That we send one response that covers both the TTHMs and the Lead questions. Once you have Kim's response then please combine them into one message.

2. I think that she wants to test her water because she only has one filtered tap (the kitchen) and her bath tap is not filtered. She also had a couple other questions which I'm not sure we can answer. To make sure we provide a complete response, I have a couple of questions:

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If we are only responding to the question of how to get water tested, I recommend rewording the second paragraph as follows:

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http://www.michigan.gov/deq/0,4561,7-135-3307_4131_4156-36940--,00.html

Once you have answered my questions above and Kim has developed a response, please send me your updated response. Thanks.

From: Deltoral, Miguel
Sent: Monday, July 13, 2015 6:57 AM
To: Hyde, Tinka
Cc: Harris, Kimberly; Crooks, Jennifer
Subject: Fw: Flint Water Question from a Pregnant Flint Resident

Hi Tinka,

Tom, Rita, Nick and Tim are out, so I wanted to run this by you before responding...

We received an email from a resident in Flint which was also sent to Dr Edwards at Virginia Tech. Below is the email exchange between Dr. Edwards and the resident. I propose to respond to the resident with the draft email below, but wanted to run this by you before I send it. Please advise.

Kim - Please send the draft response on TTHMs to Tinka for review before sending and copy Jen, since she is acting today.

DRAFT RESPONSE

Hell Citizen name / Ex. 6

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Regarding your questions on the TTHMs, I am not a health effects expert, so I am forwarding your email to Kimberly Harris for response.

Regards,

Miguel Del Toral

Hi Kim,

See email exchange below. I think Marc's responses are fine on the lead, but we need to respond to the TTHM/showering questions, which I think you have responded in the past. Please forward your draft response to Tinka for review prior to responding.

Miguel A. Del Toral

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Phone: (312) 886-5253

From: Marc Edwards <edwardsm@vt.edu>
Sent: Sunday, July 12, 2015 09:22 AM
To Citizen name / Ex. 6
Cc: Deltoral, Miguel
Subject: RE: Flint Water Question from a Pregnant Flint Resident

I think it will ok. Just replace the filter in the device on the recommended schedule, and do not drink the water if it is discolored…the water should look clean.

Best Regards, Marc

From: Citizen name / Ex. 6
Sent: Sunday, July 12, 2015 12:24 AM
To: Marc Edwards
Cc: deltoral.miguel@epa.gov
Subject: Re: Flint Water Question from a Pregnant Flint Resident

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Again, thank you, and Miguel I appreciate any recommendations you may have as well.

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Bottled water is a good alternative, but as you say, there is no “perfectly” pure water source.

If it were me, I would continue to use the filtered water. Good luck with your pregnancy. Sounds like you are doing everything right.

Best Regards,

Marc

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Thank you much,

Citizen name / Ex. 6

To: Hyde, Tinka[hyde.tinka@epa.gov]; Deltoral, Miguel[deltoral.miguel@epa.gov]; Harris, Kimberly[harris.kimberly@epa.gov]
From: Crooks, Jennifer
Sent: Mon 7/13/2015 4:01:17 PM
Subject: FW: Flint Water Question from a Pregnant Flint Resident

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- Given your findings of high levels of lead in some residents' water, my husband strongly believes that I should cease drinking all Flint water and drink bottled water instead. However, I have read extensively about safety concerns of plastic-bottled water (chemists who work with plastics avoid drinking it) and this does not seem to be a safer option despite frequent bottled water drives organized by well-meaning activists across Flint.

- I would like to test our house's tap water with and without the kitchen filter using an independent lab, but my husband thinks this will be a futile effort because we have no reliable way of knowing if the results on one day will be consistent with results on other days, such as if the City of Flint were doing some special change to the water treatment procedure. Would testing multiple times across several weeks be sufficient to address this possibility? If so, how many times and at what interval would you recommend testing, and can you recommend a testing lab? If a high level of lead is discovered, who should we contact to determine where the lead is coming from as a next step?

- According to the consultant that Erin Brockovich sent to Flint earlier this year (http://www.mlive.com/news/flint/index.ssf/2015/02/tthm_how_worried_should_flint.html), total trihalomethanes (TTHM) in the water are dangerous to pregnant women through inhalation exposure during hot showers. (And pregnant women tend to appreciate long, hot showers because our backs are constantly aching!) At this point, the lead issues seem more frightening, though we are considering investing in a costly whole-house water filtration system to deal with both. How can we determine the relative risk to pregnant women for lead in the water vs. TTHMs? I suppose that could differ from house to house. What sort of whole-house filtration would you recommend?

- Are there any other considerations that you think I should keep in mind?

Even for those residents who are privileged to be educated and able to afford water filtration devices, the public water issues we are living with are confounding. The information we receive about our public water supply tends to be fragmented and coming from local public officials who have an interest in downplaying public concerns. In the meantime, it is very difficult to make truly informed decisions about our health.

Thank you in advance for any insights you can share and helping to give my baby a good start in life. I understand if you need to respond as a fellow resident of the world and as experts in general rather than as affiliates of the organizations in which you are employed.

Thank you much,

Citizen name / Ex. 6

To: Crooks, Jennifer[crooks.jennifer@epa.gov]
Cc: Harris, Kimberly[harris.kimberly@epa.gov]
From: Deltoral, Miguel
Sent: Mon 7/13/2015 4:15:36 PM
Subject: Re: Flint Water Question from a Pregnant Flint Resident

Yes, but they are pre-flushed 1st-draw samples. As I mentioned to Tinka, I cannot recommend that.

Miguel A. Del Toral
Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

From: Crooks, Jennifer
Sent: Monday, July 13, 2015 10:53 AM
To: Deltoral, Miguel
Cc: Harris, Kimberly
Subject: RE: Flint Water Question from a Pregnant Flint Resident

Miguel—Flint has offered, and will conduct free water testing for residents.

Flint Water Treatment Plant – (810) 787-6537

Flint Water Service Center – (810) 766-7202

From: Deltoral, Miguel
Sent: Monday, July 13, 2015 10:43 AM
To: Hyde, Tinka
Cc: Harris, Kimberly; Crooks, Jennifer
Subject: Re: Flint Water Question from a Pregnant Flint Resident

Will do. Kim will be in late today, so when I get her input I'll re-draft and send it to you.

Miguel A. Del Toral

Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

From: Hyde, Tinka
Sent: Monday, July 13, 2015 10:32 AM
To: Deltoral, Miguel
Cc: Harris, Kimberly; Crooks, Jennifer
Subject: RE: Flint Water Question from a Pregnant Flint Resident

Thanks Miguel this is helpful. So I think the response should include the following:

- Reference to the sampling protocol you would recommend – I assume that would include little or no pre-flushing. I recall that we have a protocol already established?
- A statement about if elevated levels either add a filter on bath tap or recommend only using filtered tap for consumption. Can also refer them to our web site for flushing protocols as appropriate.

Thanks

From: Deltoral, Miguel
Sent: Monday, July 13, 2015 10:24 AM
To: Hyde, Tinka
Cc: Harris, Kimberly; Crooks, Jennifer
Subject: Re: Flint Water Question from a Pregnant Flint Resident

Sounds good. I'll wait on Kim and combine everyone into one response. On your questions below...

Will the city test her unfiltered water? If so we can refer her to them.

Yes, the city will test her water, but they do resident-requested testing using pre-flushed 1st draw samples and I cannot in good conscience recommend that. It would miss any lead that is there if she has a lead service line and she would have a false sense of security and may end up being exposed to high lead levels.

Do we have a recommended testing frequency?

The sample collection methodology is far more important than the testing frequency. For example, if frequent (monthly) pre-flushed first-draw samples were collected, you would miss the high lead every time you sample. You would catch lead particles from time to time becasuse they are released sporadically, but that is hit or miss in any given sample. If you collect a set of sequential samples only once, that would provide much better information because it tells you if there is high lead and where it is coming from, but a typical set of sequential samples would involved 12-15 samples at about $25 per sample ($300 - $375), and that's not something the average homeowner can afford. I didn't want to get into all of these details with the resident for obvious resasons. Regarding the bathroom tap...I don't recommend filters for the bathroom tap, so I should have also included a recommendation that if she tests the filtered water from the kitchen tap and it's fine, maybe another recommendation is that only water from the kitchen tap should be used for consumption (cooking/drinking).

- **If there are high levels of lead how to they assess the source?**

The most straightforward way is to collect sequential samples, but as I mentioned that can be expensive, and if you find a lead line, my recommendation would be to use a water filter anyway. Since she is already doing that, I tried to provide advice based on her specific situation.

Miguel A. Del Toral

Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

From: Hyde, Tinka
Sent: Monday, July 13, 2015 09:48 AM
To: Deltoral, Miguel
Cc: Harris, Kimberly; Crooks, Jennifer
Subject: RE: Flint Water Question from a Pregnant Flint Resident

Miguel – Thanks for sharing your draft response. I recommend the following:

1. That we send one response that covers both the TTHMs and the Lead questions. Once you have Kim's response then please combine them into one message.

2. I think that she wants to test her water because she only has one filtered tap (the kitchen) and her bath tap is not filtered. She also had a couple other questions which I'm not sure we can answer. To make sure we provide a complete response, I have a couple of questions:

- Will the city test her unfiltered water? If so we can refer her to them.
- Do we have a recommended testing frequency?
- If there are high levels of lead how to they assess the source?

If we are only responding to the question of how to get water tested, I recommend rewording the second paragraph as follows:

~~Regarding the sampling, it can get fairly expensive to collect water samples to characterize lead levels in the untreated and treated water and I don't think that is necessary. If you change the filter in accordance with the manufacturer's instructions, you should be fine. If your concern is regarding the capacity of the filter to remove the lead, you could collect a sample of the filtered water which I think would be more informative and less expensive than trying to characterize the untreated and treated water.~~ If you decide to test your filtered and unfiltered water, you should use a laboratory that has been certified by the State for drinking water analyses (link below).

http://www.michigan.gov/deq/0,4561,7-135-3307_4131_4156-36940--,00.html

Once you have answered my questions above and Kim has developed a response, please send me your updated response. Thanks.

From: Deltoral, Miguel
Sent: Monday, July 13, 2015 6:57 AM
To: Hyde, Tinka
Cc: Harris, Kimberly; Crooks, Jennifer
Subject: Fw: Flint Water Question from a Pregnant Flint Resident

Hi Tinka,

Tom, Rita, Nick and Tim are out, so I wanted to run this by you before responding...

We received an email from a resident in Flint which was also sent to Dr Edwards at Virginia Tech. Below is the email exchange between Dr. Edwards and the resident. I propose to respond to the resident with the draft email below, but wanted to run this by you before I send it. Please advise.

Kim - Please send the draft response on TTHMs to Tinka for review before sending and copy Jen, since she is acting today.

DRAFT RESPONSE

Hello **Citizen name / Ex. 6**

I agree with Marc's responses on the water filter . Filters that are certified to remove lead are typically designed to remove 99 percent of lead. They are also

designed with additional capacity as a safety measure, but you should still change the filter in accordance with the manufacturer's instructions.

Regarding the sampling, it can get fairly expensive to collect water samples to characterize lead levels in the untreated and treated water and I don't think that is necessary. If you change the filter in accordance with the manufacturer's instructions, you should be fine. If your concern is regarding the capacity of the filter to remove the lead, you could collect a sample of the filtered water which I think would be more informative and less expensive than trying to characterize the untreated and treated water. If you decide to test the water, you should use a laboratory that has been certified by the State for drinking water analyses (link below).

http://www.michigan.gov/deq/0,4561,7-135-3307_4131_4156-36940--,00.html

Regarding your questions on the TTHMs, I am not a health effects expert, so I am forwarding your email to Kimberly Harris for response.

Regards,

Miguel Del Toral

Hi Kim,

See email exchange below. I think Marc's responses are fine on the lead, but we need to respond to the TTHM/showering questions, which I think you have responded in the past. Please forward your draft response to Tinka for review prior to responding.

Miguel A. Del Toral

Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

From: Marc Edwards <edwardsm@vt.edu>
Sent: Sunday, July 12, 2015 09:22 AM
To: 'Mona Munroe-Younis'
Cc: Deltoral, Miguel
Subject: RE: Flint Water Question from a Pregnant Flint Resident

I think it will ok. Just replace the filter in the device on the recommended schedule, and do not drink the water if it is discolored…the water should look clean.

Best Regards, Marc

From: **Citizen name / Ex. 6**
Sent: Sunday, July 12, 2015 12:24 AM
To: Marc Edwards
Cc: deltoral.miguel@epa.gov
Subject: Re: Flint Water Question from a Pregnant Flint Resident

Marc, thank you for your quick reply and thoughtful feedback. I appreciate it very much. You are correct that the faucet filter is rated to remove 99% of lead contamination. What I am not certain about is whether that level of removal is variable based on the amount of lead coming to the faucet. I suppose that if a higher lead level would just result in the filter needing replacement sooner rather than passing more through the filter and into my drinking glass. Please correct me if this is a mistaken assumption.

Again, thank you, and Miguel I appreciate any recommendations you may have as well.

All the best,

Citizen name / Ex. 6

On Sat, Jul 11, 2015 at 8:31 PM, Marc Edwards <edwardsm@vt.edu> wrote:

Hi Citizen name / Ex. 6

I too thank Miguel for his leadership on this.

I think the filtered water will generally be of very high quality. It is likely that your filtered is rated for lead removal….let me know.

Even if it is not rated for lead, it is probably a big improvement and does remove a lot of the lead, if it is present.

Bottled water is a good alternative, but as you say, there is no "perfectly" pure water source.

If it were me, I would continue to use the filtered water. Good luck with your pregnancy. Sounds like you are doing everything right.

Best Regards,

Marc

From: Citizen name / Ex. 6
Sent: Saturday, July 11, 2015 5:57 PM
To: deltoral.miguel@epa.gov; edwardsm@vt.edu
Subject: Flint Water Question from a Pregnant Flint Resident

Dear Dr. Edwards and Dr. Del Toral,

Thank you for the work you have already done in my city to protect families from water contaminant exposure. I am a Flint resident, pregnant with my first child, and therefore advised to drink a whopping 10-16 cups of water each day. I am writing to see if you can shed some light or point me to another source for answers regarding water testing and the safest option for staying hydrated.

If your wife or sister or friend were living in Flint and pregnant, what course of action would you recommend she take? Here is my situation:

- A little background: Prior to becoming pregnant, I installed a pur advanced water filter on our kitchen faucet and always use it when drinking from the tap, which I do frequently. (According to the pur website, the filter is said to filter out 70+ chemicals. Recently, I contacted the company to request more information on exactly what chemicals are filtered and up to what level, and am awaiting their reply.) When using the filter, the water is crystal clear, free of the river smell and without the slight yellow tinge that we sometimes have coming out of the tap (unlike in our bathroom sink which I use to brush my teeth...). I was compelled to purchase the filter because my legs began to swell after Flint changed to the river water, and after installing the filter this problem went away. I even tested the difference by drinking filtered water some days (consistently no swelling) and and unfiltered water others (consistent swelling) for a week or two. I understand the swelling to be the result of sodium chloride in our water which is corrosive enough to make GM stop using Flint water in their local plant (http://www.mlive.com/news/flint/index.ssf/2014/10/general_motors_wont_use_flint.html)
- Given your findings of high levels of lead in some residents' water, my husband strongly believes that I should cease drinking all Flint water and drink bottled water instead. However, I have read extensively about safety concerns of plastic-bottled water (chemists who work with plastics avoid drinking it) and this does not seem to be a safer option despite frequent bottled water drives organized by well-meaning activists across Flint.
- I would like to test our house's tap water with and without the kitchen filter using an independent lab, but my husband thinks this will be a futile effort because we have no reliable way of knowing if the results on one day will be consistent with results on other days, such as if the City of Flint were doing some special change to the water treatment procedure. Would testing multiple times across several weeks be sufficient to address this possibility? If so, how many times and at what interval would you recommend testing, and can you recommend a testing lab? If a high level of lead is discovered, who should we contact to determine where the lead is coming from as a next step?

- According to the consultant that Erin Brockovich sent to Flint earlier this year (http://www.mlive.com/news/flint/index.ssf/2015/02/tthm_how_worried_should_flint.html), total trihalomethanes (TTHM) in the water are dangerous to pregnant women through inhalation exposure during hot showers. (And pregnant women tend to appreciate long, hot showers because our backs are constantly aching!) At this point, the lead issues seem more frightening, though we are considering investing in a costly whole-house water filtration system to deal with both. How can we determine the relative risk to pregnant women for lead in the water vs. TTHMs? I suppose that could differ from house to house. What sort of whole-house filtration would you recommend?

- Are there any other considerations that you think I should keep in mind?

Even for those residents who are privileged to be educated and able to afford water filtration devices, the public water issues we are living with are confounding. The information we receive about our public water supply tends to be fragmented and coming from local public officials who have an interest in downplaying public concerns. In the meantime, it is very difficult to make truly informed decisions about our health.

Thank you in advance for any insights you can share and helping to give my baby a good start in life. I understand if you need to respond as a fellow resident of the world and as experts in general rather than as affiliates of the organizations in which you are employed.

Thank you much,

Citizen name / Ex. 6

Personal Address / Ex. 6

Personal Phone / Ex. 6

To: Crooks, Jennifer[crooks.jennifer@epa.gov]
From: Bair, Rita
Sent: Mon 7/13/2015 5:22:18 PM
Subject: FW: ACLU story on Flint drinking water: Corrosive Impact: Leaded Water and One Flint Family's Toxic Nightmare
MDT comments on ACLU article version 2 07-10-2015.docx

This is where things were left on Friday. I should be in the office tomorrow.

From: Henry, Timothy
Sent: Friday, July 10, 2015 3:23 PM
To: Hyde, Tinka
Cc: Bair, Rita; Damato, Nicholas; Deltoral, Miguel
Subject: FW: ACLU story on Flint drinking water: Corrosive Impact: Leaded Water and One Flint Family's Toxic Nightmare

Tinka –

In response to Susan's request, attached is a document in two parts. The first part is a summary list of inaccurate statements in the article, each followed by an explanation or correction to the statement. The second is the article itself, annotated with Miguel's comments. I am sending to you so you have the chance to review it before it goes to Susan.

Miguel said to give him a call on Monday morning if you have any questions regarding the content and he can provide explanation, additional information, etc.

Tim Henry
Deputy Director, Water Division
U.S. EPA (W-15J)
77 W. Jackson Blvd., Chicago, IL 60604-3590
Phone: 312.886.6107 Fax: 312.692.2578

From: Hedman, Susan
Sent: Thursday, July 09, 2015 5:26 PM
To: Kelley, Jeff
Cc: Hyde, Tinka; Henry, Timothy; Rowan, Anne; Kaplan, Robert

Subject: Re: ACLU story on Flint drinking water: Corrosive Impact: Leaded Water and One Flint Family's Toxic Nightmare

Thanks. Please ask WD to prepare a concise list of the inaccuracies -- and then we can determine whether to request a correction.

Sent from my iPhone

On Jul 9, 2015, at 3:28 PM, Kelley, Jeff <kelley.jeff@epa.gov> wrote:

> This just in … I haven't had a chance to read it yet, but I assume you'll be hearing from the mayor again shortly. Migel del Toral, the Water Division staffer quoted at length in the article, describes it as full of mischaracterizations and inaccuracies.
>
> **Corrosive Impact: Leaded Water and One Flint Family's Toxic Nightmare**
>
> Jul 09 Posted by Curt Guyette in Democracy Watch
>
> It took a while for LeeAnne Walters to realize the full impact of the number: 13,200.
>
> Walters—a stay-at home mom with four sons and a husband in the Navy—had seen other numbers reflecting the quality of drinking water at her Flint home that were devastating. But 13,200? She'd never seen anything like this.
>
> The city had tested her water twice in this past March and both times found dangerously high levels of lead—104 parts per billion (ppb) and 397 ppb, respectively.
>
> Those numbers filled her with dread, because they meant her family had been exposed to high levels of a terribly toxic heavy metal that put her children's future in

jeopardy.

But it was the result of a third test of the tap water in her home, performed by independent experts at Virginia Tech university, that most stunned Walters.

“It took a while for me to wrap my head around it,” said Walters.

The VT researchers discovered lead levels in Walters’ water reached a jaw-dropping 13,200 ppb—more than twice the amount at which the U.S. Environmental Protection Agency classifies water as hazardous waste.

“When I saw those numbers I was shocked,” said Virginia Tech professor Marc Edwards, a former MacArthur Fellow and respected authority on corrosion in drinking-water systems, who oversaw the tests.

Edwards played a key role in discovering the problem of corroded water pipes and lead in Washington, D.C. drinking water during the early 2000s, in what has been described as one of the worst contamination events ever seen in an urban water system, with resulting increased incidence of childhood lead poisoning, miscarriages and fetal death.

In terms of lead levels, the Walters family’s numbers eclipsed even the worst D.C. homes.

“I have never in my 25-year career seen such outrageously high levels going into another home in the United States,” said Edwards. “This was literally hazardous-waste levels.”

But the condition of Walters’ tap water raises a much more far-reaching question: Since the city moved away from Detroit’s water system and began pumping water from the Flint River, how many other families have been put at risk by the city's questionable testing procedures and handling of the water supply?

The Walters family surely isn't alone in dealing with the threat of lead-laced drinking water. About half of Flint's 40,000 homes are a half-century old or older, built at a time when water service lines were typically made of lead.

And according to various experts, including an EPA water-quality specialist, the city's actions are only exacerbating the threat.

"What the public needs is accurate information," explained Miguel Del Toral, regulations manager for the Ground Water and Drinking Water Branch of the EPA's Region 5.

Instead, the city is utilizing testing measures that almost ensure that worst-case scenarios such as the one facing the Walters family escape detection, asserted Del Toral in an internal EPA memo provided to the ACLU of Michigan.

Compounding the threat is what Del Toral describes as the continued inability of officials to adequately treat water coming into people's homes from the Flint River.

"I don't want to scare people unnecessarily," said Del Toral in a phone interview from his home in Chicago. "But there is absolutely a problem in Flint that needs to be addressed right away."

During his interview with the ACLU of Michigan, Del Toral said he was willing to go on the record with his concerns, but that he was doing so as a private citizen, not as a representative of the EPA.

EPA rules, he said, required that such interviews be routed through the agency's public affairs people. But he's willing to speak out nonetheless, he said, because of the potential harm to the public is so great, and the need to address it is so urgent.

WATERING DOWN THE TESTS

Perhaps the most vexing problem in all of this is the contamination caused by the city's decades-old network of lead and iron pipes—a problem directly connected to the switch to river water, and the city's failure to adequately treat it.

Under the U.S. Environmental Protection Agency's rules, if lead reaches a level of 15 parts per billion in water, the source of the problem must be identified and corrected.

In early March, after months of requests (and only after Walters had received a doctor's note raising concerns about problems with the water), the city finally conducted a test. It found lead levels of 104 ppb the first time. A second test recorded a level of 397 ppb.

Blood tests, taken after those water-sample numbers were reported, revealed that one of her children, a four year old, had lead poisoning.

The news was devastating, said Walters, and the concern it creates for her child's future is haunting.

"Lead can affect almost every organ and system in your body," according to the EPA's web site. "Children six years old and younger are most susceptible … Even low levels of lead in the blood of children can result in: behavior and learning problems; lower IQ and hyperactivity; slowed growth; and hearing problems."

Those dangers made Walters all the more determined to get her questions answered.

For one thing, she wanted to know why residents were being instructed to “pre-flush” water lines before drawing samples that would be tested by the city

After much searching, she found Del Toral at the EPA’s Region 5 in Chicago. He explained to her that her instincts were right, and that she had good cause to be concerned about the way testing was being done.

“The practice of pre-flushing before collecting compliance samples has been shown to result in the minimization of lead capture and significant underestimation of lead levels in drinking water,” wrote Del Toral in an internal memo dated June 24.

Del Toral went on to say that the city’s testing methods were a “serious concern” because they “could provide a false sense of security to the residents of Flint regarding lead levels in the water.” As a result, he warned, residents could fail to take the necessary precautions to protect their families from lead in the drinking water.

Virginia Tech’s Edwards completely agrees with Del Toral’s assessment.

“The net effect of a ‘pre-flush’ is to greatly reduce the likelihood of detecting lead in samples collected … that would normally be present in the consumers drinking water,” Edwards wrote in an email. “I have long maintained that the practice should be banned, as it artificially lowers the amount of lead detected in samples versus typical consumer exposure.”

Asked about these concerns, city spokesman Jason Lorenz offered the following email reply: “While I cannot directly respond to Mr. Del Toral's remarks without first contacting the EPA Region 5 office, I can say that the City of Flint follows all the testing procedures and schedules as required by the U.S. EPA.”

He added that the Michigan Department of Environmental Quality (MDEQ) endorses the city's sampling method. The MDEQ did not respond to phone calls and e-mails seeking its comments on the controversy.

Del Toral contended in an interview that what Flint's doing is actually exploiting a "loophole" in the law.

"From a technical standpoint, there's no justification for the way Flint is conducting its tests," Del Toral said. "Any credible scientist will tell you [the city's] method is not the way to catch worst-case conditions."

There is no legitimate reason for the city's methodology, said Del Toral.

EPA rules, he said, required that such interviews be routed through the agency's public affairs people. But he was willing to speak out nonetheless, he said, because of the potential harm to the public.

FLUSHING OUT REAL ANSWERS

It was Del Toral who, after determining that the lead problem plaguing the Walters family was coming from outside their home, connected LeeAnne with Edwards at Virginia Tech.

Instead of taking a single sample after a line had been "pre-flushed" under the city's direction, Edwards instructed Walters to collect a series of samples from water that had been allowed to sit in the service line long enough to accurately reflect levels the family could be exposed to under normal use.

(Meanwhile, that same service line, dug up and replaced after the sample collection, was found to be made of lead in one section and iron in another.)

Edwards tested the water and discovered that the lead contamination ranged from 200 ppb to the 13,200 ppb figure that stunned LeeAnne Walters—and should likewise shock many others.

Given the age of much of Flint's infrastructure, Edwards agrees with Del Toral's assessment that the test results they found at the Walters home amount to an alarm going off, and others in the city need to pay attention.

"I do not see any reason why there would not be serious problems occurring in at least some other Flint homes," said Edwards.

In 1986, the U.S. Safe Drinking Water Act was amended to prohibit the use of lead pipes in public water systems. Every house built before that is potentially at risk, said Edwards. About half of Flint's roughly 40,000 homes are at least 50 years old.

Making things worse is the fact that the high levels of chlorine being used to treat Flint's dirty river water lead to the creation of a carcinogenic byproduct know as total trihalomethanes, or TTHM. To keep TTHM levels down, the city is adding ferric chloride. The trouble is, that additive can also accelerate the corrosion of lead and iron pipes.

Adding yet another layer to the problem is something the city is not doing.

According to Del Toral, Flint should be adding corrosion-control chemicals designed to help keep lead and copper in pipes from leaching into drinking water. Doing so is required by federal regulations, wrote Del Toral in his memo.

"To our knowledge, that is inaccurate," said Flint spokesman Lorenz. "Before the plant was placed in operation, the City (and our engineering firm) had numerous discussions with DEQ personnel and inquired if corrosion-control chemicals –

typically phosphates --needed to be included in the treatment process. The use of these chemicals was not required or mandated."

What's indisputable is this:

Flint's water contained corrosion-control chemicals until April 2014, when Flint's ties to the Detroit water system were severed. Flint officials hailed that changeover as a cost-cutting move for a city facing a financial crisis so severe it had been placed under the control of a state-appointed emergency manager.

Discontinuing the use of the anti-corrosion chemicals allowed toxic scale built up on the insides of pipes over the past decades to be released into water flowing into people's homes, explained Del Toral.

In his memo, Del Toral warned: "The lack of mitigating treatment is especially concerning as the high lead levels [that result] will likely not be reflected in the City of Flint's compliance samples due to sampling procedures used…"

In other words, at the same time the city is exacerbating the problem, it's conducting tests that will probably fail to identify the true extent of the threat.

Del Toral described the situation as a "major concern."

"In the absence of any corrosion control treatment, lead levels in drinking water can be expected to increase," he warned in his memo.

The EPA offered Flint officials the use of agency experts to help get the situation under control, said Del Toral, but added that, to his knowledge, the city has so far declined all help.

LeeAnne Walters said that when she asked why city officials weren't taking the EPA's offer of assistance, she was told, "We don't need it."

Flint spokesman Lorenz, on the other hand, maintained that "the city continues to work closely with the MDEQ and the EPA Regional Office."

As for Walters's family, that the city has finally replaced the service line leading to their home, and lead levels have dropped below the 15 ppb EPA action level.

The problem now, she said, is that water currently coming out of her tap tinged yellow and smells of rotten eggs. City officials have given her no explanation as to the possible cause of that.

It is just one more in a long list of questions that need to be addressed.

"What we need," said Walters, "are more answers."

But it's not just answers the people of Flint require.

They also need solutions. And, as Del Toral's EPA memo emphasizes, they need them immediately.

Click the link to read the full EPA Memo:
http://www.aclumich.org/sites/default/files/file/EPAWaterReport062415.pdf

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Jeff Kelley
Director, Office of External Communications
U.S. EPA Region 5
ph: 312-353-1159

Summary of Inaccurate statements and mischaracterizations

It took a while for LeeAnne Walters to realize the full impact of the number: 13,200. Walters—a stay-at home mom with four sons and a husband in the Navy—had seen other numbers reflecting the quality of drinking water at her Flint home that were devastating. But 13,200? She'd never seen anything like this.

The ACLU should revise the article to include more specifics on the high results so as not to unduly alarm the residents of Flint. The very high lead levels discovered in the samples were from the Walters' residence after the water had been stagnant in the service line for almost a month (April 3, 2015 to April 27, 2015). The Walters' service line configuration and long length is also likely not what would be found in most typical homes in Flint. Using the information in an unexplained or unqualified manner can lead to residents inferring that their situations could be the same.

The Walters family surely isn't alone in dealing with the threat of lead-laced drinking water. About half of Flint's 40,000 homes are a half-century old or older, built at a time when water service lines were typically made of lead.

Although there certainly are lead lines in Flint, EPA does not have information to indicate when lead service lines were used or not used in Flint. Unless the period of time that lead lines were used is known to the ACLU, it should not be assumed that lead lines were used during this time. Many cities stopped using lead lines in the 1920s, 1930s, 1940s, etc.

Del Toral contended in an interview that what Flint's doing is actually exploiting a "loophole" in the law.

"From a technical standpoint, there's no justification for the way Flint is conducting its tests," Del Toral said. "Any credible scientist will tell you [the city's] method is not the way to catch worst-case conditions."

There is no legitimate reason for the city's methodology, said Del Toral.

The Lead and Copper Rule is silent on the issue of pre-flushing before collecting compliance samples. It does not include pre-flushing instructions or prohibit it. EPA is concerned with the potential impact of pre-flushing, particularly in the absence of treatment for lead, and we are in discussions with the MDEQ on this issue.

EPA rules, he said, required that such interviews be routed through the agency's public affairs people. But he was willing to speak out nonetheless, he said, because of the potential harm to the public.

Miguel simply agreed to answer questions on the report in his personal capacity.

Instead of taking a single sample after a line had been "pre-flushed" under the city's direction, Edwards instructed Walters to collect a series of samples from water that had been allowed to sit in the service line long enough to accurately reflect levels the family could be exposed to under normal use.

This characterization is not accurate/misleading. Prior to the collection of the samples, the water was not used in the home from April 3, 2015 to April 27, 2015. This is not how water is used in a typical home. The ACLU should explain how the conditions under which the samples were collected and the atypical (very long) service line at the Walters' residence, to

put these results in the proper context.

Given the age of much of Flint's infrastructure, Edwards agrees with Del Toral's assessment that the test results they found at the Walters home amount to an alarm going off, and others in the city need to pay attention.
This is a mischaracterization of what I said. I did not say this about the VT sampling. I said this about the samples collected by the City of Flint from the Walters' home (104 ppb & 397 ppb). It was with respect to the lack of any mitigating treatment, and my professional opinion regarding the disintegration of the existing scales formed during the time phosphate treated water was provided by Detroit, which would be occurring city-wide.

According to Del Toral, Flint should be adding corrosion-control chemicals designed to help keep lead and copper in pipes from leaching into drinking water. Doing so is required by federal regulations, wrote Del Toral in his memo.
This is not an accurate statement. What I said was that large systems were required to install and maintain optimal corrosion control, unless the system meets the treatment exemption criteria in the Lead and Copper Rule.

The EPA offered Flint officials the use of agency experts to help get the situation under control, said Del Toral, but added that, to his knowledge, the city has so far declined all help.
This is not accurate. EPA has discussed the offer of technical assistance to the City of Flint with MDEQ. The RA subsequently sent the resumes of two EPA experts to the Mayor.

---**[End of summary]**--

Introductory comment: I quit work early one day and Ms. Walters called that day after I had quit work and asked if I would speak to the ACLU. I told Ms. Walters that I had no authority to speak to the ACLU on behalf of EPA and that he should contact our public affairs office if he wanted comments from EPA. Ms. Walters indicated that he just wanted to better understand some of the issues and I reiterated that although I was willing to speak to him in my personal capacity, I wanted it to be very clear that I am not speaking on behalf of EPA and that any questions I answer are not to portrayed as EPA comments or responses. I also reiterated the same to the ACLU when Mr. Guyette called later that day. The language in the article seems to convey that I was the one that initiated the contact with the ACLU out of concern with the situation in Flint. I did not contact the ACLU, offer to contact the ACLU or have any intent to do so in my EPA or personal capacity regarding Flint or any other drinking water issue. I do contact the ACLU for other non-work issues and discussed those with Attorney Client / Ex. 5

Attorney Client / Ex. 5

bankers and tax lawyers sifting through tax law to avoid tax liabilities, I want to comply with the letter and the spirit of the ethics regulations and I am willing to work with EPA to clarify the training regarding outside activities so that others don't have to go through this. I will be

Attorney Client / Ex. 5

The central issue I focused on in my discussion with the ACLU was the need for Flint to evaluate treatment on a system-wide basis, and the EPA offer to provide technical assistance so that they are not fixing one problem (E.coli and Coliform MCL violations) only to cause another problem (TTHM MCL violations).

It took a while for LeeAnne Walters to realize the full impact of the number: 13,200.

MDT comment: I tried to make it clear that using these results could unduly alarm the public. I stressed is that we do not want to unduly alarm the residents in Flint, and I said this more than once regarding the very high lead at the Citizen name / Ex. 6 *home. I said we had never seen lead levels this high in drinking water and we had no information that would tell us if the Walters' home was unique or whether there were any other homes with similar configurations. I also said that these results were from sampling conducted after the water in that service line had not been used for almost a month, so it is very likely not representative of what we would expect to find in most homes in Flint unless* Citizen name / Ex. 6 *service line configuration is more common than we think, which is doubtful. Mr. Guyette chose to use the highest result from that sampling set and without proper qualification.*

Walters—a stay-at home mom with four sons and a husband in the Navy—had seen other numbers reflecting the quality of drinking water at her Flint home that were devastating. But 13,200? She'd never seen anything like this.

The city had tested her water twice in this past March and both times found dangerously high levels of lead—104 parts per billion (ppb) and 397 ppb, respectively.

Those numbers filled her with dread, because they meant her family had been exposed to high levels of a terribly toxic heavy metal that put her children's future in jeopardy.

But it was the result of a third test of the tap water in her home, performed by independent experts at Virginia Tech university, that most stunned Walters.

"It took a while for me to wrap my head around it," said Walters.

The VT researchers discovered lead levels in Walters' water reached a jaw-dropping 13,200 ppb—more than twice the amount at which the U.S. Environmental Protection Agency classifies water as hazardous waste.

"When I saw those numbers I was shocked," said Virginia Tech professor Marc Edwards, a former MacArthur Fellow and respected authority on corrosion in drinking-water systems, who oversaw the tests.

Edwards played a key role in discovering the problem of corroded water pipes and lead in Washington, D.C. drinking water during the early 2000s, in what has been described as one of the *worst* contamination events ever seen in an urban water system, with resulting increased incidence of childhood lead poisoning, miscarriages and fetal death.

In terms of lead levels, the Walters family's numbers eclipsed even the worst D.C. homes.

"I have never in my 25-year career seen such outrageously high levels going into another home in the United States," said Edwards. "This was literally hazardous-waste levels."

But the condition of Walters' tap water raises a much more far-reaching question: Since the city moved away from Detroit's water system and began pumping water from the Flint River, how many other families have been put at risk by the city's questionable testing procedures and handling of the water supply?

The Walters family surely isn't alone in dealing with the threat of lead-laced drinking water. About half of Flint's 40,000 homes are a half-century old or older, built at a time when water service lines were typically made of lead.

MDT: This did not come from me. Flint definitely used lead lines, but I have no idea whatsoever when they stopped using lead lines in Flint.

And according to various experts, including an EPA water-quality specialist, the city's actions are only exacerbating the threat.

"What the public needs is accurate information," explained Miguel Del Toral, regulations manager for the Ground Water and Drinking Water Branch of the EPA's Region 5.

MDT: This was part of my trying to stress that we should not unduly alarm people.

Instead, the city is utilizing testing measures that almost ensure that worst-case scenarios such as the one facing the Walters family escape detection, asserted Del Toral in an internal EPA memo provided to the ACLU of Michigan.

Compounding the threat is what Del Toral describes as the continued inability of officials to adequately treat water coming into people's homes from the Flint River.

MDT: The main focus of what I told the ACLU was that Flint has gone from essentially a finishing operation at the treatment plant to a raw water treatment plant and is dealing with a number of drinking water issues and could benefit from expert assistance in simultaneously complying across all drinking water regulations.

"I don't want to scare people unnecessarily," said Del Toral in a phone interview from his home in Chicago. "But there is absolutely a problem in Flint that needs to be addressed right away."

MDT: My comment was specifically on lead. In the absence of treatment we expect that lead levels will increase due to the presence of lead service lines. The concerns that the Region has and the actions to be taken are scheduled for discussion with MDEQ later in July.

During his interview with the ACLU of Michigan, Del Toral said he was willing to go on the record with his concerns, but that he was doing so as a private citizen, not as a representative of the EPA.

EPA rules, he said, required that such interviews be routed through the agency's public affairs people. But he's willing to speak out nonetheless, he said, because of the potential harm to the public is so great, and the need to address it is so urgent.

MDT: What I said was that I was not authorized to speak on behalf of EPA and that if he wanted EPA's comments he should contact public affairs.

WATERING DOWN THE TESTS

Perhaps the most vexing problem in all of this is the contamination caused by the city's decades-old network of lead and iron pipes—a problem directly connected to the switch to river water, and the city's failure to adequately treat it.

Under the U.S. Environmental Protection Agency's rules, if lead reaches a level of 15 parts per billion in water, the source of the problem must be identified and corrected.

In early March, after months of requests (and only after Walters had received a doctor's note raising concerns about problems with the water), the city finally conducted a test. It found lead levels of 104 ppb the first time. A second test recorded a level of 397 ppb.

Blood tests, taken after those water-sample numbers were reported, revealed that one of her children, a four year old, had lead poisoning.

The news was devastating, said Walters, and the concern it creates for her child's future is haunting.

"Lead can affect almost every organ and system in your body," according to the EPA's web site. "Children six years old and younger are most susceptible … Even low levels of lead in the blood of children can result in: behavior and learning problems; lower IQ and hyperactivity; slowed growth; and hearing problems."

Those dangers made Walters all the more determined to get her questions answered.

For one thing, she wanted to know why residents were being instructed to "pre-flush" water lines before drawing samples that would be tested by the city

After much searching, she found Del Toral at the EPA's Region 5 in Chicago. He explained to her that her instincts were right, and that she had good cause to be concerned about the way testing was being done.

"The practice of pre-flushing before collecting compliance samples has been shown to result in the minimization of lead capture and significant underestimation of lead levels in drinking water," wrote Del Toral in an internal memo dated June 24.

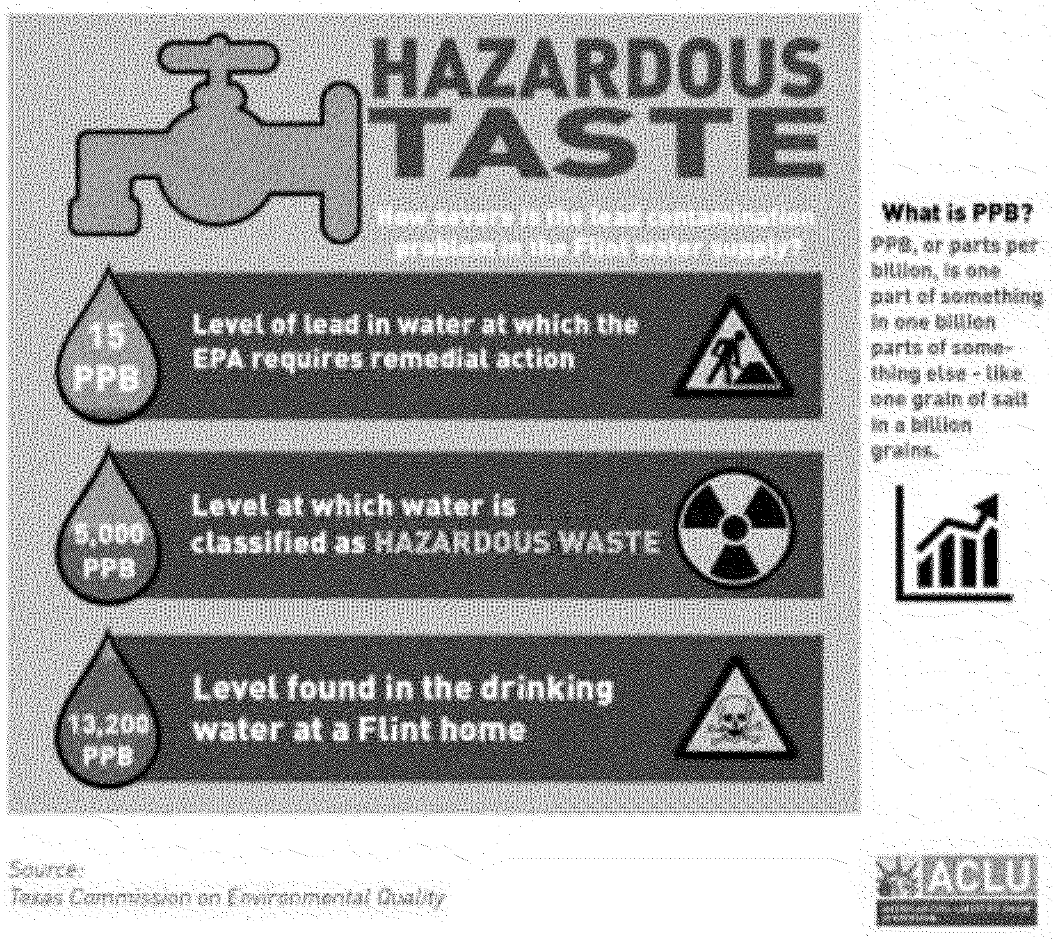
Del Toral went on to say that the city's testing methods were a "serious concern" because they "could provide a false sense of security to the residents of Flint regarding lead levels in the water." As a result, he warned, residents could fail to take the necessary precautions to protect their families from lead in the drinking water.

Virginia Tech's Edwards completely agrees with Del Toral's assessment.

"The net effect of a 'pre-flush' is to greatly reduce the likelihood of detecting lead in samples collected … that would normally be present in the consumers drinking water," Edwards wrote in an email. "I have long maintained that the practice should be banned, as it artificially lowers the amount of lead detected in samples versus typical consumer exposure."

Asked about these concerns, city spokesman Jason Lorenz offered the following email reply: "While I cannot directly respond to Mr. Del Toral's remarks without first contacting the EPA Region 5 office, I can say that the City of Flint follows all the testing procedures and schedules as required by the U.S. EPA."

He added that the Michigan Department of Environmental Quality (MDEQ) endorses the city's sampling method. The MDEQ did not respond to phone calls and e-mails seeking its comments on the controversy.


HAZARDOUS TASTE
How severe is the lead contamination problem in the Flint water supply?
15 PPB
Level of lead in water at which the EPA requires remedial action
5,000 PPB
Level at which water is classified as HAZARDOUS WASTE
13,200 PPB
Level found in the drinking water at a Flint home
What is PPB?
PPB, or parts per billion, is one part of something in one billion parts of something else - like one grain of salt in a billion grains.
ACLU

Source:
Texas Commission on Environmental Quality

Del Toral contended in an interview that what Flint's doing is actually exploiting a "loophole" in the law.

MDT: Unfortunately, I can't recall exactly what I said on this. Flint, as well as all other systems in Michigan are following the MDEQ guidance which includes the pre-flushing.

"From a technical standpoint, there's no justification for the way Flint is conducting its tests," Del Toral said. "Any credible scientist will tell you [the city's] method is not the way to catch worst-case conditions."

There is no legitimate reason for the city's methodology, said Del Toral.

MDT: Again, this is ACLU wording. I think I said something like there was no technical reason for pre-flushing (i.e., it is not something that is done in response to a problem with the EPA sampling method).

EPA rules, he said, required that such interviews be routed through the agency's public affairs people. But he was willing to speak out nonetheless, he said, because of the potential harm to the public.

MDT: See above comment on this issue.

FLUSHING OUT REAL ANSWERS

It was Del Toral who, after determining that the lead problem plaguing the Walters family was coming from outside their home, connected LeeAnne with Edwards at Virginia Tech.

Instead of taking a single sample after a line had been "pre-flushed" under the city's direction, Edwards instructed Walters to collect a series of samples from water that had been allowed to sit in the service line long enough to accurately reflect levels the family could be exposed to under normal use.

MDT: This is not accurate. The water sat in the pipes from April 3, 2015 through April 27, 2015, which is not typical of average household usage.

(Meanwhile, that same service line, dug up and replaced after the sample collection, was found to be made of lead in one section and iron in another.)

Edwards tested the water and discovered that the lead contamination ranged from 200 ppb to the 13,200 ppb figure that stunned LeeAnne Walters—and should likewise shock many others.

Given the age of much of Flint's infrastructure, Edwards agrees with Del Toral's assessment that the test results they found at the Walters home amount to an alarm going off, and others in the city need to pay attention.

MDT: This is a mischaracterization of what I said. I did not say this about the VT sampling. I said this about the samples collected by the City of Flint from the Walters' home (104 ppb & 397 ppb). It was with respect to the lack of any mitigating treatment, and my professional opinion regarding the disintegration of the existing scales formed during the time phosphate treated water was provided by Detroit, which would be occurring city-wide.

"I do not see any reason why there would not be serious problems occurring in at least some other Flint homes," said Edwards.

In 1986, the U.S. Safe Drinking Water Act was amended to prohibit the use of lead pipes in public water systems. Every house built before that is potentially at risk, said Edwards. About half of Flint's roughly 40,000 homes are at least 50 years old.

Making things worse is the fact that the high levels of chlorine being used to treat Flint's dirty river water lead to the creation of a carcinogenic byproduct know as total trihalomethanes, or TTHM. To keep TTHM levels down, the city is adding ferric chloride. The trouble is, that additive can also accelerate the corrosion of lead and iron pipes.

Adding yet another layer to the problem is something the city is *not* doing.

According to Del Toral, Flint should be adding corrosion-control chemicals designed to help keep lead and copper in pipes from leaching into drinking water. Doing so is required by federal regulations, wrote Del Toral in his memo.

MDT: This is not an accurate statement. What I said was that large systems were required to install and maintain optimal corrosion control, unless the system meets the treatment exemption criteria in the Lead and Copper Rule.

"To our knowledge, that is inaccurate," said Flint spokesman Lorenz. "Before the plant was placed in operation, the City (and our engineering firm) had numerous discussions with DEQ personnel and inquired if corrosion-control chemicals – typically phosphates --needed to be included in the treatment process. The use of these chemicals was not required or mandated."

What's indisputable is this:

Flint's water contained corrosion-control chemicals until April 2014, when Flint's ties to the Detroit water system were severed. Flint officials hailed that changeover as a cost-cutting move for a city facing a financial crisis so severe it had been placed under the control of a state-appointed emergency manager.

Discontinuing the use of the anti-corrosion chemicals allowed toxic scale built up on the insides of pipes over the past decades to be released into water flowing into people's homes, explained Del Toral.

In his memo, Del Toral warned: "The lack of mitigating treatment is especially concerning as the high lead levels [that result] will likely not be reflected in the City of Flint's compliance samples due to sampling procedures used…"

In other words, at the same time the city is exacerbating the problem, it's conducting tests that will probably fail to identify the true extent of the threat.

Del Toral described the situation as a "major concern."

"In the absence of any corrosion control treatment, lead levels in drinking water can be expected to increase," he warned in his memo.

The EPA offered Flint officials the use of agency experts to help get the situation under control, said Del Toral, but added that, to his knowledge, the city has so far declined all help.

MDT: This is inaccurate. My standing recommendation to R5 management is to pursue this and that has not played out yet. He may be mixing up what I said with what Ms. Walters said (see below).

LeeAnne Walters said that when she asked why city officials weren't taking the EPA's offer of assistance, she was told, "We don't need it."

Flint spokesman Lorenz, on the other hand, maintained that “the city continues to work closely with the MDEQ and the EPA Regional Office.”

As for Walters’s family, that the city has finally replaced the service line leading to their home, and lead levels have dropped below the 15 ppb EPA action level.

The problem now, she said, is that water currently coming out of her tap tinged yellow and smells of rotten eggs. City officials have given her no explanation as to the possible cause of that.

It is just one more in a long list of questions that need to be addressed.

“What we need,” said Walters, “are more answers.”

But it’s not just answers the people of Flint require.

They also need solutions. And, as Del Toral’s EPA memo emphasizes, they need them immediately.

Click the link to read the full EPA Memo: http://www.aclumich.org/sites/default/files/file/EPAWaterReport062415.pdf

To: Deltoral, Miguel[deltoral.miguel@epa.gov]; Crooks, Jennifer[crooks.jennifer@epa.gov]
Cc: Bair, Rita[bair.rita@epa.gov]
From: Harris, Kimberly
Sent: Mon 7/13/2015 7:16:54 PM
Subject: RE: Flint Water Question from a Pregnant Flint Resident

Hi Miguel,

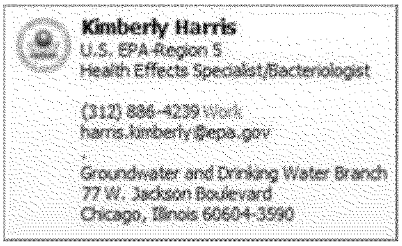
Below is my recommended response to the TTHM question.

Regarding your TTHM question, we considered developmental and reproductive risks from multiply intake routes of exposure (e.g., ingestion, inhalation, and dermal) in our 2006 Disinfectants and Disinfection Byproducts (DBPR) rule. Some studies did suggest associations between TTHM exposure and various adverse reproductive and development health effects. However, studies available overall showed inconsistent results. As such, our Agency could not conclude whether exposure to TTHMs could cause adverse reproductive/developmental health effects. However, we did note in our findings that there was the potential for concern.

Currently, we are in the process of re-evaluating our DBPR rules and considering new toxicological data regarding reproductive and developmental health effects. Until our evaluation is complete, pregnant women can elect to take additional precautionary measures such as taking shorter showers, venting the room while showering/bathing, and not ingesting water with high TTHM concentrations.

Hope that helps,

Kim



Kimberly Harris
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Health Effects Specialist/Bacteriologist

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,
Groundwater and Drinking Water Branch
77 W. Jackson Boulevard
Chicago, Illinois 60604-3590

From: Deltoral, Miguel
Sent: Monday, July 13, 2015 11:16 AM
To: Crooks, Jennifer
Cc: Harris, Kimberly
Subject: Re: Flint Water Question from a Pregnant Flint Resident

Yes, but they are pre-flushed 1st-draw samples. As I mentioned to Tinka, I cannot recommend that.

Miguel A. Del Toral

Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

From: Crooks, Jennifer
Sent: Monday, July 13, 2015 10:53 AM
To: Deltoral, Miguel
Cc: Harris, Kimberly
Subject: RE: Flint Water Question from a Pregnant Flint Resident

Miguel—Flint has offered, and will conduct free water testing for residents.

Flint Water Treatment Plant – (810) 787-6537

Flint Water Service Center – (810) 766-7202

From: Deltoral, Miguel
Sent: Monday, July 13, 2015 10:43 AM
To: Hyde, Tinka
Cc: Harris, Kimberly; Crooks, Jennifer
Subject: Re: Flint Water Question from a Pregnant Flint Resident

Will do. Kim will be in late today, so when I get her input I'll re-draft and send it to you.

Miguel A. Del Toral

Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

From: Hyde, Tinka
Sent: Monday, July 13, 2015 10:32 AM
To: Deltoral, Miguel
Cc: Harris, Kimberly; Crooks, Jennifer
Subject: RE: Flint Water Question from a Pregnant Flint Resident

Thanks Miguel this is helpful. So I think the response should include the following:

- Reference to the sampling protocol you would recommend – I assume that would include little or no pre-flushing. I recall that we have a protocol already established?
- A statement about if elevated levels either add a filter on bath tap or recommend only using filtered tap for consumption. Can also refer them to our web site for flushing protocols as appropriate.

Thanks

From: Deltoral, Miguel
Sent: Monday, July 13, 2015 10:24 AM
To: Hyde, Tinka

Cc: Harris, Kimberly; Crooks, Jennifer
Subject: Re: Flint Water Question from a Pregnant Flint Resident

Sounds good. I'll wait on Kim and combine everyone into one response. On your questions below...

Will the city test her unfiltered water? If so we can refer her to them.

Yes, the city will test her water, but they do resident-requested testing using pre-flushed 1st draw samples and I cannot in good conscience recommend that. It would miss any lead that is there if she has a lead service line and she would have a false sense of security and may end up being exposed to high lead levels.

Do we have a recommended testing frequency?

The sample collection methodology is far more important than the testing frequency. For example, if frequent (monthly) pre-flushed first-draw samples were collected, you would miss the high lead every time you sample. You would catch lead particles from time to time becasuse they are released sporadically, but that is hit or miss in any given sample. If you collect a set of sequential samples only once, that would provide much better information because it tells you if there is high lead and where it is coming from, but a typical set of sequential samples would involved 12-15 samples at about $25 per sample ($300 - $375), and that's not something the average homeowner can afford. I didn't want to get into all of these details with the resident for obvious resasons. Regarding the bathroom tap...I don't recommend filters for the bathroom tap, so I should have also included a recommendation that if she tests the filtered water from the kitchen tap and it's fine, maybe another recommendation is that only water from the kitchen tap should be used for consumption (cooking/drinking).

- **If there are high levels of lead how to they assess the source?**

The most straightforward way is to collect sequential samples, but as I mentioned that can be expensive, and if you find a lead line, my recommendation would be to use a water filter anyway. Since she is already doing that, I tried to provide advice based on her specific situation.

Miguel A. Del Toral

Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

From: Hyde, Tinka
Sent: Monday, July 13, 2015 09:48 AM
To: Deltoral, Miguel
Cc: Harris, Kimberly; Crooks, Jennifer
Subject: RE: Flint Water Question from a Pregnant Flint Resident

Miguel – Thanks for sharing your draft response. I recommend the following:

1. That we send one response that covers both the TTHMs and the Lead questions. Once you have Kim's response then please combine them into one message.

2. I think that she wants to test her water because she only has one filtered tap (the kitchen) and her bath tap is not filtered. She also had a couple other questions which I'm not sure we can answer. To make sure we provide a complete response, I have a couple of questions:

- Will the city test her unfiltered water? If so we can refer her to them.
- Do we have a recommended testing frequency?
- If there are high levels of lead how to they assess the source?

If we are only responding to the question of how to get water tested, I recommend rewording the second paragraph as follows:

~~Regarding the sampling, it can get fairly expensive to collect water samples to characterize lead levels in the untreated and treated water and I don't think that is necessary. If you change the filter in accordance with the manufacturer's instructions, you should be fine. If your concern is regarding the capacity of the filter to remove the lead, you could collect a sample of the filtered water which I think would be more informative and less expensive than trying to characterize the untreated and treated water.~~ If you decide to test your filtered and unfiltered water, you should use a laboratory that has been certified by the State for drinking water analyses (link below).

http://www.michigan.gov/deq/0,4561,7-135-3307_4131_4156-36940--,00.html

Once you have answered my questions above and Kim has developed a response, please send me your updated response. Thanks.

From: Deltoral, Miguel
Sent: Monday, July 13, 2015 6:57 AM
To: Hyde, Tinka
Cc: Harris, Kimberly; Crooks, Jennifer
Subject: Fw: Flint Water Question from a Pregnant Flint Resident

Hi Tinka,

Tom, Rita, Nick and Tim are out, so I wanted to run this by you before responding...

We received an email from a resident in Flint which was also sent to Dr Edwards at Virginia Tech. Below is the email exchange between Dr. Edwards and the resident. I propose to respond to the resident with the draft email below, but wanted to run this by you before I send it. Please advise.

Kim - Please send the draft response on TTHMs to Tinka for review before sending and copy Jen, since she is acting today.

DRAFT RESPONSE

Hello Citizen name / Ex. 6

I agree with Marc's responses on the water filter . Filters that are certified to remove lead are typically designed to remove 99 percent of lead. They are also designed with additional capacity as a safety measure, but you should still change the filter in accordance with the manufacturer's instructions.

Regarding the sampling, it can get fairly expensive to collect water samples to characterize lead levels in the untreated and treated water and I don't think that is necessary. If you change the filter in accordance with the manufacturer's instructions, you should be fine. If your concern is regarding the capacity of the filter to remove the lead, you could collect a sample of the filtered water which I think would be more informative and less expensive than trying to characterize the untreated and treated water. If you decide to test the water, you should use a laboratory that has been certified by the State for drinking water analyses (link below).

http://www.michigan.gov/deq/0,4561,7-135-3307_4131_4156-36940--,00.html

Regarding your questions on the TTHMs, I am not a health effects expert, so I am forwarding your email to Kimberly Harris for response.

Regards,

Miguel Del Toral

Hi Kim,

See email exchange below. I think Marc's responses are fine on the lead, but we need to respond to the TTHM/showering questions, which I think you have responded in the past. Please forward your draft response to Tinka for review prior to responding.

Miguel A. Del Toral

Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

From: Marc Edwards <edwardsm@vt.edu>
Sent: Sunday, July 12, 2015 09:22 AM
To: Citizen name / Ex. 6
Cc: Deltoral, Miguel
Subject: RE: Flint Water Question from a Pregnant Flint Resident

I think it will ok. Just replace the filter in the device on the recommended schedule, and do not drink the water if it is discolored…the water should look clean.

Best Regards, Marc

From: Personal Email / Ex. 6
Sent: Sunday, July 12, 2015 12:24 AM
To: Marc Edwards
Cc: deltoral.miguel@epa.gov
Subject: Re: Flint Water Question from a Pregnant Flint Resident

Marc, thank you for your quick reply and thoughtful feedback. I appreciate it very much. You are correct that the faucet filter is rated to remove 99% of lead contamination. What I am not certain about is whether that level of removal is variable based on the amount of lead coming to the faucet. I suppose that if a higher lead level would just result in the filter needing replacement sooner rather than passing more through the filter and into my drinking glass. Please correct me if this is a mistaken assumption.

Again, thank you, and Miguel I appreciate any recommendations you may have as well.

All the best,

Citizen name / Ex. 6

On Sat, Jul 11, 2015 at 8:31 PM, Marc Edwards <edwardsm@vt.edu> wrote:

Hi Citizen name / Ex. 6

I too thank Miguel for his leadership on this.

I think the filtered water will generally be of very high quality. It is likely that your filtered is rated for lead removal….let me know.

Even if it is not rated for lead, it is probably a big improvement and does remove a lot of the lead, if it is present.

Bottled water is a good alternative, but as you say, there is no "perfectly" pure water source.

If it were me, I would continue to use the filtered water. Good luck with your pregnancy. Sounds like you are doing everything right.

Best Regards,

Marc

From: Personal Email / Ex. 6
Sent: Saturday, July 11, 2015 5:57 PM
To: deltoral.miguel@epa.gov; edwardsm@vt.edu
Subject: Flint Water Question from a Pregnant Flint Resident

Dear Dr. Edwards and Dr. Del Toral,

Thank you for the work you have already done in my city to protect families from water contaminant exposure. I am a Flint resident, pregnant with my first child, and therefore advised to drink a whopping 10-16 cups of water each day. I am writing to see if you can shed some light or point me to another source for answers regarding water testing and the safest option for staying hydrated.

If your wife or sister or friend were living in Flint and pregnant, what course of action would you recommend she take? Here is my situation:

- A little background: Prior to becoming pregnant, I installed a pur advanced water filter on our kitchen faucet and always use it when drinking from the tap, which I do frequently. (According to the pur website, the filter is said to filter out 70+ chemicals. Recently, I contacted the company to request more information on exactly what chemicals are filtered and up to what level, and am awaiting their reply.) When using the filter, the water is crystal clear, free of the river smell and without the slight yellow tinge that we sometimes have coming out of the tap (unlike in our bathroom sink which I use to brush my teeth...). I was compelled to purchase the filter because my legs began to swell after Flint changed to the river water, and after installing the filter this problem went away. I even tested the difference by drinking filtered water some days (consistently no swelling) and and unfiltered water others (consistent swelling) for a week or two. I understand the swelling to be the result of sodium chloride in our water which is corrosive enough to make GM stop using Flint water in their local plant (http://www.mlive.com/news/flint/index.ssf/2014/10/general_motors_wont_use_flint.html)
- Given your findings of high levels of lead in some residents' water, my husband strongly believes that I should cease drinking all Flint water and drink bottled water instead. However, I have read extensively about safety concerns of plastic-bottled water (chemists who work with plastics avoid drinking it) and this does not seem to be a safer option despite frequent bottled water drives organized by well-meaning activists across Flint.

- I would like to test our house's tap water with and without the kitchen filter using an independent lab, but my husband thinks this will be a futile effort because we have no reliable way of knowing if the results on one day will be consistent with results on other days, such as if the City of Flint were doing some special change to the water treatment procedure. Would testing multiple times across several weeks be sufficient to address this possibility? If so, how many times and at what interval would you recommend testing, and can you recommend a testing lab? If a high level of lead is discovered, who should we contact to determine where the lead is coming from as a next step?

- According to the consultant that Erin Brockovich sent to Flint earlier this year (http://www.mlive.com/news/flint/index.ssf/2015/02/tthm_how_worried_should_flint.html), total trihalomethanes (TTHM) in the water are dangerous to pregnant women through inhalation exposure during hot showers. (And pregnant women tend to appreciate long, hot showers because our backs are constantly aching!) At this point, the lead issues seem more frightening, though we are considering investing in a costly whole-house water filtration system to deal with both. How can we determine the relative risk to pregnant women for lead in the water vs. TTHMs? I suppose that could differ from house to house. What sort of whole-house filtration would you recommend?

- Are there any other considerations that you think I should keep in mind?

Even for those residents who are privileged to be educated and able to afford water filtration devices, the public water issues we are living with are confounding. The information we receive about our public water supply tends to be fragmented and coming from local public officials who have an interest in downplaying public concerns. In the meantime, it is very difficult to make truly informed decisions about our health.

Thank you in advance for any insights you can share and helping to give my baby a good start in life. I understand if you need to respond as a fellow resident of the world and as experts in general rather than as affiliates of the organizations in which you are employed.

Thank you much,

Citizen name / Ex. 6

Personal Address / Ex. 6

Personal Phone / Ex. 6

To: Crooks, Jennifer[crooks.jennifer@epa.gov]; Bair, Rita[bair.rita@epa.gov]; Damato, Nicholas[damato.nicholas@epa.gov]; Deltoral, Miguel[deltoral.miguel@epa.gov]; Porter, Andrea[porter.andrea@epa.gov]; Shoven, Heather[shoven.heather@epa.gov]
From: Kuefler, Janet
Sent: Mon 7/13/2015 9:59:48 PM
Subject: RE: Flint Discussion

I agree with Jen's last sentence. I think focusing on what the system and local health department, or TSC-Cincy experts or CDC can do in the short term to assess the extent of the issue and offer remediation options that can be quickly implemented, if needed, is a sound approach.

I am not certain of the regulatory applicability related to previous consecutive systems, which can come to agreement with the parent system about who does what, and how this scenario applies to the former consecutive system for things like installation and maintenance of corrosion control (since the installation was not done by the former consecutive system.) Can we ask HQ if they know of other systems like this, or maybe this has been done already. I am still catching up on email.

Thanks,

Janet Kuefler
Ground Water and Drinking Water Branch
State Programs Team Leader

United States Environmental Protection Agency, Region 5
77 West Jackson Blvd. (WG-15J)
Chicago, Illinois 60604

(312) 886-0123
kuefler.janet@epa.gov

From: Crooks, Jennifer
Sent: Thursday, July 09, 2015 3:45 PM
To: Bair, Rita; Damato, Nicholas; Deltoral, Miguel; Porter, Andrea; Kuefler, Janet; Shoven, Heather
Subject: RE: Flint Discussion

Rita--you asked at our July 1 meeting that we provide you with any comments related to your write-up to summarize this situation with Flint, or from our meeting.

I had a discussion with Miguel earlier this week, and it seems more apparent that Flint may have violated the LCR by not maintaining corrosion control after being optimized back in the early

1990's (since they were a customer of Detroit). MDEQ did not tell Flint to maintain corrosion control; instead, they treated the change in source water as a new system. I'll bet that the State will take this personally since they are responsible for the City of Flint's actions; which isn't a bad thing, but they may get VERY defensive. We can get into the weeds and explain in detail the intent of the rule and our interpretation of the rule and why the State must issue a TT violation, but in the end; the City, the State and we must move forward TOGETHER to correct this problem. We have resources in Mike Schock and Darren Lytle and Mike Wright; and we want to work with the State and the City to address ALL of the contaminant issues going on in Flint; bacti, TTHMs, Legionella, lead--from a wholistic approach to get some form of corrosion control working that doesn't minimize treatment for bacti or TTHMs. It doesn't make sense to discuss with the State what happened in the past; we need to move forward and work with the State as our partner; as the State sees the lead levels climbing, I don't see the benefit in rubbing their nose in the fact that we're right, and they're wrong.

If the State/City agree to issue public education on how citizens must properly flush their taps, I'm wondering what the benefit would be to force the State to issue a TT violation to Flint.

Regarding the State's protocol of pre-flushing, Miguel said earlier this week on the phone with me that pre-flushing didn't really make that much difference in the lead levels when the City was using Detroit water, since there was scale existing on the inside of the lead pipes. Now that the scale appears to be disappearing, the lead levels are starting to rise even with pre-flushing being conducted prior to sampling. Yes, the levels would probably be higher without the pre-flushing, but the City may exceed the Action Level even with the pre-flushing. Maybe the issue of the State's use of pre-flushing is moot at this point; perhaps we need to focus our energy on getting the State and City to accept our offer of Darren and Mike's participation in a wholistic approach to starting corrosion control and implementing public education for lead.

Jennifer

From: Bair, Rita
Sent: Wednesday, July 01, 2015 8:32 AM
To: Damato, Nicholas; Crooks, Jennifer; Deltoral, Miguel; Porter, Andrea; Kuefler, Janet; Shoven, Heather
Subject: RE: Flint Discussion

I have been trying to wrap by brain around all the Flint issues and developed the attached summary that I thought I'd share for the meeting. Our objective for the meeting is to discuss the status of Flint, what are all the current issues are, and to all agree on next steps and messaging. If you have other objectives for the meeting please bring those up first thing at the meeting.

<< File: Flint Summary of Issues.docx >>

-----Original Appointment-----
From: Bair, Rita
Sent: Monday, June 29, 2015 12:29 PM
To: Bair, Rita; Damato, Nicholas; Crooks, Jennifer; Del Toral, Miguel; Porter, Andrea; Kuefler, Janet; Shoven, Heather
Subject: Flint Discussion
When: Wednesday, July 01, 2015 9:00 AM-10:00 AM (UTC-06:00) Central Time (US & Canada).

Where: R5Metcalfe-ConfRm-R1515B/R5-Metcalfe---15th-Floor

To: Hyde, Tinka[hyde.tinka@epa.gov]
Cc: Jeff Kelley (kelley.jeff@epa.gov)[kelley.jeff@epa.gov]; Anne Rowan[Rowan.Anne@epa.gov]; Cannon, Phillippa[Cannon.Phillippa@epa.gov]; Cannon, Phillippa[Cannon.Phillippa@epa.gov]; Singer, Joshua[Singer.Joshua@epa.gov]
From: Cassell, Peter
Sent: Tue 7/14/2015 4:10:48 PM
Subject: RE: Flint Water question

FYI, he called me just now. Any progress on the statement? He told me he is particularly concerned about the sampling process and how that was to just get best case scenario results.

Also, he is with the ACLU, so our statement is for them rather than a news outlet (do they have a news outlet)? Either way, he is obviously interested in our response.

Pete Cassell
Press Officer
U.S. Environmental Protection Agency

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77 West Jackson Blvd (P-19J)
Chicago, IL 60604-3590
Office (312) 886-6234
Mobile Personal Phone / Ex. 6

From: Curt Guyette [mailto:cguyette@aclumich.org]
Sent: Monday, July 13, 2015 9:12 AM
To: Cannon, Phillippa; Cannon, Phillippa; Cassell, Peter; Singer, Joshua
Subject: Flint Water question

I am following up on a June 24 memo written by Miguel Del Doral of the EPA's Region 5. In that memo, Mr. Del Toral asserts that a city the size of Flint is required to use a corrosion control treatment such as phosphate in their drinking water.

Is Mr. Del Toral correct?

Also, both Mr. Del Toral, and Marc Edwards, an expert on the issue at Virginia Tech, both say that the manner in which Flint conducts its tests is almost cdertain to minimize the risk and miss worst-case scenarios.

What is the EPA's opinion regarding that?

I can be reached by phone at (w) 313-578-6834 or © Personal Phone / Ex. 6

Curt Guyette

To: Hyde, Tinka[hyde.tinka@epa.gov]
Cc: Crooks, Jennifer[crooks.jennifer@epa.gov]; Porter, Andrea[porter.andrea@epa.gov]; Deltoral, Miguel[deltoral.miguel@epa.gov]; Poy, Thomas[poy.thomas@epa.gov]; Damato, Nicholas[damato.nicholas@epa.gov]
From: Bair, Rita
Sent: Tue 7/14/2015 5:28:35 PM
Subject: RE: ACTION: Flint Water question

Please find below GWDWB's edits to the reporter response. The citation to the Federal SDWA requirements are correct. Please let me know if you have any questions.

CLARIFICATION: **We would like to clarify that the elevated lead levels (13,200 ppb) in the Citizen name / Ex. 6 residence were unique in two ways: 1) the sampled water sat stagnant in the pipes for over 3 weeks (longer stagnation time would be expected to yield higher lead levels), and 2) the long length and configuration of the Citizen name / Ex. 6 service line. Most typical homes in Flint would not have such a configuration or long periods of stagnation time.**

RESPONSES:

Mr. Del Toral asserts that a city the size of Flint is required to use a corrosion control treatment such as phosphate in their drinking water. Is Mr. Del Toral correct?

Generally, large drinking water systems (which is what Flint is) are required to evaluate and optimize corrosion control treatment as necessary. In the case of Flint and their recent (April 30, 2014) transition to a new source of drinking water (Flint River), MDEQ determined that Flint should follow procedures for new systems. This entails two six month monitoring periods to assess whether corrosion control treatment is necessary. The two rounds of sampling in Flint were from July 1, 2014 – December 31, 2014 and January 1, 2015 – June 30, 2015. The water system had until July 10th to submit the sampling results to MDEQ for compliance determination. Once the results of the two 6-month monitoring efforts are evaluated a decision can be made on whether a corrosion control treatment study is needed. If a treatment study is conducted, Flint and MDEQ will work together to determine the level and type of corrosion control treatment needed.

Also, both Mr. Del Toral, and Marc Edwards, an expert on the issue at Virginia Tech, both say that the manner in which Flint conducts its tests is almost certain to minimize the risk and miss worst-case scenarios. What is the EPA's opinion regarding that?

Lead compliance sampling procedures in the state of Michigan comply with Federal SDWA requirements which calls for a minimum of 6 hours during which there is no water used from the tap the sample is taken from. EPA is currently developing the Lead and Copper Long-term Revisions Rule which will address a variety of issues, including sampling protocols.

From: Crooks, Jennifer
Sent: Tuesday, July 14, 2015 11:19 AM
To: Porter, Andrea; Bair, Rita
Subject: ACTION: Flint Water question

Thank you, Andrea! I did find a sentence in Miguel's rebuttal to the reporter's comments that states, Citizen name / Ex. 6 service line configuration and long length is also likely not what would be found in most typical homes in Flint." That's what Tinka read yesterday, so I'm going to leave as is. But, I did add your other suggested phrase below in red.

Rita—I thought I'd send this back to Tinka, or maybe you want to forward back to Tinka if you think it's OK—she wanted Miguel's review, but Andrea did a very nice job.

Jennifer

From: Porter, Andrea
Sent: Tuesday, July 14, 2015 8:46 AM
To: Crooks, Jennifer
Subject: RE: ACTION: Flint Water question

Hi Jennifer,

You did a great job of succinctly answering the questions.

For the "CLARIFICATION" part, I think everyone will agree that having a 3 week stagnation period is atypical, but do we know enough about distribution system configurations in Flint to say that the Citizen name / Ex. 6 long service line is atypical? I think we hope it is, but I'm not sure we know. Also, for this section, do you want to say explicitly that a long stagnation time would be expected to yield higher lead levels?

Thanks,

Andrea Porter

Environmental Engineer

Ground Water & Drinking Water Branch

U.S. EPA, Region 5 (WG-15J)

77 W. Jackson Blvd.

Chicago, IL 60604

Phone: 312-886-4427

Fax: 312-697-2656

From: Crooks, Jennifer
Sent: Monday, July 13, 2015 3:57 PM
To: Porter, Andrea
Subject: FW: ACTION: Flint Water question

Andrea—could you review this for accuracy? Thank you!

Jen

From: Hyde, Tinka
Sent: Monday, July 13, 2015 3:23 PM
To: Cassell, Peter
Cc: Henry, Timothy; Poy, Thomas; Crooks, Jennifer; Bair, Rita; Damato, Nicholas
Subject: ACTION: Flint Water question

Pete – Here is my initial response. I would like to have staff review before we respond – Any issues with getting our response out tomorrow?

Miguel – Please take a look and let me know if this accurately reflects our regulations. Also, please advise whether the reference to the LCLTR is accurate and ok for public release. Thanks

CLARIFICATION: **We would like to clarify that the elevated lead levels (13,200 ppb) in the Citizen name / Ex. 6 residence were unique in two ways: 1) the sampled water sat stagnant in the pipes for over 3 weeks (longer stagnation time would be expected to yield higher lead levels), and 2) the long length and configuration of the Citizen name / Ex. 6 ervice line. Most typical homes in Flint would not have such a configuration or long periods of stagnation time.**

RESPONSES:

Mr. Del Toral asserts that a city the size of Flint is required to use a corrosion control treatment such as phosphate in their drinking water. Is Mr. Del Toral correct?

Generally, large drinking water systems (which is what Flint is) are required to evaluate and optimize corrosion control treatment as necessary. In the case of Flint and their recent (April 30, 2014) transition to a new source of drinking water (Flint River), MDEQ determined that Flint should follow procedures for new systems. This entails two six month monitoring period to assess whether corrosion control treatment is necessary. The results of this monitoring effort will be completed by the end of July 2015 and will inform whether a corrosion control treatment study is needed. If a treatment study is conducted, Flint and MDEQ will work together to determine the level and type of corrosion control

treatment needed.

Also, both Mr. Del Toral, and Marc Edwards, an expert on the issue at Virginia Tech, both say that the manner in which Flint conducts its tests is almost certain to minimize the risk and miss worst-case scenarios. What is the EPA's opinion regarding that?

Lead compliance sampling procedures in the state of Michigan comply with Federal SDWA requirements which calls for a minimum of 6 hours during which there is no water used from the tap the sample is taken from. EPA is currently developing the Lead and Copper Long-term Revisions Rule which will address a variety of issues, including sampling protocols.

From: Cassell, Peter
Sent: Monday, July 13, 2015 1:22 PM
To: Poy, Thomas
Cc: Henry, Timothy; Hyde, Tinka
Subject: FW: Flint Water question

Any thoughts on how to respond?

Pete Cassell
Press Officer
U.S. Environmental Protection Agency

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Mobile Personal Phone / Ex. 6

From: Cannon, Phillippa

Sent: Monday, July 13, 2015 9:21 AM
To: Kelley, Jeff; Arcaute, Francisco
Cc: Cassell, Peter
Subject: FW: Flint Water question

From: Curt Guyette [mailto:cguyette@aclumich.org]
Sent: Monday, July 13, 2015 9:12 AM
To: Cannon, Phillippa; Cannon, Phillippa; Cassell, Peter; Singer, Joshua
Subject: Flint Water question

I am following up on a June 24 memo written by Miguel Del Doral of the EPA's Region 5. In that memo, Mr. Del Toral asserts that a city the size of Flint is required to use a corrosion control treatment such as phosphate in their drinking water.

Is Mr. Del Toral correct?

Also, both Mr. Del Toral, and Marc Edwards, an expert on the issue at Virginia Tech, both say that the manner in which Flint conducts its tests is almost cdertain to minimize the risk and miss worst-case scenarios.

What is the EPA's opinion regarding that?

I can be reached by phone at (w) 313-578-6834 or © Personal Phone / Ex. 6

Curt Guyette

To: Rowan, Anne[rowan.anne@epa.gov]
Cc: Hyde, Tinka[hyde.tinka@epa.gov]; Kelley, Jeff[kelley.jeff@epa.gov]; Cannon, Phillippa[Cannon.Phillippa@epa.gov]; Cassell, Peter[cassell.peter@epa.gov]
From: Hedman, Susan
Sent: Tue 7/14/2015 8:29:41 PM
Subject: Slightly revised responses to 2 follow-up questions re: Flint drinking water

Q. Mr. Del Toral asserts that a city the size of Flint is required to use a corrosion control treatment such as phosphate in their drinking water. Is Mr. Del Toral correct?

Flint and other large drinking water systems are required to evaluate and optimize pipe corrosion control treatment to protect water from contaminants such as lead. When the City started sourcing drinking water from the Flint River in April 2014, the Michigan Department of Environmental Quality determined that Flint should follow the protocol for new systems -- which requires two new rounds of water sampling to determine whether corrosion control treatment is needed. The City has submitted sampling results for the six-month periods from July-December 2014, and from January-June 2015. MDEQ is currently analyzing the sampling data to determine whether corrosion control treatment is needed.

Q. Also, both Mr. Del Toral, and Marc Edwards, an expert on the issue at Virginia Tech, both say that the manner in which Flint conducts its tests is almost certain to minimize the risk and miss worst-case scenarios. What is the EPA's opinion regarding that?

Michigan complies with the Federal Safe Drinking Water Act's protocol which requires that the tap remain unused for at least 6 hours before taking a sample. EPA is currently revising the federal lead and copper rule to address several issues including sampling protocols.

In addition, EPA notes that the water samples taken from the Walters' residence were atypical in two ways:

•□□□□□□ the tap had not been run for over three weeks before the samples were taken. Stagnation can cause higher lead levels, and

•□□□□□□ the home’s long service line is configured in an unusual way.

From: Rowan, Anne
Sent: Tuesday, July 14, 2015 2:29 PM
To: Hedman, Susan
Cc: Hyde, Tinka; Kelley, Jeff; Cannon, Phillippa; Cassell, Peter
Subject: For Review: Draft responses to 2 follow-up questions re: Flint drinking water - deadline today
Importance: High

Susan, attached below are WD- approved proposed responses to the follow-up questions from Curt Guyette, the ACLU’s investigative reporter. Please advise. Thanks.

Q. Mr. Del Toral asserts that a city the size of Flint is required to use a corrosion control treatment such as phosphate in their drinking water. Is Mr. Del Toral correct?

Flint and other large drinking water systems are required to evaluate and optimize corrosion control treatment of pipes to protect water from contaminants such as lead. Because the City started sourcing drinking water from the Flint River in April 2014, the Michigan Department of Environmental Quality determined that Flint should follow the protocol for new systems which requires two new rounds of water sampling. The City has submitted sampling results for the six-month periods from July-December 2014, and from January-June 2015. MDEQ is currently analyzing the sampling data to determine whether corrosion control treatment is needed.

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In addition, EPA notes that the water samples taken from the Walters' residence were atypical in two ways:

- the tap had not been run for over three weeks before the samples were taken. Stagnation can be expected to cause higher lead levels, and
- the home's long service line is configured in an unusual way.

To: Hyde, Tinka[hyde.tinka@epa.gov]
Cc: Porter, Andrea[porter.andrea@epa.gov]; Crooks, Jennifer[crooks.jennifer@epa.gov]; Harris, Kimberly[harris.kimberly@epa.gov]; Deltoral, Miguel[deltoral.miguel@epa.gov]
From: Bair, Rita
Sent: Tue 7/14/2015 8:33:34 PM
Subject: FW: Flint Water Question from a Pregnant Flint Resident

Tinka, Below is the re-drafted email response to the citizen inquiry. If it is ok, I can send it out myself as written. Otherwise, I can have Miguel re-work it when he gets back.

Ms. [redacted] **Citizen name / Ex. 6**

We are responding to your email of July 11, 2015 to Miguel Del Toral. He is out of the office today, but has provided the following information to your questions. Overall, he agrees with Marc's responses on the water filter. Filters that are certified to remove lead are typically designed to remove 99 percent of the lead. They are also designed with additional capacity as a safety measure, but you should still change the filter in accordance with the manufacturer's instructions. If you identify elevated lead levels from other taps that do not have water filters, we suggest either adding a filter to those, such as the bathroom tap, or only using the filtered tap water for consumption.

If you are still interested in having your water tested you should use a laboratory that has been certified by the State for drinking water analyses (a list is available from the following link: http://www.michigan.gov/deq/0,4561,7-135-3307_4131_4156-36940--,00.html. Please note that a first-draw sample, regardless of pre-flushing, is best for identifying lead that comes from the faucet and other in-home piping or fittings close to the faucet. First-draw sampling does not give a good indication of the lead contribution from sources further from the faucet (i.e. lead service line, leaded brass meter, etc.). Information for residents about first-draw sampling instructions can be found on the last page of the 2006 memo on aerators and LCR sampling at the following link: http://www.epa.gov/ogwdw/lcrmr/pdfs/memo_tapsamples-aerators_10202006.pdf. In addition, below are two graphics from our Region 5 website with information about how to identify if you have a lead service line coming into your home and for faucets that do not have filters on them, how to clean the aerators.

Regarding your TTHM question, EPA has considered developmental and reproductive risks from multiple intake routes of exposure (e.g., ingestion, inhalation, and dermal) in our 2006 Disinfectants and Disinfection Byproducts (DBPR) rule. Some studies did suggest associations between TTHM exposure and various adverse reproductive and development health effects.

However, studies available overall showed inconsistent results. As such, our Agency could not conclude whether exposure to TTHMs could cause adverse reproductive/developmental health effects. However, we did note in our findings that there was the potential for concern.

Currently, we are in the process of re-evaluating our DBPR rules and considering new toxicological data regarding reproductive and developmental health effects. Until our evaluation is complete, pregnant women can elect to take additional precautionary measures such as taking shorter showers, venting the room while showering/bathing, and not ingesting water with high TTHM concentrations.

We hope this information is helpful to you.

Rita D. Bair

Section 2 Chief

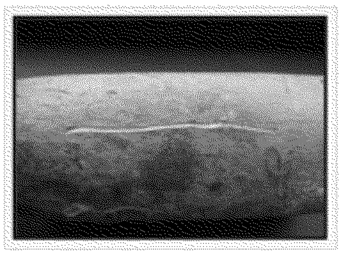
Ground Water and Drinking Water Branch

USEPA-Region 5

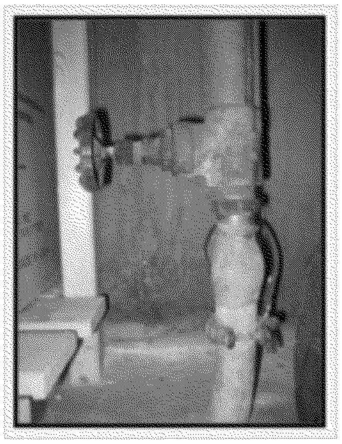
phone: (312) 886-2406

fax: 312-692-2132

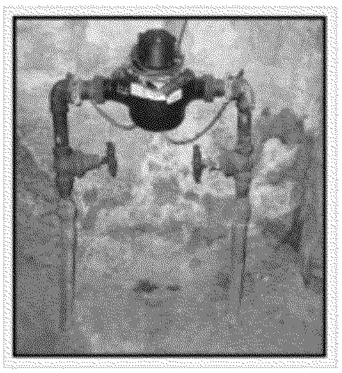
What do lead service lines look like?



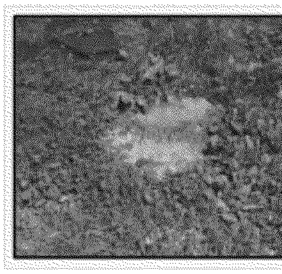
Lead service lines are generally a dull gray color and are very soft. You can identify them easily by carefully scratching with a key. If the pipe is made of lead, the area you've scratched will turn a bright silver color. Do not use a knife or other sharp instrument and take care not to puncture a hole in the pipe.



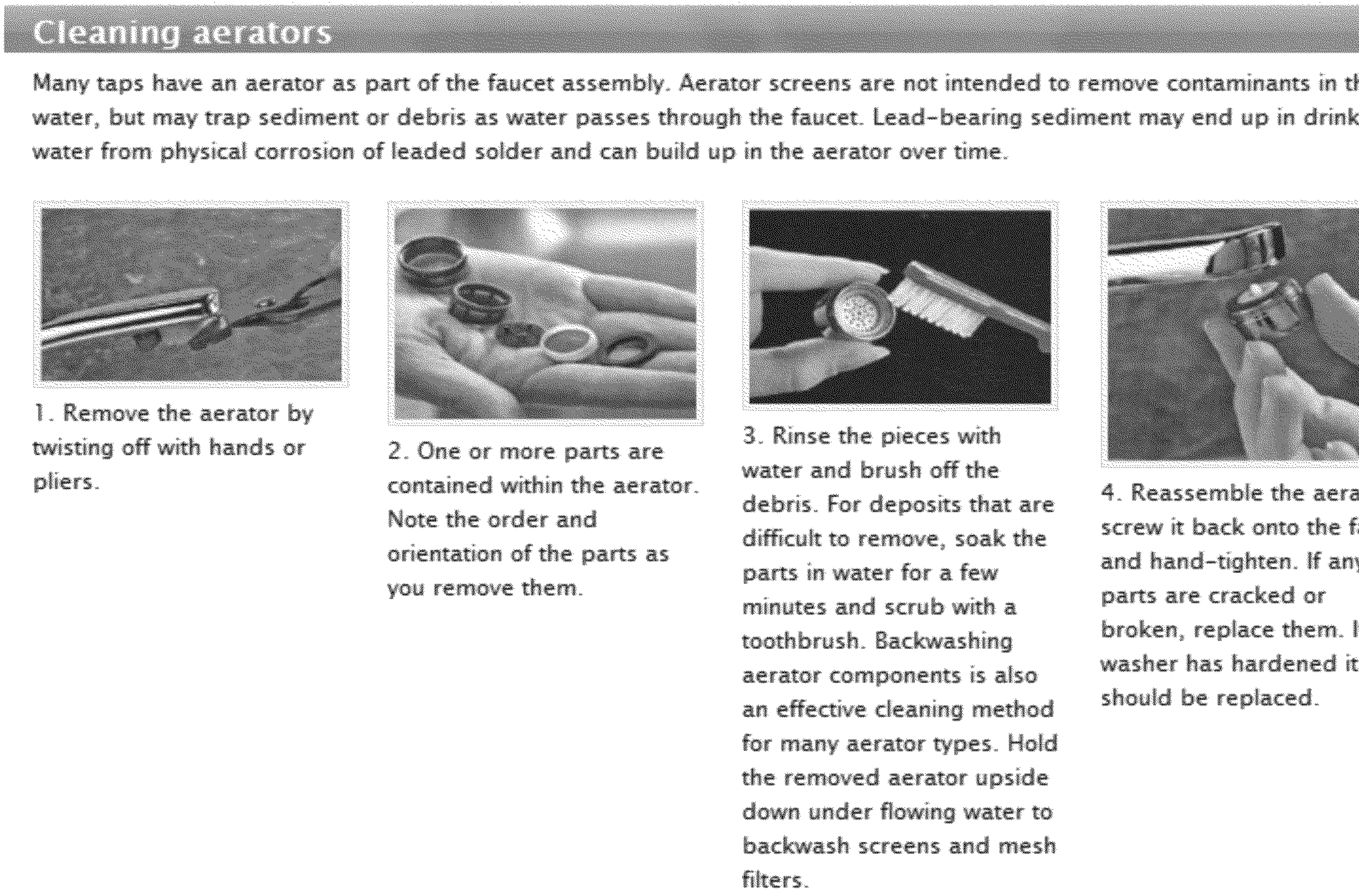
Lead service lines can be connected to the residential plumbing using solder and have a characteristic solder "bulb" at the end, a compression fitting, or other connector made of galvanized iron or brass/bronze.



Lead service lines often end just inside the front or side wall of the home, but may extend further into the building as shown, where the lead service line comes out of the basement floor to the water meter and then back into the floor, continuing further into the building.



If your home has a wate
meter, your water meter
may be in your home or
"meter pit" or "meter vau
as shown above.



Cleaning aerators

Many taps have an aerator as part of the faucet assembly. Aerator screens are not intended to remove contaminants in t
water, but may trap sediment or debris as water passes through the faucet. Lead-bearing sediment may end up in drink
water from physical corrosion of leaded solder and can build up in the aerator over time.

1. Remove the aerator by twisting off with hands or pliers.

2. One or more parts are contained within the aerator. Note the order and orientation of the parts as you remove them.

3. Rinse the pieces with water and brush off the debris. For deposits that are difficult to remove, soak the parts in water for a few minutes and scrub with a toothbrush. Backwashing aerator components is also an effective cleaning method for many aerator types. Hold the removed aerator upside down under flowing water to backwash screens and mesh filters.

4. Reassemble the aera
screw it back onto the f
and hand-tighten. If an
parts are cracked or
broken, replace them. I
washer has hardened it
should be replaced.

From: Citizen name / Ex. 6
Sent: Saturday, July 11, 2015 5:57 PM
To: deltoral.miguel@epa.gov; edwardsm@vt.edu
Subject: Flint Water Question from a Pregnant Flint Resident

Dear Dr. Edwards and Dr. Del Toral,

Thank you for the work you have already done in my city to protect families from water contaminant exposure. I am a Flint resident, pregnant with my first child, and therefore advised to drink a whopping 10-16 cups of water each day. I am writing to see if you can shed some light or point me to another source for answers regarding water testing and the safest option for staying hydrated.

If your wife or sister or friend were living in Flint and pregnant, what course of action would you recommend she take? Here is my situation:

- A little background: Prior to becoming pregnant, I installed a pur advanced water filter on our kitchen faucet and always use it when drinking from the tap, which I do frequently. (According to the pur website, the filter is said to filter out 70+ chemicals. Recently, I contacted the company to request more information on exactly what chemicals are filtered and up to what level, and am awaiting their reply.) When using the filter, the water is crystal clear, free of the river smell and without the slight yellow tinge that we sometimes have coming out of the tap (unlike in our bathroom sink which I use to brush my teeth...). I was compelled to purchase the filter because my legs began to swell after Flint changed to the river water, and after installing the filter this problem went away. I even tested the difference by drinking filtered water some days (consistently no swelling) and and unfiltered water others (consistent swelling) for a week or two. I understand the swelling to be the result of sodium chloride in our water which is corrosive enough to make GM stop using Flint water in their local plant (http://www.mlive.com/news/flint/index.ssf/2014/10/general_motors_wont_use_flint.html)

- Given your findings of high levels of lead in some residents' water, my husband strongly believes that I should cease drinking all Flint water and drink bottled water instead. However, I have read extensively about safety concerns of plastic-bottled water (chemists who work with plastics avoid drinking it) and this does not seem to be a safer option despite frequent bottled water drives organized by well-meaning activists across Flint.

- I would like to test our house's tap water with and without the kitchen filter using an independent lab, but my husband thinks this will be a futile effort because we have no reliable way of knowing if the results on one day will be consistent with results on other days, such as if the City of Flint were doing some special change to the water treatment procedure. Would testing multiple times across several weeks be sufficient to address this possibility? If so, how many times and at what interval would you recommend testing, and can you recommend a testing lab? If a high level of lead is discovered, who should we contact to determine where the lead is coming from as a next step?

- According to the consultant that Erin Brockovich sent to Flint earlier this year (http://www.mlive.com/news/flint/index.ssf/2015/02/tthm_how_worried_should_flint.html), total trihalomethanes (TTHM) in the water are dangerous to pregnant women through inhalation exposure during hot showers. (And pregnant women tend to appreciate long, hot showers because our backs are constantly aching!) At this point, the lead issues seem more frightening, though we are considering investing in a costly whole-house water filtration system to deal with both. How can we determine the relative risk to pregnant women for lead in the water vs. TTHMs? I suppose that could differ from house to house. What sort of whole-house filtration would you recommend?

- Are there any other considerations that you think I should keep in mind?

Even for those residents who are privileged to be educated and able to afford water filtration devices, the public water issues we are living with are confounding. The information we receive about our public water supply tends to be fragmented and coming from local public officials who have an interest in downplaying public concerns. In the meantime, it is very difficult to make truly informed decisions about our health.

Thank you in advance for any insights you can share and helping to give my baby a good start in life. I understand if you need to respond as a fellow resident of the world and as experts in general rather than as affiliates of the organizations in which you are employed.

Thank you much,

Citizen name / Ex. 6

Personal Address / Ex. 6

Personal Phone / Ex. 6

To: Hedman, Susan[hedman.susan@epa.gov]
From: Cassell, Peter
Sent: Tue 7/14/2015 8:38:34 PM
Subject: RE: Slightly revised responses to 2 follow-up questions re: Flint drinking water

Thanks - and Nonresponsive Discussion of Personal Matters / Ex. 6 [redacted]

Pete Cassell
Press Officer
U.S. Environmental Protection Agency

---

77 West Jackson Blvd (P-19J)
Chicago, IL 60604-3590
Office (312) 886-6234
Mobile Personal Phone / Ex. 6 [redacted]

From: Hedman, Susan
Sent: Tuesday, July 14, 2015 3:30 PM
To: Rowan, Anne
Cc: Hyde, Tinka; Kelley, Jeff; Cannon, Phillippa; Cassell, Peter
Subject: Slightly revised responses to 2 follow-up questions re: Flint drinking water

Q. Mr. Del Toral asserts that a city the size of Flint is required to use a corrosion control treatment such as phosphate in their drinking water. Is Mr. Del Toral correct?

Flint and other large drinking water systems are required to evaluate and optimize pipe corrosion control treatment to protect water from contaminants such as lead. When the City started sourcing drinking water from the Flint River in April 2014, the Michigan Department of Environmental Quality determined that Flint should follow the protocol for new systems -- which requires two new rounds of water sampling to determine whether corrosion control treatment is needed. The City has submitted sampling results for the six-month periods from July-December 2014, and from January-June 2015. MDEQ is currently analyzing the sampling data to determine whether corrosion control treatment is needed.

Q. Also, both Mr. Del Toral, and Marc Edwards, an expert on the issue at Virginia Tech, both say that the manner in which Flint conducts its tests is almost certain to minimize the risk and miss worst-case scenarios. What is the EPA's opinion regarding that?

Michigan complies with the Federal Safe Drinking Water Act's protocol which requires that the tap remain unused for at least 6 hours before taking a sample. EPA is currently revising the federal lead and copper rule to address several issues including sampling protocols.

In addition, EPA notes that the water samples taken from the Citizen name / Ex. 6 residence were atypical in two ways:

•□□□□□□□□ the tap had not been run for over three weeks before the samples were taken. Stagnation can cause higher lead levels, and

•□□□□□□□□ the home's long service line is configured in an unusual way.

From: Rowan, Anne
Sent: Tuesday, July 14, 2015 2:29 PM
To: Hedman, Susan
Cc: Hyde, Tinka; Kelley, Jeff; Cannon, Phillippa; Cassell, Peter
Subject: For Review: Draft responses to 2 follow-up questions re: Flint drinking water - deadline today
Importance: High

Susan, attached below are WD- approved proposed responses to the follow-up questions from Curt Guyette, the ACLU's investigative reporter. Please advise. Thanks.

Q. Mr. Del Toral asserts that a city the size of Flint is required to use a corrosion control treatment such as phosphate in their drinking water. Is Mr. Del Toral correct?

Flint and other large drinking water systems are required to evaluate and optimize corrosion control treatment of pipes to protect water from contaminants such as lead. Because the City started sourcing drinking water from the Flint River in April 2014, the Michigan Department of Environmental Quality determined that Flint should follow the protocol for new systems which requires two new rounds of water sampling. The City has submitted sampling results for the six-month periods from July-December 2014, and from January-June 2015. MDEQ is currently analyzing the sampling data to determine whether corrosion control treatment is needed.

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•□□□□□□□□ the home's long service line is configured in an unusual way.

To: Bair, Rita[bair.rita@epa.gov]
Cc: Porter, Andrea[porter.andrea@epa.gov]; Crooks, Jennifer[crooks.jennifer@epa.gov]; Harris, Kimberly[harris.kimberly@epa.gov]; Deltoral, Miguel[deltoral.miguel@epa.gov]
From: Hyde, Tinka
Sent: Tue 7/14/2015 8:47:45 PM
Subject: RE: Flint Water Question from a Pregnant Flint Resident

Thanks. Overall this looks good. What is the answer to a potential follow-up question related to how to draw a sample to test for lead contributions from other sources? I know that gets complicated and may require knowledge of the length of the Pb service line or sequential sampling that can get rather expensive. Do we have a protocol available for residents on this?

From: Bair, Rita
Sent: Tuesday, July 14, 2015 3:34 PM
To: Hyde, Tinka
Cc: Porter, Andrea; Crooks, Jennifer; Harris, Kimberly; Deltoral, Miguel
Subject: FW: Flint Water Question from a Pregnant Flint Resident

Tinka, Below is the re-drafted email response to the citizen inquiry. If it is ok, I can send it out myself as written. Otherwise, I can have Miguel re-work it when he gets back.

Ms. **Citizen name / Ex. 6**

We are responding to your email of July 11, 2015 to Miguel Del Toral. He is out of the office today, but has provided the following information to your questions. Overall, he agrees with Marc's responses on the water filter. Filters that are certified to remove lead are typically designed to remove 99 percent of the lead. They are also designed with additional capacity as a safety measure, but you should still change the filter in accordance with the manufacturer's instructions. If you identify elevated lead levels from other taps that do not have water filters, we suggest either adding a filter to those, such as the bathroom tap, or only using the filtered tap water for consumption.

If you are still interested in having your water tested you should use a laboratory that has been certified by the State for drinking water analyses (a list is available from the following link: http://www.michigan.gov/deq/0,4561,7-135-3307_4131_4156-36940--,00.html. Please note that a first-draw sample, regardless of pre-flushing, is best for identifying lead that comes from the faucet and other in-home piping or fittings close to the faucet. First-draw sampling does not give a good indication of the lead contribution from sources further from the faucet (i.e. lead service line, leaded brass meter, etc.). Information for residents about first-draw sampling instructions can be found on the last page of the 2006 memo on aerators and LCR sampling at the following link: http://www.epa.gov/ogwdw/lcrmr/pdfs/memo_tapsamples-aerators_10202006.pdf. In addition, below are two graphics from our Region 5 website with information about how to identify if you have a lead service line coming into your home and for faucets that do not have filters on them, how to clean the aerators.

Regarding your TTHM question, EPA has considered developmental and reproductive risks from multiple intake routes of exposure (e.g., ingestion, inhalation, and dermal) in our 2006 Disinfectants and Disinfection Byproducts (DBPR) rule. Some studies did suggest associations between TTHM exposure and various adverse reproductive and development health effects. However, studies available overall showed inconsistent results. As such, our Agency could not conclude whether exposure to TTHMs could cause adverse reproductive/developmental health effects. However, we did note in our findings that there was the potential for concern.

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We hope this information is helpful to you.

Rita D. Bair

Section 2 Chief

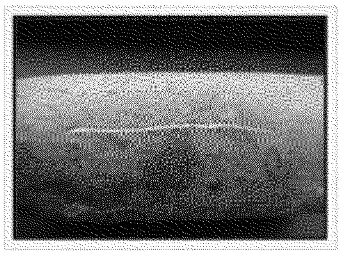
Ground Water and Drinking Water Branch

USEPA-Region 5

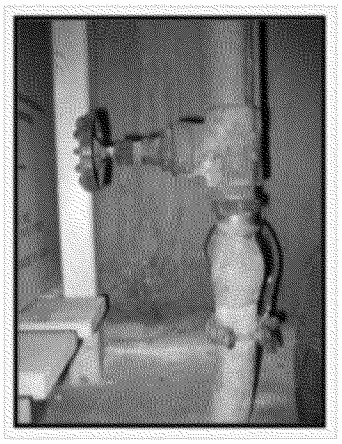
phone: (312) 886-2406

fax: 312-692-2132

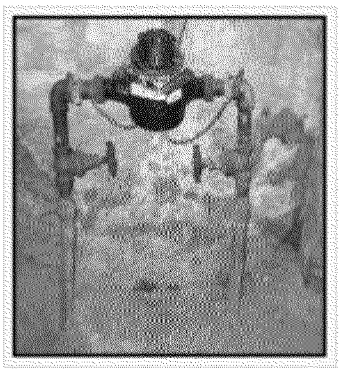
What do lead service lines look like?



Lead service lines are generally a dull gray color and are very soft. You can identify them easily by carefully scratching with a key. If the pipe is made of lead, the area you've scratched will turn a bright silver color. Do not use a knife or other sharp instrument and take care not to puncture a hole in the pipe.



Lead service lines can be connected to the residential plumbing using solder and have a characteristic solder "bulb" at the end, a compression fitting, or other connector made of galvanized iron or brass/bronze.



Lead service lines often end just inside the front or side wall of the home, but may extend further into the building as shown, where the lead service line comes out of the basement floor to the water meter and then back into the floor, continuing further into the building.

If your home has a wate
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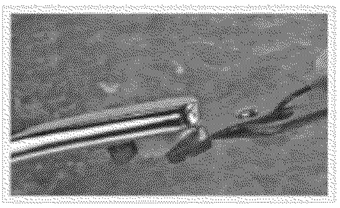
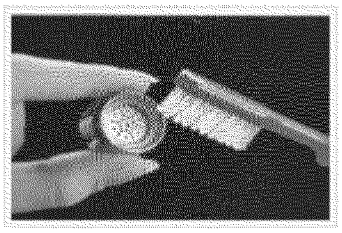
Cleaning aerators

Many taps have an aerator as part of the faucet assembly. Aerator screens are not intended to remove contaminants in th
water, but may trap sediment or debris as water passes through the faucet. Lead-bearing sediment may end up in drink
water from physical corrosion of leaded solder and can build up in the aerator over time.



1. Remove the aerator by twisting off with hands or pliers.

2. One or more parts are contained within the aerator. Note the order and orientation of the parts as you remove them.



3. Rinse the pieces with water and brush off the debris. For deposits that are difficult to remove, soak the parts in water for a few minutes and scrub with a toothbrush. Backwashing aerator components is also an effective cleaning method for many aerator types. Hold the removed aerator upside down under flowing water to backwash screens and mesh filters.

4. Reassemble the aera
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From: Citizen name / Ex. 6
Sent: Saturday, July 11, 2015 5:57 PM
To: deltoral.miguel@epa.gov; edwardsm@vt.edu
Subject: Flint Water Question from a Pregnant Flint Resident

Dear Dr. Edwards and Dr. Del Toral,

Thank you for the work you have already done in my city to protect families from water contaminant exposure. I am a Flint resident, pregnant with my first child, and therefore advised to drink a whopping 10-16 cups of water each day. I am writing to see if you can shed some light or point me to another source for answers regarding water testing and the safest option for staying hydrated.

If your wife or sister or friend were living in Flint and pregnant, what course of action would you recommend she take? Here is my situation:

- A little background: Prior to becoming pregnant, I installed a pur advanced water filter on our kitchen faucet and always use it when drinking from the tap, which I do frequently. (According to the pur website, the filter is said to filter out 70+ chemicals. Recently, I contacted the company to request more information on exactly what chemicals are filtered and up to what level, and am awaiting their reply.) When using the filter, the water is crystal clear, free of the river smell and without the slight yellow tinge that we sometimes have coming out of the tap (unlike in our bathroom sink which I use to brush my teeth...). I was compelled to purchase the filter because my legs began to swell after Flint changed to the river water, and after installing the filter this problem went away. I even tested the difference by drinking filtered water some days (consistently no swelling) and and unfiltered water others (consistent swelling) for a week or two. I understand the swelling to be the result of sodium chloride in our water which is corrosive enough to make GM stop using Flint water in their local plant (http://www.mlive.com/news/flint/index.ssf/2014/10/general_motors_wont_use_flint.html)

- Given your findings of high levels of lead in some residents' water, my husband strongly believes that I should cease drinking all Flint water and drink bottled water instead. However, I have read extensively about safety concerns of plastic-bottled water (chemists who work with plastics avoid drinking it) and this does not seem to be a safer option despite frequent bottled water drives organized by well-meaning activists across Flint.

- I would like to test our house's tap water with and without the kitchen filter using an independent lab, but my husband thinks this will be a futile effort because we have no reliable way of knowing if the results on one day will be consistent with results on other days, such as if the City of Flint were doing some special change to the water treatment procedure. Would testing multiple times across several weeks be sufficient to address this possibility? If so, how many times and at what interval would you recommend testing, and can you recommend a testing lab? If a high level of lead is discovered, who should we contact to determine where the lead is coming from as a next step?

- According to the consultant that Erin Brockovich sent to Flint earlier this year (http://www.mlive.com/news/flint/index.ssf/2015/02/tthm_how_worried_should_flint.html), total trihalomethanes (TTHM) in the water are dangerous to pregnant women through inhalation exposure during hot showers. (And pregnant women tend to appreciate long, hot showers because our backs are constantly aching!) At this point, the lead issues seem more frightening, though we are considering investing in a costly whole-house water filtration system to deal with both. How can we determine the relative risk to pregnant women for lead in the water vs. TTHMs? I suppose that could differ from house to house. What sort of whole-house filtration would you recommend?

- Are there any other considerations that you think I should keep in mind?

Even for those residents who are privileged to be educated and able to afford water filtration devices, the public water issues we are living with are confounding. The information we receive about our public water supply tends to be fragmented and coming from local public officials who have an interest in downplaying public concerns. In the meantime, it is very difficult to make truly informed decisions about our health.

Thank you in advance for any insights you can share and helping to give my baby a good start in life. I understand if you need to respond as a fellow resident of the world and as experts in general rather than as affiliates of the organizations in which you are employed.

Thank you much,

Citizen name / Ex. 6

Personal Address / Ex. 6

Personal Phone / Ex. 6

To: Hyde, Tinka[hyde.tinka@epa.gov]
Cc: Porter, Andrea[porter.andrea@epa.gov]; Crooks, Jennifer[crooks.jennifer@epa.gov]; Harris, Kimberly[harris.kimberly@epa.gov]; Deltoral, Miguel[deltoral.miguel@epa.gov]
From: Bair, Rita
Sent: Tue 7/14/2015 8:54:35 PM
Subject: RE: Flint Water Question from a Pregnant Flint Resident

Andrea told me we do not have a protocol for this other than the Chicago study protocol which I did not think we wanted to send. I understood Miguel's response to say that to find those other sources would require sequential sampling which was expensive and not necessary since they already have the water filter.

From: Hyde, Tinka
Sent: Tuesday, July 14, 2015 3:48 PM
To: Bair, Rita
Cc: Porter, Andrea; Crooks, Jennifer; Harris, Kimberly; Deltoral, Miguel
Subject: RE: Flint Water Question from a Pregnant Flint Resident

Thanks. Overall this looks good. What is the answer to a potential follow-up question related to how to draw a sample to test for lead contributions from other sources? I know that gets complicated and may require knowledge of the length of the Pb service line or sequential sampling that can get rather expensive. Do we have a protocol available for residents on this?

From: Bair, Rita
Sent: Tuesday, July 14, 2015 3:34 PM
To: Hyde, Tinka
Cc: Porter, Andrea; Crooks, Jennifer; Harris, Kimberly; Deltoral, Miguel
Subject: FW: Flint Water Question from a Pregnant Flint Resident

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Ms. **Citizen name / Ex. 6**

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Marc's responses on the water filter. Filters that are certified to remove lead are typically designed to remove 99 percent of the lead. They are also designed with additional capacity as a safety measure, but you should still change the filter in accordance with the manufacturer's instructions. If you identify elevated lead levels from other taps that do not have water filters, we suggest either adding a filter to those, such as the bathroom tap, or only using the filtered tap water for consumption.

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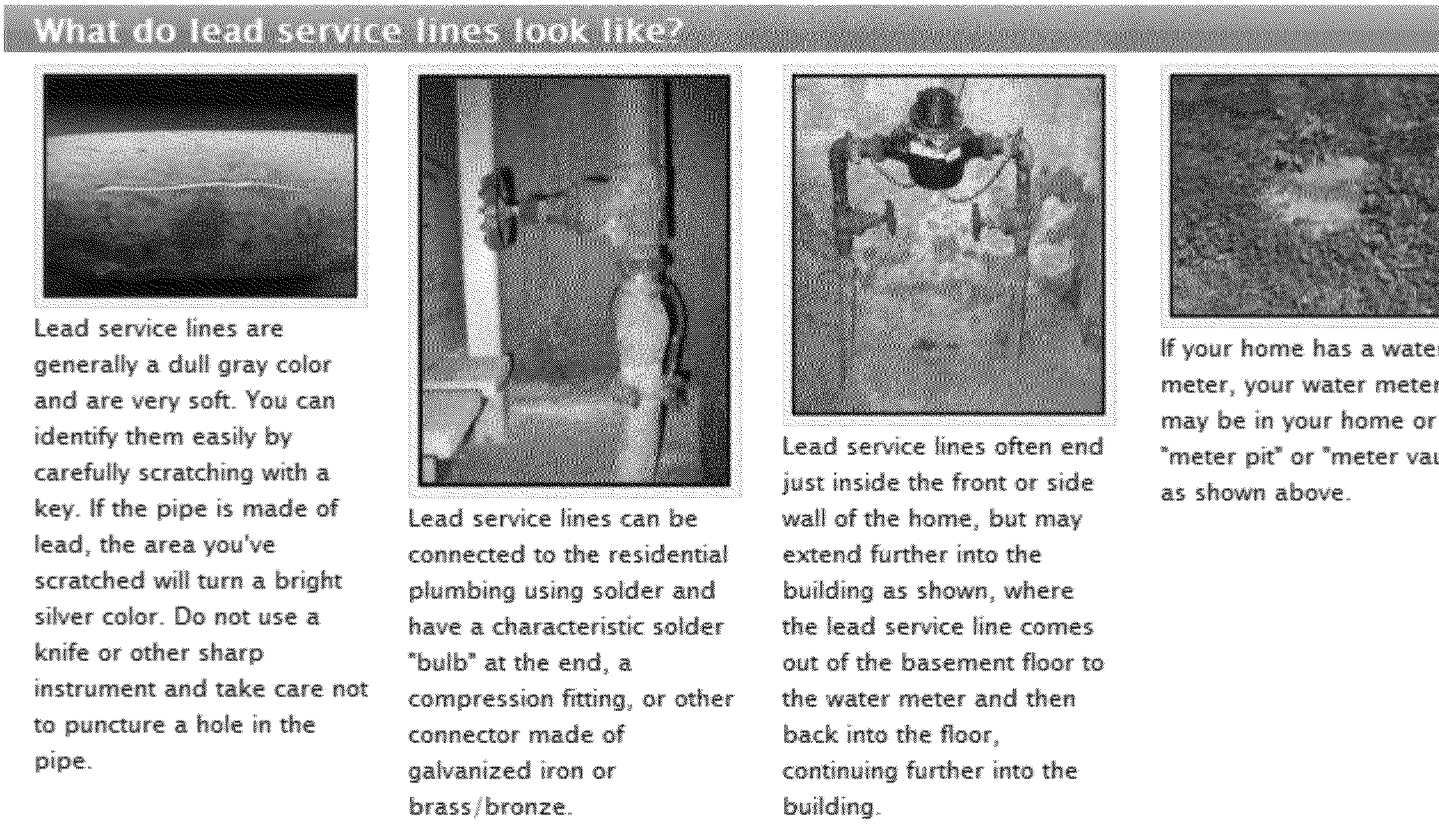
Ground Water and Drinking Water Branch

USEPA-Region 5

phone: (312) 886-2406

fax: 312-692-2132



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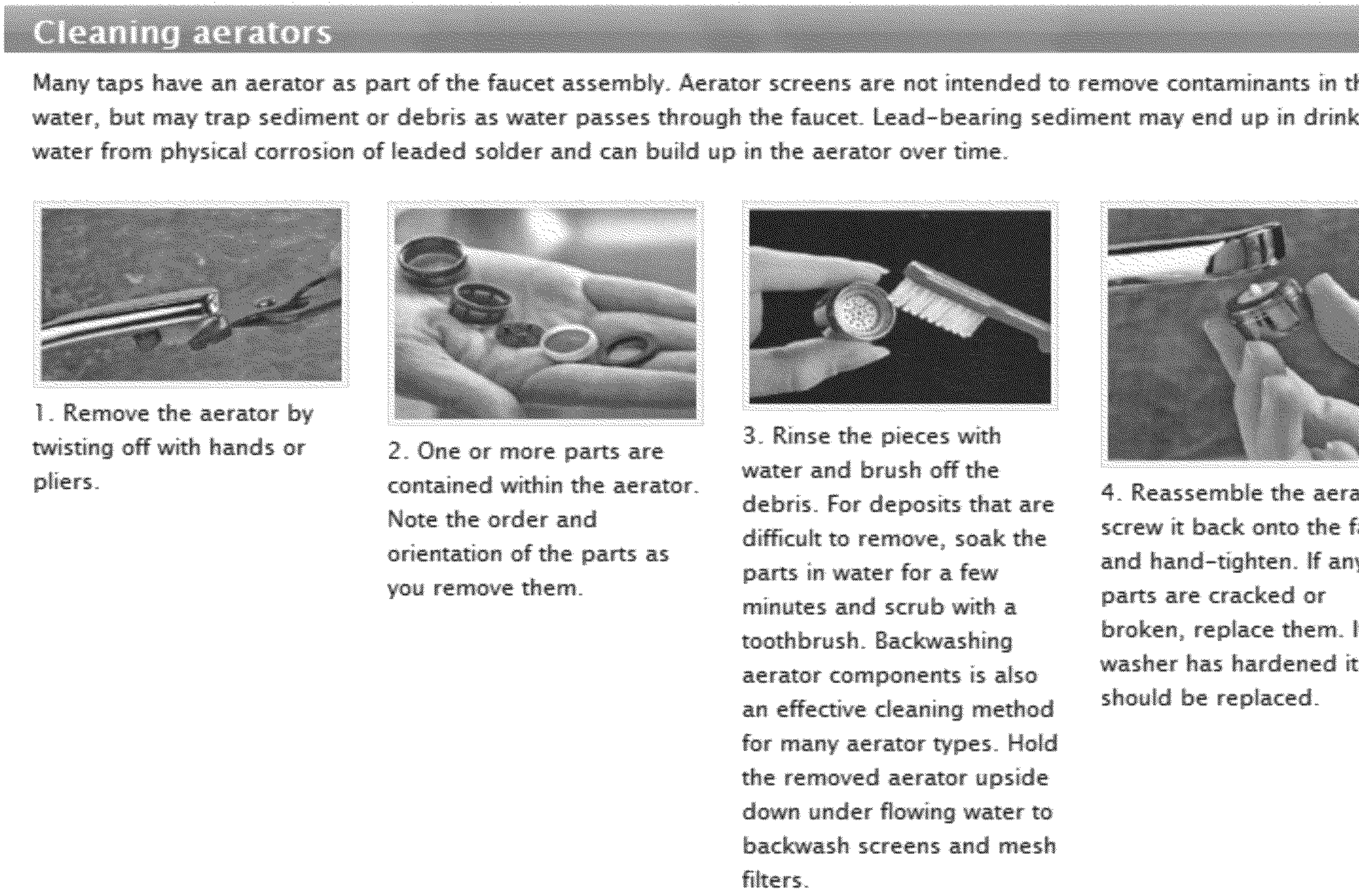

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Personal Phone / Ex. 6

To: Cassell, Peter[cassell.peter@epa.gov]
From: Hedman, Susan
Sent: Tue 7/14/2015 8:57:54 PM
Subject: RE: Slightly revised responses to 2 follow-up questions re: Flint drinking water

Thanks!

From: Cassell, Peter
Sent: Tuesday, July 14, 2015 3:39 PM
To: Hedman, Susan
Subject: RE: Slightly revised responses to 2 follow-up questions re: Flint drinking water

Thanks - and happy belated birthday!

Pete Cassell
Press Officer
U.S. Environmental Protection Agency

77 West Jackson Blvd (P-19J)
Chicago, IL 60604-3590
Office (312) 886-6234
Mobile Personal Phone / Ex. 6

From: Hedman, Susan
Sent: Tuesday, July 14, 2015 3:30 PM
To: Rowan, Anne
Cc: Hyde, Tinka; Kelley, Jeff; Cannon, Phillippa; Cassell, Peter
Subject: Slightly revised responses to 2 follow-up questions re: Flint drinking water

Q. Mr. Del Toral asserts that a city the size of Flint is required to use a corrosion control treatment such as phosphate in their drinking water. Is Mr. Del Toral correct?

Flint and other large drinking water systems are required to evaluate and optimize pipe corrosion control treatment to protect water from contaminants such as lead. When the City started sourcing drinking water from the Flint River in April 2014, the Michigan Department of Environmental Quality determined that Flint should follow the protocol for new systems -- which requires two new rounds of water sampling to determine whether corrosion control treatment is needed. The City has submitted sampling results for the six-month periods from July-December 2014, and from January-June 2015. MDEQ is currently analyzing the sampling data to determine whether corrosion control treatment is needed.

Q. Also, both Mr. Del Toral, and Marc Edwards, an expert on the issue at Virginia Tech, both say that the manner in which Flint conducts its tests is almost certain to minimize the risk and miss worst-case scenarios. What is the EPA's opinion regarding that?

Michigan complies with the Federal Safe Drinking Water Act's protocol which requires that the tap remain unused for at least 6 hours before taking a sample. EPA is currently revising the federal lead and copper rule to address several issues including sampling protocols.

In addition, EPA notes that the water samples taken from the Walters' residence were atypical in two ways:

•□□□□□□ the tap had not been run for over three weeks before the samples were taken. Stagnation can cause higher lead levels, and

•□□□□□□ the home's long service line is configured in an unusual way.

From: Rowan, Anne
Sent: Tuesday, July 14, 2015 2:29 PM
To: Hedman, Susan
Cc: Hyde, Tinka; Kelley, Jeff; Cannon, Phillippa; Cassell, Peter
Subject: For Review: Draft responses to 2 follow-up questions re: Flint drinking water -

deadline today
Importance: High

Susan, attached below are WD- approved proposed responses to the follow-up questions from Curt Guyette, the ACLU's investigative reporter. Please advise. Thanks.

Q. Mr. Del Toral asserts that a city the size of Flint is required to use a corrosion control treatment such as phosphate in their drinking water. Is Mr. Del Toral correct?

Flint and other large drinking water systems are required to evaluate and optimize corrosion control treatment of pipes to protect water from contaminants such as lead. Because the City started sourcing drinking water from the Flint River in April 2014, the Michigan Department of Environmental Quality determined that Flint should follow the protocol for new systems which requires two new rounds of water sampling. The City has submitted sampling results for the six-month periods from July-December 2014, and from January-June 2015. MDEQ is currently analyzing the sampling data to determine whether corrosion control treatment is needed.

Q. Also, both Mr. Del Toral, and Marc Edwards, an expert on the issue at Virginia Tech, both say that the manner in which Flint conducts its tests is almost certain to minimize the risk and miss worst-case scenarios. What is the EPA's opinion regarding that?

Michigan complies with the Federal Safe Drinking Water Act's protocol which requires that the tap remain unused for at least 6 hours before taking a sample. EPA is currently revising the federal lead and copper rule to address several issues including sampling protocols.

In addition, EPA notes that the water samples taken from the Walters' residence were atypical in two ways:

- the tap had not been run for over three weeks before the samples were taken. Stagnation can be expected to cause higher lead levels, and

- the home’s long service line is configured in an unusual way.

To: Citizen name / Ex. 6
Cc: Porter, Andrea[porter.andrea@epa.gov]; Crooks, Jennifer[crooks.jennifer@epa.gov]; Harris, Kimberly[harris.kimberly@epa.gov]; Deltoral, Miguel[deltoral.miguel@epa.gov]
From: Bair, Rita
Sent: Tue 7/14/2015 9:22:21 PM
Subject: RE: Flint Water Question from a Pregnant Flint Resident

We are responding to your email of July 11, 2015 to Miguel Del Toral. He is out of the office today, but has provided the following information to your lead questions. Overall, he agrees with Marc's responses on the water filter. Filters that are certified to remove lead are typically designed to remove 99 percent of the lead. They are also designed with additional capacity as a safety measure, but you should still change the filter in accordance with the manufacturer's instructions. If you identify elevated lead levels from other taps that do not have water filters, we suggest either adding a filter to those, such as the bathroom tap, or only using the filtered tap water for consumption.

If you are still interested in having your water tested you should use a laboratory that has been certified by the State for drinking water analyses (a list is available from the following link: http://www.michigan.gov/deq/0,4561,7-135-3307_4131_4156-36940--,00.html. Please note that a first-draw sample, regardless of pre-flushing, is best for identifying lead that comes from the faucet and other in-home piping or fittings close to the faucet. First-draw sampling does not give a good indication of the lead contribution from sources further from the faucet (i.e. lead service line, leaded brass meter, etc.). Information for residents about first-draw sampling instructions can be found on the last page of the 2006 memo on aerators and LCR sampling at the following link: http://www.epa.gov/ogwdw/lcrmr/pdfs/memo_tapsamples-aerators_10202006.pdf. In addition, below are two graphics from our Region 5 website with information about how to identify if you have a lead service line coming into your home and for faucets that do not have filters on them, how to clean the aerators.

Regarding your TTHM question, EPA has considered developmental and reproductive risks from multiple intake routes of exposure (e.g., ingestion, inhalation, and dermal) in our 2006 Disinfectants and Disinfection Byproducts (DBPR) rule. Some studies did suggest associations between TTHM exposure and various adverse reproductive and development health effects. However, studies available overall showed inconsistent results. As such, our Agency could not conclude whether exposure to TTHMs could cause adverse reproductive/developmental health effects. However, we did note in our findings that there was the potential for concern.

Currently, we are in the process of re-evaluating our DBPR rules and considering new toxicological data regarding reproductive and developmental health effects. Until our evaluation is complete, pregnant women can elect to take additional precautionary measures such as taking shorter showers, venting the room while showering/bathing, and not ingesting water with high TTHM concentrations.

We hope this information is helpful to you.

Rita D. Bair

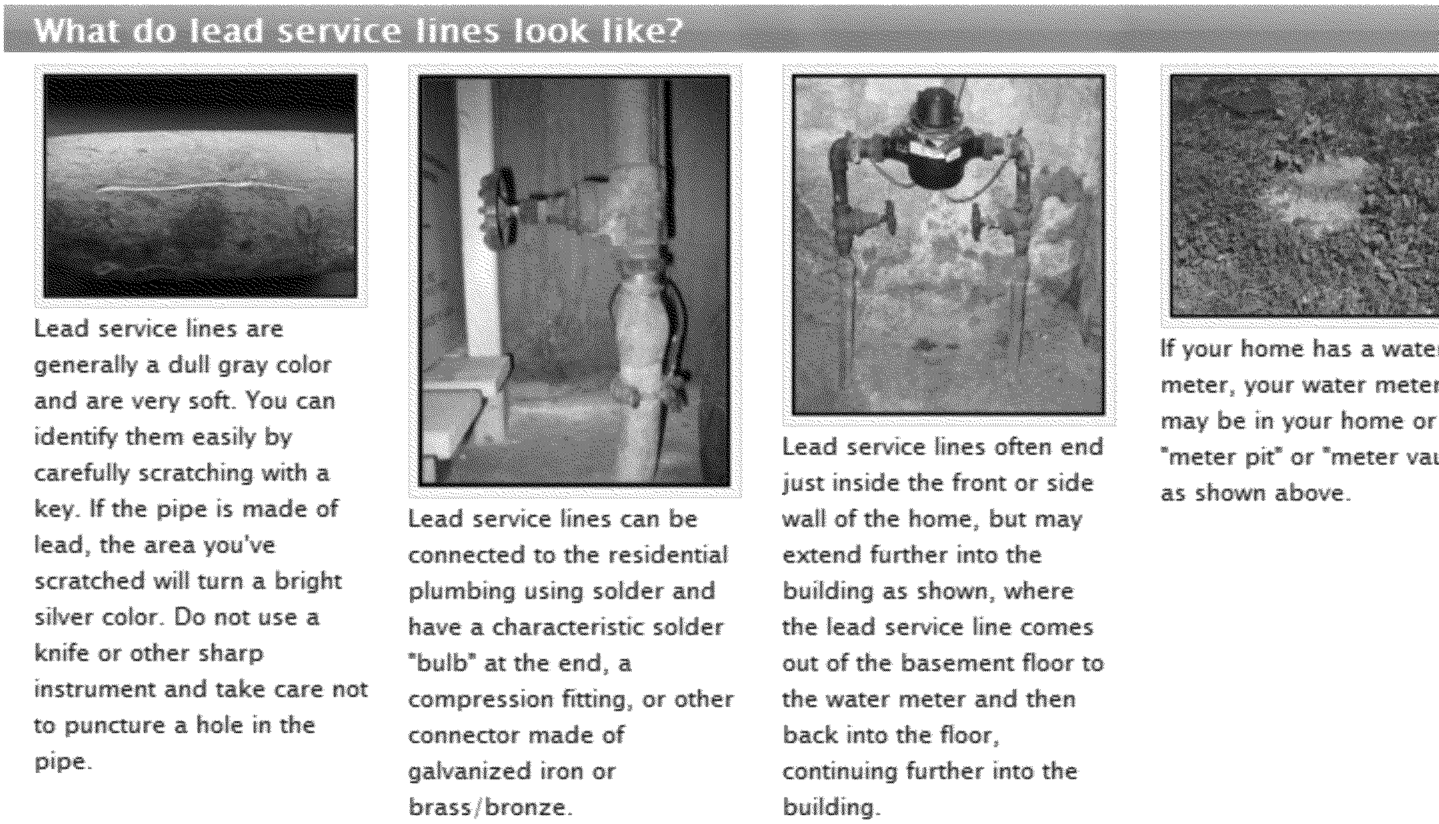
Section 2 Chief

Ground Water and Drinking Water Branch

USEPA-Region 5

phone: (312) 886-2406

fax: 312-692-2132



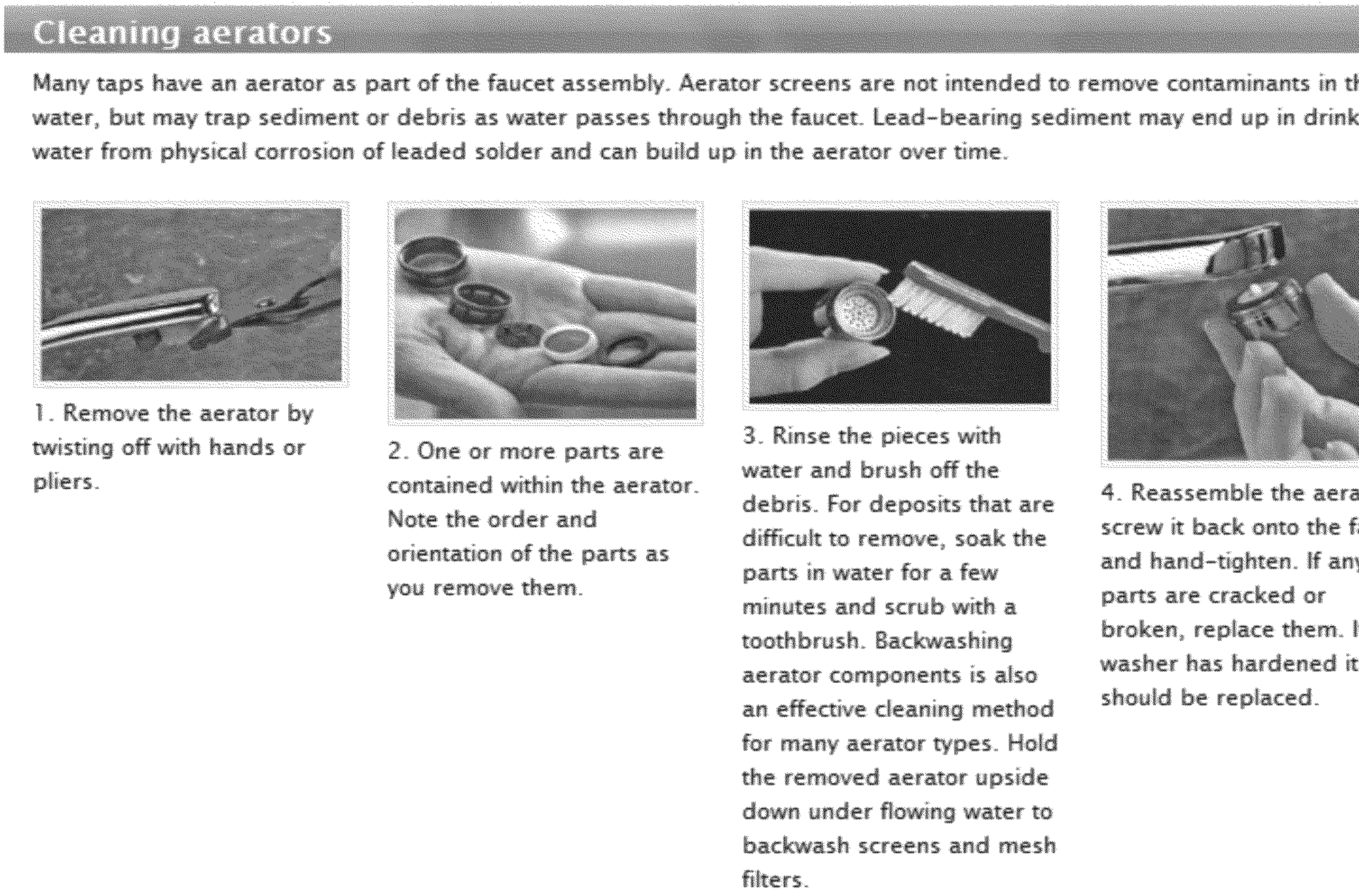
What do lead service lines look like?

Lead service lines are generally a dull gray color and are very soft. You can identify them easily by carefully scratching with a key. If the pipe is made of lead, the area you've scratched will turn a bright silver color. Do not use a knife or other sharp instrument and take care not to puncture a hole in the pipe.

Lead service lines can be connected to the residential plumbing using solder and have a characteristic solder "bulb" at the end, a compression fitting, or other connector made of galvanized iron or brass/bronze.

Lead service lines often end just inside the front or side wall of the home, but may extend further into the building as shown, where the lead service line comes out of the basement floor to the water meter and then back into the floor, continuing further into the building.

If your home has a wate
meter, your water meter
may be in your home or
"meter pit" or "meter vau
as shown above.



Cleaning aerators

Many taps have an aerator as part of the faucet assembly. Aerator screens are not intended to remove contaminants in th water, but may trap sediment or debris as water passes through the faucet. Lead-bearing sediment may end up in drink water from physical corrosion of leaded solder and can build up in the aerator over time.

1. Remove the aerator by twisting off with hands or pliers.

2. One or more parts are contained within the aerator. Note the order and orientation of the parts as you remove them.

3. Rinse the pieces with water and brush off the debris. For deposits that are difficult to remove, soak the parts in water for a few minutes and scrub with a toothbrush. Backwashing aerator components is also an effective cleaning method for many aerator types. Hold the removed aerator upside down under flowing water to backwash screens and mesh filters.

4. Reassemble the aera screw it back onto the f and hand-tighten. If any parts are cracked or broken, replace them. I washer has hardened it should be replaced.

From: Citizen name / Ex. 6
Sent: Saturday, July 11, 2015 5:57 PM
To: deltoral.miguel@epa.gov; edwardsm@vt.edu
Subject: Flint Water Question from a Pregnant Flint Resident

Dear Dr. Edwards and Dr. Del Toral,

Thank you for the work you have already done in my city to protect families from water contaminant exposure. I am a Flint resident, pregnant with my first child, and therefore advised to drink a whopping 10-16 cups of water each day. I am writing to see if you can shed some light or point me to another source for answers regarding water testing and the safest option for staying hydrated.

If your wife or sister or friend were living in Flint and pregnant, what course of action would you recommend she take? Here is my situation:

- A little background: Prior to becoming pregnant, I installed a pur advanced water filter on our kitchen faucet and always use it when drinking from the tap, which I do frequently. (According to the pur website, the filter is said to filter out 70+ chemicals. Recently, I contacted the company to request more information on exactly what chemicals are filtered and up to what level, and am awaiting their reply.) When using the filter, the water is crystal clear, free of the river smell and without the slight yellow tinge that we sometimes have coming out of the tap (unlike in our bathroom sink which I use to brush my teeth...). I was compelled to purchase the filter because my legs began to swell after Flint changed to the river water, and after installing the filter this problem went away. I even tested the difference by drinking filtered water some days (consistently no swelling) and and unfiltered water others (consistent swelling) for a week or two. I understand the swelling to be the result of sodium chloride in our water which is corrosive enough to make GM stop using Flint water in their local plant (http://www.mlive.com/news/flint/index.ssf/2014/10/general_motors_wont_use_flint.html)
- Given your findings of high levels of lead in some residents' water, my husband strongly believes that I should cease drinking all Flint water and drink bottled water instead. However, I have read extensively about safety concerns of plastic-bottled water (chemists who work with plastics avoid drinking it) and this does not seem to be a safer option despite frequent bottled water drives organized by well-meaning activists across Flint.
- I would like to test our house's tap water with and without the kitchen filter using an independent lab, but my husband thinks this will be a futile effort because we have no reliable way of knowing if the results on one day will be consistent with results on other days, such as if the City of Flint were doing some special change to the water treatment procedure. Would testing multiple times across several weeks be sufficient to address this possibility? If so, how many times and at what interval would you recommend testing, and can you recommend a testing lab? If a high level of lead is discovered, who should we contact to determine where the lead is coming from as a next step?
- According to the consultant that Erin Brockovich sent to Flint earlier this year (http://www.mlive.com/news/flint/index.ssf/2015/02/tthm_how_worried_should_flint.html), total trihalomethanes (TTHM) in the water are dangerous to pregnant women through inhalation exposure during hot showers. (And pregnant women tend to appreciate long, hot showers because our backs are constantly aching!) At this point, the lead issues seem more

frightening, though we are considering investing in a costly whole-house water filtration system to deal with both. How can we determine the relative risk to pregnant women for lead in the water vs. TTHMs? I suppose that could differ from house to house. What sort of whole-house filtration would you recommend?

- Are there any other considerations that you think I should keep in mind?

Even for those residents who are privileged to be educated and able to afford water filtration devices, the public water issues we are living with are confounding. The information we receive about our public water supply tends to be fragmented and coming from local public officials who have an interest in downplaying public concerns. In the meantime, it is very difficult to make truly informed decisions about our health.

Thank you in advance for any insights you can share and helping to give my baby a good start in life. I understand if you need to respond as a fellow resident of the world and as experts in general rather than as affiliates of the organizations in which you are employed.

Thank you much,

Citizen name / Ex. 6

Personal Address / Ex. 6

Personal Phone / Ex. 6

To: Kuefler, Janet[kuefler.janet@epa.gov]; Crooks, Jennifer[crooks.jennifer@epa.gov]; Bair, Rita[bair.rita@epa.gov]; Damato, Nicholas[damato.nicholas@epa.gov]; Porter, Andrea[porter.andrea@epa.gov]; Shoven, Heather[shoven.heather@epa.gov]
Cc: Moriarty, Edward[Moriarty.EdwardJ@epa.gov]
From: Deltoral, Miguel
Sent: Wed 7/15/2015 11:24:26 AM
Subject: Re: Flint Discussion

I very much disagree with not issuing a TT violation here. If you open this door for Flint (i.e., new source = new system), other systems elsewhere inside/outside R5 are going to want the same treatment. I am copying Ed Moriarty on this as I think we need an OGWDW/OGC review if we are considering NOT issuing a TT violation for failure to install/maintain OCCT as it will set a very bad precedent and could cause problems in other R5 states and regions.

The advanced notification and approval requirements in the LCR for long-term treatment changes and new sources were intended to make systems think about these source water and treatment transitions carefully so that they plan the transition accordingly and don't increase lead/copper levels.

I know it's a tough situation, and I agree that our primary focus should be on moving forward, but at a minimum we need to have a discussion with OGWDW and OGC on this.

Miguel A. Del Toral
Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

From: Kuefler, Janet
Sent: Monday, July 13, 2015 04:59 PM
To: Crooks, Jennifer; Bair, Rita; Damato, Nicholas; Deltoral, Miguel; Porter, Andrea; Shoven, Heather
Subject: RE: Flint Discussion

I agree with Jen's last sentence. I think focusing on what the system and local health department, or TSC-Cincy experts or CDC can do in the short term to assess the extent of the issue and offer remediation options that can be quickly implemented, if needed, is a sound approach.

I am not certain of the regulatory applicability related to previous consecutive systems, which can come to agreement with the parent system about who does what, and how this scenario applies to the former consecutive system for things like installation and maintenance of corrosion control (since the installation was not done by the former consecutive system.) Can we ask HQ if they know of other systems like this, or maybe this has been done already. I am still catching up on email.

Thanks,

Janet Kuefler
Ground Water and Drinking Water Branch
State Programs Team Leader

United States Environmental Protection Agency, Region 5
77 West Jackson Blvd. (WG-15J)
Chicago, Illinois 60604

(312) 886-0123
kuefler.janet@epa.gov

From: Crooks, Jennifer
Sent: Thursday, July 09, 2015 3:45 PM
To: Bair, Rita; Damato, Nicholas; Deltoral, Miguel; Porter, Andrea; Kuefler, Janet; Shoven, Heather
Subject: RE: Flint Discussion

Rita—you asked at our July 1 meeting that we provide you with any comments related to your write-up to summarize this situation with Flint, or from our meeting.

I had a discussion with Miguel earlier this week, and it seems more apparent that Flint may have violated the LCR by not maintaining corrosion control after being optimized back in the early 1990's (since they were a customer of Detroit). MDEQ did not tell Flint to maintain corrosion control; instead, they treated the change in source water as a new system. I'll bet that the State will take this personally since they are responsible for the City of Flint's actions; which isn't a bad thing, but they may get VERY defensive. We can get into the weeds and explain in detail the intent of the rule and our interpretation of the rule and why the State must issue a TT violation, but in the end; the City, the State and we must move forward TOGETHER to correct this problem. We have resources in Mike Schock and Darren Lytle and Mike Wright; and we want to work with the State and the City to address ALL of the contaminant issues going on in Flint; bacti, TTHMs, Legionella, lead—from a wholistic approach to get some form of corrosion control working that doesn't minimize treatment for bacti or TTHMs. It doesn't make sense to discuss with the State what happened in the past; we need to move forward and work with the State as our partner; as the State sees the lead levels climbing, I don't see the benefit in rubbing their nose in the fact that we're right, and they're wrong.

If the State/City agree to issue public education on how citizens must properly flush their taps, I'm wondering what the benefit would be to force the State to issue a TT violation to Flint.

Regarding the State's protocol of pre-flushing, Miguel said earlier this week on the phone with me that pre-flushing didn't really make that much difference in the lead levels when the City was using Detroit water, since there was scale existing on the inside of the lead pipes. Now that the scale appears to be disappearing, the lead levels are starting to rise even with pre-flushing being conducted prior to sampling. Yes, the levels would probably be higher without the pre-flushing, but the City may exceed the Action Level even with the pre-flushing. Maybe the issue of the State's use of pre-flushing is moot at this point; perhaps we need to focus our energy on getting the State and City to accept our offer of Darren and Mike's participation in a wholistic approach to starting corrosion control and implementing public education for lead.

Jennifer

From: Bair, Rita
Sent: Wednesday, July 01, 2015 8:32 AM
To: Damato, Nicholas; Crooks, Jennifer; Deltoral, Miguel; Porter, Andrea; Kuefler, Janet; Shoven, Heather
Subject: RE: Flint Discussion

I have been trying to wrap by brain around all the Flint issues and developed the attached summary that I thought I'd share for the meeting. Our objective for the meeting is to discuss the status of Flint, what are all the current issues are, and to all agree on next steps and messaging. If you have other objectives for the meeting please bring those up first thing at the meeting.

<< File: Flint Summary of Issues.docx >>

-----Original Appointment-----
From: Bair, Rita
Sent: Monday, June 29, 2015 12:29 PM
To: Bair, Rita; Damato, Nicholas; Crooks, Jennifer; Del Toral, Miguel; Porter, Andrea; Kuefler, Janet; Shoven, Heather
Subject: Flint Discussion
When: Wednesday, July 01, 2015 9:00 AM-10:00 AM (UTC-06:00) Central Time (US & Canada).
Where: R5Metcalfe-ConfRm-R1515B/R5-Metcalfe---15th-Floor

To: Bair, Rita[bair.rita@epa.gov]; Damato, Nicholas[damato.nicholas@epa.gov]; Poy, Thomas[poy.thomas@epa.gov]
Cc: Moriarty, Edward[Moriarty.EdwardJ@epa.gov]; Kuefler, Janet[kuefler.janet@epa.gov]; Crooks, Jennifer[crooks.jennifer@epa.gov]; Porter, Andrea[porter.andrea@epa.gov]; Shoven, Heather[shoven.heather@epa.gov]; McElhinney, Cary[mcelhinney.cary@epa.gov]
From: Deltoral, Miguel
Sent: Wed 7/15/2015 12:06:55 PM
Subject: Re: Flint Discussion

Rita/Nick/Tom – I thought we had decided to postpone the discussion on compliance until later so that I could focus on getting the final report done. As with inaccurate information that was going to MDEQ, I am now seeing back and forth from GWDWB folks on the compliance issues that is not consistent with the LCR. No disrespect intended, but I worked on the LCR and I know the intent of these provisions (see final rule and guidance excerpts below). GWDWB folks jumping into this discussion without knowing the LCR requirements/intent or reading the rule, preamble and guidance is not helpful and is taking away the little time I have to work on the report.

My recommendation is that this compliance discussion be postponed into next week when Nick and Tom are back in the office and we can schedule a call with OGWDW so that everyone is in on the discussion. Please advise.

LCR Short-term Revisions (2007) Preamble (beginning on page 57788)

2. What Is EPA's Rationale for Advanced Notification and Approval of Long-Term Treatment Changes or Addition of New Source Revisions?

***

EPA requested comment on whether it should revise the existing rule language on "addition of new source" to "source change," but did not propose to make this change. Many commenters stated that revising the rule to cover any source change would be too prescriptive and that this could also include daily changes. Source changes occur on a daily basis due to changes in demand and commenters expressed concern that State review and approval of these changes could not be done in a timely manner and therefore could be detrimental to public health. EPA has retained the language of "addition of new source" in the final rule rather than use the term "source change." EPA believes that it would be difficult to define a long-term source change because the source mixture can constantly change due to demand or changes in availability of sources. EPA discussed several scenarios in the proposed rule, including switching from 100% surface water to 100% ground water, switching from 100% surface water to 50% ground water and 50% surface water, and a change in proportion of moving from 75% ground water and 25% surface water to 25% ground water and 75% surface water.

EPA believes that the existing language "addition of new source" covers the first two scenarios. Notification and approval would not be necessary if the switch is repeated on an annual basis.

The optimal corrosion control treatment for systems with mixed sources (ground water and surface water) should consider the impact of changing the proportions. Section 141.87(a)(1)(i) states that the tap samples shall be representative of water quality throughout the distribution system taking into account the number of persons, the different sources of water, the different treatment methods employed by the system, and seasonal variability. Both water source and water treatment methods can produce different finished water pH values or other critical water quality parameters. For example, if the finished water pH values from both the surface sources and ground water sources are very similar, then this can mitigate the impact of changing the proportions of the various sources. Systems with waters that have different finished pH values should consider monitoring at the representative sites in the distribution system after making a major change in the proportions of the sources (75% ground water to 25% ground water). EPA will provide guidance to help systems identify source water changes (such as changing the mixture) that could impact optimal corrosion control.

Some commenters stated that State approval of the treatment change or addition of a new source is not necessary and would delay changes needed by the system. EPA disagrees with these commenters. EPA believes that clarifying the revision to focus on long-term treatment changes will address concerns that this requirement would affect a system's ability to address daily water quality treatment changes. State notification and approval of long-term treatment changes is important because these changes could adversely impact optimal corrosion control. As EPA noted in the proposed rule, this approach allows the State to evaluate the change prior to implementation and, if needed, to design a monitoring program to ensure that optimal corrosion control is maintained after the change. EPA expects that States will review and approve long-term treatment changes and additions of new sources expeditiously and will avoid unnecessary delays to long-term changes that are needed by the system.

EPA's intent is also re-stated in Section E of the attached LCR Short-term Revisions State Guidance – pages 24 & 25).

Miguel A. Del Toral
Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

From: Deltoral, Miguel
Sent: Wednesday, July 15, 2015 06:24 AM
To: Kuefler, Janet; Crooks, Jennifer; Bair, Rita; Damato, Nicholas; Porter, Andrea; Shoven, Heather
Cc: Moriarty, Edward
Subject: Re: Flint Discussion

Attorney Client/ Ex. 5   Enforcement/Investigatory / Ex. 7A

I know it's a tough situation, and I agree that our primary focus should be on moving forward, but at a minimum we need to have a discussion with OGWDW and OGC on this.

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Janet Kuefler
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State Programs Team Leader

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Enforcement/Investigatory / Ex. 7A

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Sent: Wednesday, July 01, 2015 8:32 AM
To: Damato, Nicholas; Crooks, Jennifer; Deltoral, Miguel; Porter, Andrea; Kuefler, Janet; Shoven, Heather
Subject: RE: Flint Discussion

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Cc: Lopez-Carbo, Maria[Lopez-Carbo.Maria@epa.gov]
From: Moriarty, Edward
Sent: Wed 7/15/2015 12:31:00 PM
Subject: RE: Flint Discussion

Morning!

Before the volume of this email string gets out of hand could we have a conference call? Maria and I would like to discuss. We try to keep our calendars updated.

Ed

Ed Moriarty - Team Lead

OGWDW - Protection Branch

1200 Constitution Ave., NW

Washington, DC 20460

202-564-3864

From: Deltoral, Miguel
Sent: Wednesday, July 15, 2015 7:24 AM
To: Kuefler, Janet; Crooks, Jennifer; Bair, Rita; Damato, Nicholas; Porter, Andrea; Shoven, Heather
Cc: Moriarty, Edward
Subject: Re: Flint Discussion

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Miguel A. Del Toral

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U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

From: Kuefler, Janet
Sent: Monday, July 13, 2015 04:59 PM
To: Crooks, Jennifer; Bair, Rita; Damato, Nicholas; Deltoral, Miguel; Porter, Andrea; Shoven, Heather
Subject: RE: Flint Discussion

I agree with Jen's last sentence. I think focusing on what the system and local health department, or TSC-Cincy experts or CDC can do in the short term to assess the extent of the issue and offer remediation options that can be quickly implemented, if needed, is a sound approach.

I am not certain of the regulatory applicability related to previous consecutive systems, which can come to agreement with the parent system about who does what, and how this scenario applies to the former consecutive system for things like installation and maintenance of corrosion control (since the installation was not done by the former consecutive system.) Can we ask HQ if they know of other systems like this, or maybe this has been done already. I am still catching up on email.

Thanks,

Janet Kuefler

Ground Water and Drinking Water Branch

State Programs Team Leader

United States Environmental Protection Agency, Region 5

77 West Jackson Blvd. (WG-15J)

Chicago, Illinois 60604

(312) 886-0123

kuefler.janet@epa.gov

From: Crooks, Jennifer
Sent: Thursday, July 09, 2015 3:45 PM
To: Bair, Rita; Damato, Nicholas; Deltoral, Miguel; Porter, Andrea; Kuefler, Janet; Shoven, Heather
Subject: RE: Flint Discussion

Rita—you asked at our July 1 meeting that we provide you with any comments related to your write-up to summarize this situation with Flint, or from our meeting.

I had a discussion with Miguel earlier this week, and it seems more apparent that Flint may have violated the LCR by not maintaining corrosion control after being optimized back in the early 1990's (since they were a customer of Detroit). MDEQ did not tell Flint to maintain corrosion control; instead, they treated the change in source water as a new system. I'll bet that the State will take this personally since they are responsible for the City of Flint's actions; which isn't a bad thing, but they may get VERY defensive. We can get into the weeds and explain in detail the intent of the rule and our interpretation of the rule and why the State must issue a TT violation, but in the end; the City, the State and we must move forward TOGETHER to correct this problem. We have resources in Mike Schock and Darren Lytle and Mike Wright; and we want to work with the State and the City to address ALL of the contaminant issues going on in Flint; bacti, TTHMs, Legionella, lead—from a wholistic approach to get some form of corrosion control working that doesn't minimize treatment for bacti or TTHMs. It doesn't make sense to discuss with the State what happened in the past; we need to move forward and work with the State as our partner; as the State sees the lead levels climbing, I don't see the benefit in rubbing their nose in the fact that we're right, and they're wrong.

If the State/City agree to issue public education on how citizens must properly flush their taps, I'm wondering what the benefit would be to force the State to issue a TT violation to Flint.

Regarding the State's protocol of pre-flushing, Miguel said earlier this week on the phone with me that pre-flushing didn't really make that much difference in the lead levels when the City was using Detroit water, since there was scale existing on the inside of the lead pipes. Now that the scale appears to be disappearing, the lead levels are starting to rise even with pre-flushing being conducted prior to sampling. Yes, the levels would probably be higher without the pre-flushing, but the City may exceed the Action Level even with the pre-flushing. Maybe the issue of the State's use of pre-flushing is moot at this point; perhaps we need to focus our energy on getting the State and City to accept our offer of Darren and Mike's participation in a wholistic approach to starting corrosion control and implementing public education for lead.

Jennifer

From: Bair, Rita
Sent: Wednesday, July 01, 2015 8:32 AM
To: Damato, Nicholas; Crooks, Jennifer; Deltoral, Miguel; Porter, Andrea; Kuefler, Janet; Shoven, Heather
Subject: RE: Flint Discussion

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To: Bair, Rita; Damato, Nicholas; Crooks, Jennifer; Del Toral, Miguel; Porter, Andrea; Kuefler, Janet; Shoven, Heather
Subject: Flint Discussion
When: Wednesday, July 01, 2015 9:00 AM-10:00 AM (UTC-06:00) Central Time (US & Canada).
Where: R5Metcalfe-ConfRm-R1515B/R5-Metcalfe---15th-Floor

To: Moriarty, Edward[Moriarty.EdwardJ@epa.gov]; Deltoral, Miguel[deltoral.miguel@epa.gov]; Kuefler, Janet[kuefler.janet@epa.gov]; Bair, Rita[bair.rita@epa.gov]; Damato, Nicholas[damato.nicholas@epa.gov]; Porter, Andrea[porter.andrea@epa.gov]; Thomas Poy[Poy.Thomas@epa.gov]
Cc: Lopez-Carbo, Maria[Lopez-Carbo.Maria@epa.gov]
From: Crooks, Jennifer
Sent: Wed 7/15/2015 6:44:23 PM
Subject: HQ: Flint Discussion

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Sent: Wednesday, July 15, 2015 7:31 AM
To: Deltoral, Miguel; Kuefler, Janet; Crooks, Jennifer; Bair, Rita; Damato, Nicholas; Porter, Andrea; Shoven, Heather
Cc: Lopez-Carbo, Maria
Subject: RE: Flint Discussion

Morning!

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Ed

Ed Moriarty - Team Lead

OGWDW - Protection Branch

1200 Constitution Ave., NW

Washington, DC 20460

202-564-3864

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Cc: Moriarty, Edward
Subject: Re: Flint Discussion

Enforcement/Investigatory / Ex. 7A Attorney Client

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Miguel A. Del Toral

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Cc: Lopez-Carbo, Maria[Lopez-Carbo.Maria@epa.gov]
From: Moriarty, Edward
Sent: Wed 7/15/2015 6:56:04 PM
Subject: RE: Flint Discussion

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OGWDW - Protection Branch

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Washington, DC 20460

202-564-3864

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Attorney Client / Ex. 5 Enforcement/Investigatory / Ex. 7A

Attorney Client / Ex. 5   Enforcement/Investigatory / Ex. 7A

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Where: R5Metcalfe-ConfRm-R1515B/R5-Metcalfe---15th-Floor

To: Moriarty, Edward[Moriarty.EdwardJ@epa.gov]; Crooks, Jennifer[crooks.jennifer@epa.gov]; Kuefler, Janet[kuefler.janet@epa.gov]; Bair, Rita[bair.rita@epa.gov]; Damato, Nicholas[damato.nicholas@epa.gov]; Porter, Andrea[porter.andrea@epa.gov]; Poy, Thomas[poy.thomas@epa.gov]
Cc: Lopez-Carbo, Maria[Lopez-Carbo.Maria@epa.gov]
From: Deltoral, Miguel
Sent: Thur 7/16/2015 11:09:12 AM
Subject: Re: Flint Discussion

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Miguel A. Del Toral
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Sent: Wednesday, July 15, 2015 01:56 PM
To: Crooks, Jennifer; Deltoral, Miguel; Kuefler, Janet; Bair, Rita; Damato, Nicholas; Porter, Andrea; Poy, Thomas
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OGWDW - Protection Branch

1200 Constitution Ave., NW

Washington, DC 20460

202-564-3864

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Sent: Thur 7/16/2015 12:36:19 PM
Subject: Call w/HQ--Flint Discussion

Your call, Rita. Friday call with HQ (I'm available at 3pm) or Monday?

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Sent: Thursday, July 16, 2015 6:09 AM
To: Moriarty, Edward; Crooks, Jennifer; Kuefler, Janet; Bair, Rita; Damato, Nicholas; Porter, Andrea; Poy, Thomas
Cc: Lopez-Carbo, Maria
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From: Moriarty, Edward
Sent: Wednesday, July 15, 2015 7:31 AM
To: Deltoral, Miguel; Kuefler, Janet; Crooks, Jennifer; Bair, Rita; Damato, Nicholas; Porter, Andrea; Shoven, Heather
Cc: Lopez-Carbo, Maria
Subject: RE: Flint Discussion

Morning!

Before the volume of this email string gets out of hand could we have a conference call? Maria and I would like to discuss. We try to keep our calendars updated.

Ed

Ed Moriarty - Team Lead

OGWDW - Protection Branch

1200 Constitution Ave., NW

Washington, DC 20460

202-564-3864

From: Deltoral, Miguel
Sent: Wednesday, July 15, 2015 7:24 AM
To: Kuefler, Janet; Crooks, Jennifer; Bair, Rita; Damato, Nicholas; Porter, Andrea; Shoven, Heather
Cc: Moriarty, Edward
Subject: Re: Flint Discussion

Attorney Client / Ex. 5 Enforcement/Investigatory / Ex. 7A

I know it's a tough situation, and I agree that our primary focus should be on moving forward, but at a minimum we need to have a discussion with OGWDW and OGC on this.

Miguel A. Del Toral

Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

From: Kuefler, Janet
Sent: Monday, July 13, 2015 04:59 PM
To: Crooks, Jennifer; Bair, Rita; Damato, Nicholas; Deltoral, Miguel; Porter, Andrea; Shoven, Heather
Subject: RE: Flint Discussion

I agree with Jen's last sentence. I think focusing on what the system and local health department, or TSC-Cincy experts or CDC can do in the short term to assess the extent of the issue and offer remediation options that can be quickly implemented, if needed, is a sound approach.

I am not certain of the regulatory applicability related to previous consecutive systems, which can come to agreement with the parent system about who does what, and how this scenario applies to the former consecutive system for things like installation and maintenance of corrosion control (since the installation was not done by the former consecutive system.) Can we ask HQ if they know of other systems like this, or maybe this has been done already. I am still catching up on email.

Thanks,

Janet Kuefler

Ground Water and Drinking Water Branch

State Programs Team Leader

United States Environmental Protection Agency, Region 5

77 West Jackson Blvd. (WG-15J)

Chicago, Illinois 60604

(312) 886-0123

kuefler.janet@epa.gov

From: Crooks, Jennifer
Sent: Thursday, July 09, 2015 3:45 PM
To: Bair, Rita; Damato, Nicholas; Deltoral, Miguel; Porter, Andrea; Kuefler, Janet; Shoven, Heather
Subject: RE: Flint Discussion

Rita—you asked at our July 1 meeting that we provide you with any comments related to your write-up to summarize this situation with Flint, or from our meeting.

Attorney Client / Ex. 5 Enforcement/Investigatory / Ex. 7A

Attorney Client / Ex. 5 Enforcement/Investigatory / Ex. 7A MDEQ did not tell Flint to maintain corrosion control; instead, they treated the change in source water as a new system. I'll bet that the State will take this personally since they are responsible for the City of Flint's actions; which isn't a bad thing, but they may get VERY defensive. We can get into the weeds and explain in detail the intent of the rule and our interpretation of the rule and Attorney Client / Ex. 5 Enforcement/Investigatory / Ex. 7A Attorney Client / Ex. 5 Enforcement/Investigatory / Ex. 7A but in the end; the City, the State and we must move forward TOGETHER to correct this problem. We have resources in Mike Schock and Darren Lytle and Mike Wright; and we want to work with the State and the City to address ALL of the contaminant issues going on in Flint; bacti, TTHMs, Legionella, lead—from a wholistic approach to get some form of corrosion control working that doesn't minimize treatment for bacti or TTHMs. It doesn't make sense to discuss with the State what happened in the past; we need to move forward and work with the State as our partner; as the State sees the lead levels climbing, I don't see the benefit in rubbing their nose in the fact that we're right, and they're wrong.

If the State/City agree to issue public education on how citizens must properly flush their taps,

Enforcement/Investigatory / Ex. 7A

Regarding the State's protocol of pre-flushing, Miguel said earlier this week on the phone with me that pre-flushing didn't really make that much difference in the lead levels when the City was using Detroit water, since there was scale existing on the inside of the lead pipes. Now that the scale appears to be disappearing, the lead levels are starting to rise even with pre-flushing being conducted prior to sampling. Yes, the levels would probably be higher without the pre-flushing, but the City may exceed the Action Level even with the pre-flushing. Maybe the issue of the State's use of pre-flushing is moot at this point; perhaps we need to focus our energy on getting the State and City to accept our offer of Darren and Mike's participation in a wholistic approach to starting corrosion control and implementing public education for lead.

Jennifer

From: Bair, Rita
Sent: Wednesday, July 01, 2015 8:32 AM
To: Damato, Nicholas; Crooks, Jennifer; Deltoral, Miguel; Porter, Andrea; Kuefler, Janet; Shoven, Heather
Subject: RE: Flint Discussion

I have been trying to wrap by brain around all the Flint issues and developed the attached summary that I thought I'd share for the meeting. Our objective for the meeting is to discuss the status of Flint, what are all the current issues are, and to all agree on next steps and messaging. If you have other objectives for the meeting please bring those up first thing at the meeting.

<< File: Flint Summary of Issues.docx >>

-----Original Appointment-----
From: Bair, Rita
Sent: Monday, June 29, 2015 12:29 PM
To: Bair, Rita; Damato, Nicholas; Crooks, Jennifer; Del Toral, Miguel; Porter, Andrea; Kuefler, Janet; Shoven, Heather

Subject: Flint Discussion
When: Wednesday, July 01, 2015 9:00 AM-10:00 AM (UTC-06:00) Central Time (US & Canada).
Where: R5Metcalfe-ConfRm-R1515B/R5-Metcalfe---15th-Floor

To: Bair, Rita[bair.rita@epa.gov]
Cc: Crooks, Jennifer[crooks.jennifer@epa.gov]; Deltoral, Miguel[deltoral.miguel@epa.gov]; Harris, Kimberly[harris.kimberly@epa.gov]; Porter, Andrea[porter.andrea@epa.gov]
From: Citizen name / Ex. 6
Sent: Thur 7/16/2015 12:45:24 PM
Subject: RE: Flint Water Question from a Pregnant Flint Resident

Hi Rita,

Thank you very much for your detailed response. It is helpful and I appreciate it greatly.

All the best,
Citizen name / Ex. 6

On Jul 14, 2015 5:22 PM, "Bair, Rita" <bair.rita@epa.gov> wrote:

> We are responding to your email of July 11, 2015 to Miguel Del Toral. He is out of the office today, but has provided the following information to your lead questions. Overall, he agrees with Marc's responses on the water filter. Filters that are certified to remove lead are typically designed to remove 99 percent of the lead. They are also designed with additional capacity as a safety measure, but you should still change the filter in accordance with the manufacturer's instructions. If you identify elevated lead levels from other taps that do not have water filters, we suggest either adding a filter to those, such as the bathroom tap, or only using the filtered tap water for consumption.
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health effects. However, studies available overall showed inconsistent results. As such, our Agency could not conclude whether exposure to TTHMs could cause adverse reproductive/developmental health effects. However, we did note in our findings that there was the potential for concern.

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We hope this information is helpful to you.

Rita D. Bair

Section 2 Chief

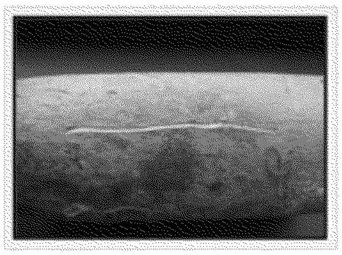
Ground Water and Drinking Water Branch

USEPA-Region 5

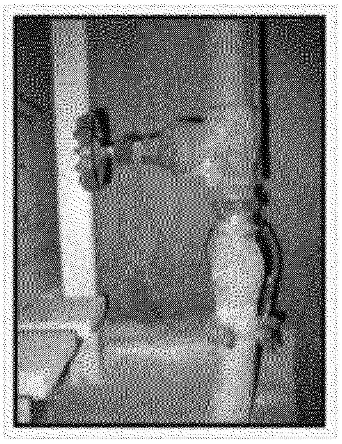
phone: (312) 886-2406

fax: 312-692-2132

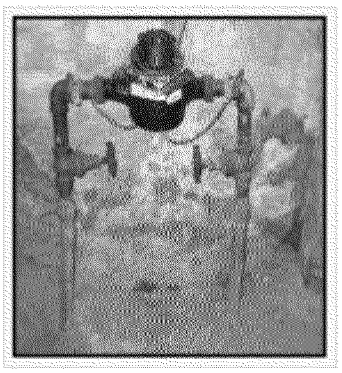
What do lead service lines look like?



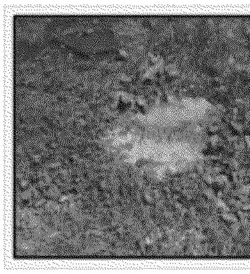
Lead service lines are generally a dull gray color and are very soft. You can identify them easily by carefully scratching with a key. If the pipe is made of lead, the area you've scratched will turn a bright silver color. Do not use a knife or other sharp instrument and take care not to puncture a hole in the pipe.



Lead service lines can be connected to the residential plumbing using solder and have a characteristic solder "bulb" at the end, a compression fitting, or other connector made of galvanized iron or brass/bronze.



Lead service lines often end just inside the front or side wall of the home, but may extend further into the building as shown, where the lead service line comes out of the basement floor to the water meter and then back into the floor, continuing further into the building.



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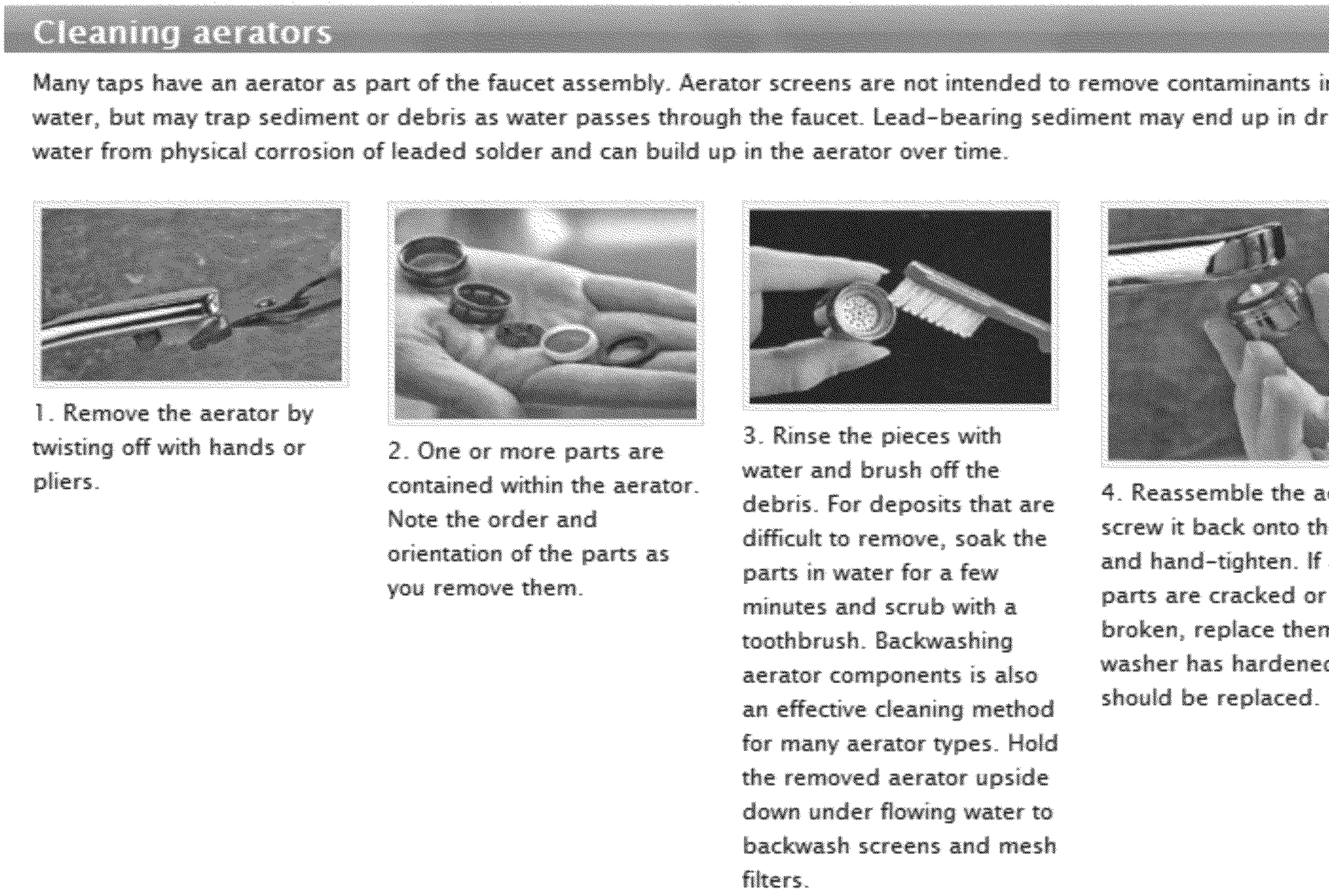

Cleaning aerators

Many taps have an aerator as part of the faucet assembly. Aerator screens are not intended to remove contaminants i
water, but may trap sediment or debris as water passes through the faucet. Lead-bearing sediment may end up in dr
water from physical corrosion of leaded solder and can build up in the aerator over time.

1. Remove the aerator by twisting off with hands or pliers.

2. One or more parts are contained within the aerator. Note the order and orientation of the parts as you remove them.

3. Rinse the pieces with water and brush off the debris. For deposits that are difficult to remove, soak the parts in water for a few minutes and scrub with a toothbrush. Backwashing aerator components is also an effective cleaning method for many aerator types. Hold the removed aerator upside down under flowing water to backwash screens and mesh filters.

4. Reassemble the a
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and hand-tighten. If
parts are cracked or
broken, replace the
washer has hardene
should be replaced.

From: Citizen name / Ex. 6
Sent: Saturday, July 11, 2015 5:57 PM
To: deltoral.miguel@epa.gov; edwardsm@vt.edu
Subject: Flint Water Question from a Pregnant Flint Resident

Dear Dr. Edwards and Dr. Del Toral,

Thank you for the work you have already done in my city to protect families from water contaminant exposure. I am a Flint resident, pregnant with my first child, and therefore advised to drink a whopping 10-16 cups of water each day. I am writing to see if you can shed some light or point me to another source for answers regarding water testing and the safest option for staying hydrated.

If your wife or sister or friend were living in Flint and pregnant, what course of action would you recommend she take? Here is my situation:

- A little background: Prior to becoming pregnant, I installed a pur advanced water filter on our kitchen faucet and always use it when drinking from the tap, which I do frequently. (According to the pur website, the filter is said to filter out 70+ chemicals. Recently, I contacted the company to request more information on exactly what chemicals are filtered and up to what level, and am awaiting their reply.) When using the filter, the water is crystal clear, free of the river smell and without the slight yellow tinge that we sometimes have coming out of the tap (unlike in our bathroom sink which I use to brush my teeth...). I was compelled to purchase the filter because my legs began to swell after Flint changed to the river water, and after installing the filter this problem went away. I even tested the difference by drinking filtered water some days (consistently no swelling) and and unfiltered water others (consistent swelling) for a week or two. I understand the swelling to be the result of sodium chloride in our water which is corrosive enough to make GM stop using Flint water in their local plant (http://www.mlive.com/news/flint/index.ssf/2014/10/general_motors_wont_use_flint.html)

- Given your findings of high levels of lead in some residents' water, my husband strongly believes that I should cease drinking all Flint water and drink bottled water instead. However, I have read extensively about safety concerns of plastic-bottled water (chemists who work with plastics avoid drinking it) and this does not seem to be a safer option despite frequent bottled water drives organized by well-meaning activists across Flint.

- I would like to test our house's tap water with and without the kitchen filter using an independent lab, but my husband thinks this will be a futile effort because we have no reliable way of knowing if the results on one day will be consistent with results on other days, such as if the City of Flint were doing some special change to the water treatment procedure. Would testing multiple times across several weeks be sufficient to address this possibility? If so, how many times and at what interval would you recommend testing, and can you recommend a testing lab? If a high level of lead is discovered, who should we contact to determine where the lead is coming from as a next step?

- According to the consultant that Erin Brockovich sent to Flint earlier this year (http://www.mlive.com/news/flint/index.ssf/2015/02/tthm_how_worried_should_flint.html), total trihalomethanes (TTHM) in the water are dangerous to pregnant women through inhalation exposure during hot showers. (And pregnant women tend to appreciate long, hot showers because our backs are constantly aching!) At this point, the lead issues seem more frightening, though we are considering investing in a costly whole-house water filtration system to deal with both. How can we determine the relative risk to pregnant women for lead in the water vs. TTHMs? I suppose that could differ from house to house. What sort of whole-house filtration would you recommend?

- Are there any other considerations that you think I should keep in mind?

Even for those residents who are privileged to be educated and able to afford water filtration devices, the public water issues we are living with are confounding. The information we receive about our public water supply tends to be fragmented and coming from local public officials who have an interest in downplaying public concerns. In the meantime, it is very difficult to make truly informed decisions about our health.

Thank you in advance for any insights you can share and helping to give my baby a good start in life. I understand if you need to respond as a fellow resident of the world and as experts in general rather than as affiliates of the organizations in which you are employed.

Thank you much,

Citizen name / Ex. 6

Personal Address / Ex. 6

Personal Phone / Ex. 6

To: Busch, Stephen (DEQ)[BUSCHS@michigan.gov]; Prysby, Mike (DEQ)[PRYSBYM@michigan.gov]; Cook, Pat (DEQ)[COOKP@michigan.gov]
Cc: kris philip[philipk@michigan.gov]
From: Crooks, Jennifer
Sent: Thur 7/16/2015 12:49:42 PM
Subject: FW: Flint Water Question from a Pregnant Flint Resident

FYI—our response to a citizen complaint from Flint.

Jennifer

From: Citizen name / Ex. 6
Sent: Thursday, July 16, 2015 7:45 AM
To: Bair, Rita
Cc: Crooks, Jennifer; Deltoral, Miguel; Harris, Kimberly; Porter, Andrea
Subject: RE: Flint Water Question from a Pregnant Flint Resident

Hi Rita,

Thank you very much for your detailed response. It is helpful and I appreciate it greatly.

All the best,
Mona

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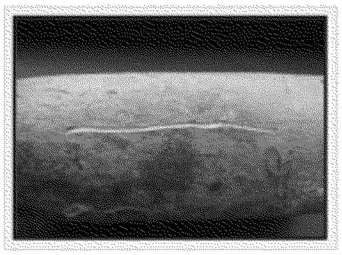

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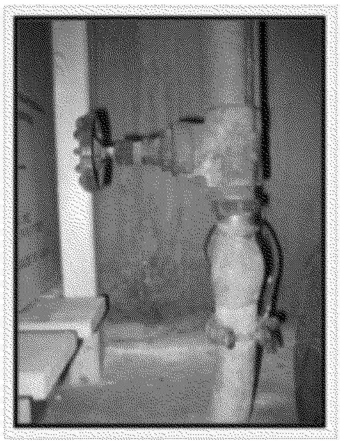

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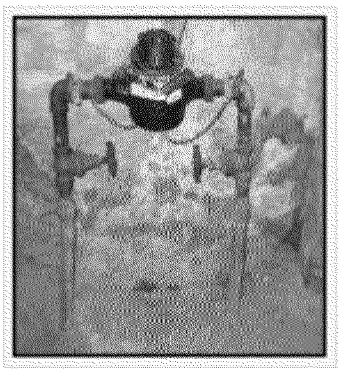

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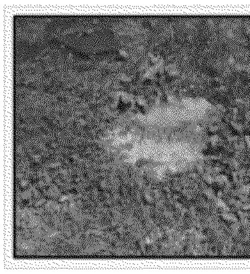

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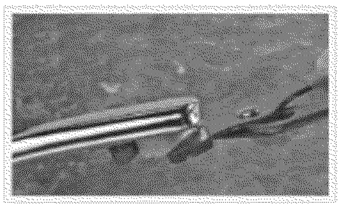

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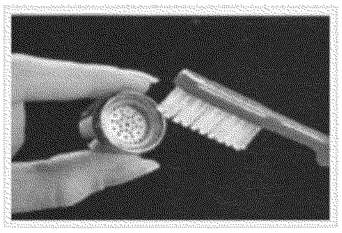

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Citizen name / Ex. 6

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To: Crooks, Jennifer[crooks.jennifer@epa.gov]; Kuefler, Janet[kuefler.janet@epa.gov]; Bair, Rita[bair.rita@epa.gov]
Cc: Deltoral, Miguel[deltoral.miguel@epa.gov]
From: Porter, Andrea
Sent: Thur 7/16/2015 1:42:22 PM
Subject: RE: Flint lead sampling results?

Hi Jen,

The State is supposed to do the 90th percentile calculation using whatever samples were collected, rather than waiting until the full required number are collected.

Here's an excerpt from WSG-174 that covers the issue (source = http://water.epa.gov/lawsregs/guidance/sdwa/upload/wsg_174.pdf):

4) What should states do to calculate compliance if the minimum number of samples are not collected?

As noted in guidance released earlier this year[1], states must calculate the 90th percentile even if the minimum number of samples are not collected. The LCR states that the 90th percentile level is calculated based on "all samples taken during a monitoring period" and does not require that the minimum required number of samples must be collected in order to calculate the 90th percentile level. [40 CFR 141.80(c)]

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[1] See March 9, 2004 memorandum from Cynthia Dougherty to Jane Downing at http://www.eap.gov/safewater/lcrmr/pdfs/memo_lcmr_lead_compliance_calculation.pdf

---

A system which fails to collect the minimum required number of samples incurs a monitoring and reporting violation and is thus required to conduct Tier 3 Public Notification (PN) [40 CFR 141.204(a)] and report the violation in its Consumer Confidence Report (CCR) [40 CFR 141.153(f)(1)]. The system will return to compliance for the monitoring and reporting violation when it completes these tasks and had completed appropriate monitoring and reporting for two consecutive 6-month monitoring periods (or one round of monitoring for a system on reduced monitoring). [*State Implementation Guidance for the LCRMR*, EPA-816-R-01-021]

Calculating the 90th Percentile

40 CFR § 141.80(c)(3) - "The 90th percentile lead and copper levels shall be computed as follows:
(i) The results of all lead and copper samples taken during a monitoring period shall be placed in ascending order from the sample with the lowest concentration to the sample with the highest concentration. Each sampling result shall be assigned a number, ascending by single integers beginning with the number, ascending by single integers beginning with the number 1 for the sample with the lowest contaminant level. The number assigned to the sample with the highest contaminant level shall be equal to the total number of samples taken.
(ii) The number of samples taken during the monitoring period shall be multiplied by 0.9.
(iii) The contaminant concentration in the numbered sample yielded by the calculation in paragraph (c)(3)(ii) is the 90th percentile contaminant level.
(iv) For water systems serving less than 100 people that collect 5 samples per monitoring period, the 90th percentile is computed by taking the average of the highest and second highest concentrations.

5) What is a proper sample?

We have received numerous requests to clarify the LCR with respect to proper samples and grounds for invalidation.

One other note, exceeding the action level for Pb isn't an LCR violation. Exceeding the action level triggers other requirements (depending on system size/status this would be things like public education, corrosion control installation/optimization, lead service line replacement, etc.).

Thanks,

Andrea Porter

Environmental Engineer

Ground Water & Drinking Water Branch

U.S. EPA, Region 5 (WG-15J)

77 W. Jackson Blvd.

Chicago, IL 60604

Phone: 312-886-4427

Fax: 312-697-2656

From: Crooks, Jennifer
Sent: Wednesday, July 15, 2015 5:33 PM
To: Porter, Andrea
Subject: FW: Flint lead sampling results?

Sorry, I forgot to cc you.

From: Crooks, Jennifer
Sent: Wednesday, July 15, 2015 12:37 PM
To: Bair, Rita; Deltoral, Miguel
Cc: Kuefler, Janet
Subject: FW: Flint lead sampling results?

Looks like the State is waiting to get the remaining lead samples so they can calculate the 90th percentile, then they will provide us with the 90th percentile. If we want to see the analytical results of how the 90th percentile was calculated, then Tinka will have to finesse that request with Liane, I think. This whole incident has serious strained my relationship with the State.

Jen

From: Busch, Stephen (DEQ) [mailto:BUSCHS@michigan.gov]
Sent: Wednesday, July 15, 2015 8:39 AM
To: Crooks, Jennifer; Prysby, Mike (DEQ); Cook, Pat (DEQ)
Subject: RE: Flint lead sampling results?

Jennifer,

We will provide the 90th percentile when available, but at this point we do not anticipate any violations of the Lead and Copper Rule.

Stephen Busch, P.E.

Lansing and Jackson District Supervisor

Office of Drinking Water and Municipal Assistance

MDEQ

517-643-2314

From: Crooks, Jennifer [mailto:crooks.jennifer@epa.gov]
Sent: Tuesday, July 14, 2015 3:34 PM
To: Busch, Stephen (DEQ); Prysby, Mike (DEQ); Cook, Pat (DEQ)
Cc: Bair, Rita
Subject: Flint lead sampling results?

Steve/Mike/Pat—Thank you for cluing me in to the fact that Liane and Tinka are talking about Flint next Tuesday. I guess it's just a manager discussion, from what I understand. I understand that Flint didn't get the minimum number of lead samples (100) for the second 6-month monitoring period that ended June 30, so I assume Flint is collecting the remaining samples now. Our Division Director, Tinka Hyde asked today if we will know what the lead results are from the second 6-month monitoring period. Perhaps you don't know what the results are for the remaining samples Flint began taking in July; but do you know what the other 80+ sample results are? Would you be able to share this information with us prior to the call on Tuesday? If not, Liane can share this info regarding the status of the sampling and the sample results with Tinka on Tuesday.

Thank you all for your hard work with Flint and with your management; I know this has not been an easy problem to deal with for anyone.

Jennifer

To: Shekter Smith, Liane (DNRE)[SHEKTERL@michigan.gov]; Richard Benzie[benzier@michigan.gov]; kris philip[philipk@michigan.gov]; Monosmith, Carrie (DNRE)[MONOSMITHC@michigan.gov]; DeBruyn, Dana (DEQ)[DebruynD@michigan.gov]; Dettweiler, Dan (DEQ)[DETTWEILERD@michigan.gov]; Busch, Stephen (DEQ)[BUSCHS@michigan.gov]; Prysby, Mike (DEQ)[PRYSBYM@michigan.gov]; 'cookp@michigan.gov'[cookp@michigan.gov]; Holdwick, Kevin (DEQ)[HOLDWICKK@michigan.gov]
Cc: 'Thomas Poy'[Poy.Thomas@epa.gov]; Bair, Rita[bair.rita@epa.gov]; Damato, Nicholas[damato.nicholas@epa.gov]; Shoven, Heather[shoven.heather@epa.gov]; Kuefler, Janet[kuefler.janet@epa.gov]; Murphy, Thomas[murphy.thomas@epa.gov]; Porter, Andrea[porter.andrea@epa.gov]; Deltoral, Miguel[deltoral.miguel@epa.gov]
From: Crooks, Jennifer
Sent: Tue 7/28/2015 1:47:18 PM
Subject: Final Notes from Michigan semi-annual call on 6/10

I was supposed to finalize these in mid-July, but I didn't receive any changes from anyone, so these notes are final now. Thank you all again for participating.
Jennifer

From: Crooks, Jennifer
Sent: Wednesday, July 01, 2015 5:31 PM
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Cc: Thomas Poy; Bair, Rita; Damato, Nicholas; Shoven, Heather; Kuefler, Janet; Murphy, Thomas; Porter, Andrea; Deltoral, Miguel
Subject: Draft Notes from Michigan semi-annual call on 6/10

All--Below are my draft notes from our call last week, June 10, 2015. Thank you all for participating. I apologize for the delay in getting these out in draft to you all for review--I was hoping to get a couple of items ironed out that were fuzzy during our discussions, but hasn't happened yet. Several ACTION items below. So, please review to make sure I documented our discussion/agreements correctly, and feel free to edit as needed. I you could get back to me by July 13, that would be great. Thank you!

Jennifer

Attendees:
MDEQ: Liane Shekter-Smith, Richard Benzie, Carrie Monosmith, Kris Philip, Dan Dettweiler, Marjorie Rodriguez (Student), Kevin Holdwick, Mike Prysby, Dana DeBruyn, Steve Busch
EPA Region 5: Tom Poy, Rita Bair, Nick Damato, Janet Kuefler, Michele Palmer, Tom Murphy, Heather Shoven, Cary McElhinney, Andrea Porter, Miguel Deltoral, Mostafa Noureldin

Summary:

1.Changes in Lead Disinvestments and Commitments for FY 2016 ARDP--for discussion: Due to our extreme focus on lead in drinking water, this is the consensus here.

a. Consumer notification of tap results at NTNCWSs:
(Suggested wording) The NCWS program commits to full implementation of the lead consumer notification of tap results requirement, to begin in CY 2016. Region 5 will assist in a notification outreach effort in late FY 2015 to remaining 698 NTNCWSs that are not schools/daycares, to begin providing lead consumer notice in CY 2016. NCWS program commits to include information on providing lead consumer notice in the annual monitoring letter sent to all NTNCWSs for CY 2016.

STATE: The State found this change in the wording acceptable.

b. Collection of Lead samples at NTNCWSs during June - September 2016 timeframe
(Suggested wording) NCWS program commits to including information in the applicable NTNCWS annual monitoring letters of the requirement to collect their annual/triennial lead sample between June and September only, during CY 2016. The MDEQ NCWS program currently does not have the capability to easily track lead sampling compliance within this specific timeframe.

STATE: The State found this change in the wording acceptable.

c. Follow-up Actions for NTNCWSs that sample outside of June-September 2015 timeframe
(From 5/5/15 call notes w/EPA) MDEQ commits to providing Region 5 with all CY 2015 lead (and copper?) sample data for all NTNCWSs by March 2016 so that EPA can analyze how many PWSs monitored outside the June through October timeframe. EPA commits to follow-up with MDEQ to discuss follow-up actions.

STATE: The State agreed to providing EPA R5 the raw lead and copper data for all CY 2015 for all NTNCWSs. The WaterTrack database does have data, but it can't generate violations. MDEQ doesn't commit to enforcing against 2016 violators in FY 2016. The State said, it is planning on disinvesting in enforcing against these violators due to limited capability of WaterTrack; however, if the State's noncommunity data management capabilities improve during FY 2016, implementation of this disinvestment may become a reality. The State has not designated an alternate timeframe, or done system specific documentation as to why the system qualifies for a different timeframe.

d. Submittal of the lead and copper reporting form
(Suggested wording) MDEQ commits to requiring CWSs and NTNCWSs to submit the lead and copper reporting form via the annual monitoring letters to each system, tracking CWSs and NTNCWSs submittal of the lead and copper reporting form, and commits to issuing violations for failure to submit the lead and copper reporting form. The reporting form provides the address of the sample site, designates sampling site selection criteria, and explanation(s) for any changes in sampling sites.

STATE: Dan Dettweiler stated that the NCWS program was not in a position to do this for the NTNCWSs at this time. Tom Murphy asked how does WaterTrack handle/track high lead results? Tom M said there is a truncation issue on the sample location name field. Dan acknowledged that this problem has been identified, and the Department of Technology Management and Budget (DTMB) has been trying to fix this problem, but it is a challenging problem. Dan stated that sample sites for NTNCWSs are actually identified by LHDs during the sanitary survey and are documented in the sanitary survey. The LHDs check the pdf of the laboratory results that clearly states where the sample was taken, and calculates the 90th percentile. However, Dan stated that the requirement to send in the lead and copper reporting form is not currently in the LHD annual monitoring letter sent to each system. The NTNCWSs do not couple this form to the Lead Consumer Notice, as does the CWSs. Kris Philip pointed out that the LHDs select the sample sites, thus when they are calculating the 90th percentile, they are actually double checking the sites with the results.

From our discussion, the Region concluded that at this time, the LHDs are actively reviewing the lead and copper results and the sample locations when they calculate the 90th percentiles to ensure proper LCR monitoring is conducted by ALL NTNCWSs at the proper sample sites. After our call, I asked for verification of this statement, and Dan Dettweiler responded, "Just as with an exceeding value of an MCL, WaterTrack alerts the LHD when at least one sample for a water system exceeds the AL. A 90th percentile calculation is made only when an exceeding result alerts the LHD. For cases where there are no exceeding results, private lab samples are reviewed at the time LHDs hand-enter them into WaterTrack. State lab samples, which flow electronically via nightly downloads from the state lab database, are reviewed when pdfs of the analysis reports are, routinely, emailed by the state lab to LHDs. Beyond that, MDEQ's annual evaluation of the LHDs provides another opportunity for us to oversee the proper assigning and use of designated sampling locations."

ACTION: The Region will discuss Dan's response internally, and get back to the State with any issues/concerns.

Kris Philip said that the CWS program is requiring that the systems submit the form, but they are not enforcing whether or not the system submits the form. Often, the CWS will submit the Lead Consumer Notice and the Lead and Copper reporting form together. Kris said if 90%+ are already submitting the forms, then the State will agree to follow-up and enforce this requirement. But, if less than that, will probably be too much of a burden. Kris said they may change the way DEQ is tracking in SDWIS during FY 2016. But, the Region said SDWIS-Prime probably won't be available until 2017 at the earliest.

ACTION: Kris Philip will research with the District Offices to determine the current submittal rate of the lead and copper reporting form from CWSs; and report back to the Region.

2. Enforcement Update with Heather
   NTNCWSs under Bottled Water agreements due to Arsenic MCL violations:
   Per discussions with Region 5 and the February 2014 EPA/OECA memo, MDEQ has closed the old Arsenic open-ended MCL violations; however, no further quarterly monitoring is being conducted at the (±27) systems that are still under bottled water agreements. Thus, no more arsenic MCL violations will be reported for these systems and these systems will not become priority systems (ETT score of 11 or more) since only one arsenic MCL violation will be reported (5 points) even though they have a longstanding issue with arsenic noncompliance. The Region would like to discuss the pros and cons of placing these PWSs with arsenic MCL violations on quarterly monitoring as required under 40 CFR Section 141.23(c)(7); and brainstorm possible solutions.

Heather provided an update on how the State is doing in returning ETT systems to compliance; the State is doing very well in achieving its commitment for FY 2015. Heather said the Region is glad to see the State and LHD prioritization of implementation of the drinking water program and NTNCWS schools and daycares.
Referring to the NTNCWSs under BW agreements that are in violation of the Arsenic MCL, Heather said that since there are no more open-ended MCL violations in SDWIS, that no MCL violations can be reported to SDWIS unless there is monitoring to show the system is in non-compliance. Even though the LHD has indicated that these systems are drinking bottled water for public health protection, the use of bottled water cannot be a permanent solution to the fact that the system's drinking water at the tap continues to exceed the MCL for arsenic. Dan said there are 22 systems, where 8 are schools, that should be conducting quarterly monitoring. Dana said that letters have been sent (OR drafted?) to these 22 systems to require quarterly sampling for arsenic; these 22 systems are in 10 different counties so the message from the State is consistent. A secondary effect of this new requirement for the systems, may be that they transition to another water source or install treatment sooner.

The State voiced a concern that multiple quarterly violations could potentially affect the State's relationship with the LHDs financially. Genesee and Oakland Counties have quite a number of noncommunity water systems. Multiple quarterly violations could affect the Dept of Community Health's determination as to whether the LHDs are meeting their minimum program requirements; thus receive full funding for their work with the noncommunity systems for the drinking water program. The LHDs cannot have more than 20% of their systems with violations. The Region wonders how much funding would be cut from a LHD contract if it exceeds the 20% noncompliance level set in the contract?

3. Status of Flint
   a. TTHM levels for May--Due to MDEQ district engineer June 10-RECEIVED; see link to results
   https://www.cityofflint.com/2015/06/01/may-water-testing-results-show-all-locations-are-within-acceptable-limits-for-tthm/
   All samples below the TTHM MCL; one site still has an LRAA above the MCL but decreased from 105 ppb in Feb to 93.5 ppb in May.

   Mike Prysby said he is getting ready to issue the construction permit to the City of Flint to install a GAC filter in July, that will remove more TOC to further reduce the potential of developing TTHMs. Mike said he has already issued a construction permit for a transmission line within the City that will help reduce water age.

b. Lead in Flint

Our discussions with MDEQ indicate that no phosphates/corrosion control has been added to the system since April 2014 when the source of drinking water changed to the Flint River. We understand that the City is just finishing up its second set of 6-month initial monitoring for lead; where the results will probably warrant a Corrosion Control Study to be conducted. Since Flint has lead service lines, we understand some citizen-requested lead sampling is exceeding the Action Level, and the source of drinking water will be changing again in 2016, so to start a Corrosion Control Study now doesn't make sense. The idea to ask Flint to simply add phosphate may be premature; there are many other issues and factors that must be taken into account which would require a comprehensive look at the water quality and the system before any treatment recommendations can/should be made. Miguel is recommending MDEQ and EPA? approach Flint about formally requesting EPA's Office of Research and Development in Cincinnati support on the lead in Flint drinking water issue, and request that Mike Schock, ORD, and possibly Darren Lytle, ORD, to participate in Flint's drinking water advisory committee so that a comprehensive evaluation on how to proceed can be discussed.

Miguel provided a brief summary of the high lead results found at the residence of Citizen name / Ex. 6 Citizen name / Ex. 6 in Flint. Miguel will follow up with a written summary of the work conducted, sample results, and conclusions.
Miguel believes that lead levels in Flint are being affected by the lack of Corrosion Control being conducted by the City, since the LCR requires 2 6-month initial monitoring for a new source. Steve Busch stated that in the Lead sampling pool, almost all of the lead sample sites are lead service lines, and the State is not seeing large increases in lead levels at the tap. Miguel suggested that EPA experts in Lead, Mike Schock; and in distribution systems, Darren Lytle, be added to the Flint drinking water advisory committee to assist the City/State in determining the best way to proceed to minimize lead in the City's drinking water during the interim use of the Flint River, and subsequent use of Lake Huron water.

Miguel said he will send Mike Schock and Darren Lytle's contact information to Steve and Mike. Steve pointed out that the City is following the LCR requirements, and completing the requirements in a timely manner. Miguel's point is that since the LCR was promulgated 20+ years ago, that research and different situations, like Washington D.C., have educated scientists, experts, and regulators that the existing requirements in the LCR may not be as protective as previously thought. Thus, he can only make recommendations as to how to revise sampling protocols. And Miguel acknowledges that it may be another year before these regulation changes are promulgated in the Long-Term Lead and Copper Rule. In December 2015, the NDWAC recommendation is expected.

The Region asked the State if the Flint River will be a permanent supplemental source of drinking water, once the City of Flint connects with the Karegdodi pipeline from Lake Huron. Mike Prysby said that the City is currently pumping 22MGD, but the City has 40-50 MG of storage. The City is currently working on reducing its unaccounted for water losses, and these water losses are dropping. The State, through the Governor's office, provided disadvantaged system funding, $2M which includes $900K for lead detection, and pipe inspection.

4. Update on WaterTrack to SDWIS-State: The migration of WaterTrack data to SDWIS-State was number 39 on the Dept of Technology Management and Budget's (DTMB) project list last year; this year it is number 30. It doesn't appear this project has a high priority. Does the State have any new information on the progress of this project?

Dan said that the migration of WaterTrack data to SDWIS-State has moved to a priority of 26 with DTMB so far this year. But Dan said they are going to take this project out of the que, since Ronda Page has returned to the drinking water program from DTMB. Ronda said she re-estimated DTMB's involvement in this project to be far less than originally thought, so there is no need for any program developers or the tech team. This project will only need the Data Team and the web designers only. Ronda said they can set-up on a new server and migrate the data from WaterTrack to SDWIS-State themselves; in-house. Kris Philip remembers migrating the

CWS data to SDWIS-State, so she can be a resource for this project. The parts that are needed to be completed by DTMB could be contracted out. Cary McElhinney said that there is a process of withholding PWSS grant funds and re-directing the funds to a HQ contract with SAIC. Richard Benzie said the process worked well last year when MI used PWSS funds to contract with a HQ contractor to conduct NEEDS survey training.

ACTION: Jen will follow up with State and Tribal Programs Branch about the process and timing of holding back funds from the PWSS grant for the purpose of contracting with SAIC.

5. Consequences of cutting the State drinking water program to a "minimal program"
Jennifer had a discussion with Richard Benzie regarding the possibility of the Michigan State Legislature looking to have just a minimal drinking water program, meaning only a program with activities that are required by the Federal SDWA. Jennifer ultimately discussed this internally with Tom Poy. The minimal program suggested would cut out Operator Certification, Capacity Development, Plan Review, Cross Connection Control, Source Water Protection, among other programs that are State required. Operator Certification and Capacity Development, while not required by the Federal regulations, do have financial strings attached. And Plan review/construction permits are required by the SRF program for a loan. Any recent communication with the State Legislature that they might proceed and make this possibility a reality?

Richard and Liane said there is no current threat from the State Legislature to cut the State-funded PWSS program activities. But there is a State-wide impetus to delete old programs and regulations, so this could lead to questioning the purpose of State-funded PWSS program activities. Richard is just being proactive in preparing a justification. Richard remembers a discussion many years ago about what constitutes a "comprehensive drinking water program". Tom Poy and Jennifer commented in a previous communication with Richard that the EPA PWSS primacy program and the State-funded activities in the drinking water program were meant to complement each other. To support this statement, Jennifer sent Richard some PWSS Priority guidance from the 90's, some preamble language from the 1976 SDWA found by our attorney, and language from Section 142 of the SDWA regulations from 1976 that might assist him in his justification.

6. EPA's Resource Message at the LHD Workshop in April
From the 2014 analysis of Shared Goals 2013 data, which is compliance data, for noncommunity systems, there are increasing trends of nitrate M/R violations for both NTNCWSs and TNCWSs. We discussed this on the last semi-annual call. Analysis of the 2015 Shared Goals 2014 data (April 2015) shows an improvement--that of decreasing numbers of bacti/nitrate M/R violations.

However, in light of the upcoming implementation of RTCR in 2016, the question raised here in the Region is:
Does the State have a plan with the LHDs as to what activities must be prioritized, and what will fall off the plate? Not all LHDs will need to disinvest based upon each LHD's resources, but some poorly funded LHDs may have to disinvest in some activities/drop activities that have no risk to public health.

Carrie Monosmith said that she met with the RTCR workgroup, comprised of LHD Directors/sanitarians, last fall to identify activities that the state can disinvest in during the next

> several years as the LHDs begin implementation of RTCR. They could not identify any activity that could be dropped. The main thing that will help the LHDs save time is to get the electronic DWR (eDWR) going, or the CMD portal, which will drastically reduce the LHDs time in inputting laboratory data into WaterTrack/SDWIS-State. From there, they can develop electronic data forms (CROMEER compliant) that the systems can submit.

Thank you!

Jennifer

shekterl@michigan.gov; 'Richard Benzie' <benzier@michigan.gov>; 'kris philip' <philipk@michigan.gov>; 'Monosmith, Carrie (DNRE)' <MONOSMITHC@michigan.gov>; 'DeBruyn, Dana (DEQ)' <DebruynD@michigan.gov>; Dettweiler, Dan (DEQ) <DETTWEILERD@michigan.gov>; Poy, Thomas <poy.thomas@epa.gov>; Kuefler, Janet <kuefler.janet@epa.gov>; Damato, Nicholas <damato.nicholas@epa.gov>; Shoven, Heather <shoven.heather@epa.gov>; Murphy, Thomas <murphy.thomas@epa.gov>; Bair, Rita <bair.rita@epa.gov>; McElhinney, Cary <mcelhinney.cary@epa.gov>; Pniak, Edward <pniak.edward@epa.gov>; 'cookp@michigan.gov'; 'Prysby, Mike (DEQ)' <PRYSBYM@michigan.gov>; Busch, Stephen (DEQ) <BUSCHS@michigan.gov>

To: kris philip[philipk@michigan.gov]
From: Crooks, Jennifer
Sent: Tue 7/28/2015 1:51:29 PM
Subject: CWS--lead and copper reporting form

Hi, Kris. We're just about done with negotiating with Dana and Dan about this topic for the NCWSs, so I was wondering if you've had time to check with the CWSs? See the item below (in red) from our call in June; there's an action item below for you on this topic. I know you've been busy--ME TOO! I was hoping this summer would be quieter, but didn't happen...
Jen

From: Crooks, Jennifer
Sent: Tuesday, July 28, 2015 8:47 AM
To: Shekter Smith, Liane (DNRE); Richard Benzie; kris philip; Monosmith, Carrie (DNRE); DeBruyn, Dana (DEQ); 'Dettweiler, Dan (DEQ)'; 'Busch, Stephen (DEQ)'; 'Prysby, Mike (DEQ)'; 'cookp@michigan.gov'; 'Holdwick, Kevin (DEQ)'
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Kris Philip said that the CWS program is requiring that the systems submit the form, but they are not enforcing whether or not the system submits the form. Often, the CWS will submit the Lead Consumer Notice and the Lead and Copper reporting form together. Kris said if 90%+ are already submitting the forms, then the State will agree to follow-up and enforce this requirement. But, if less than that, will probably be too much of a burden. Kris said they may change the way DEQ is tracking in SDWIS during FY 2016. But, the Region said SDWIS-Prime probably won't be available until 2017 at the earliest.

ACTION: Kris Philip will research with the District Offices to determine the current submittal rate of the lead and copper reporting form from CWSs; and report back to the Region.

2. Enforcement Update with Heather

Enforcement/Investigatory / Ex. 7A Not Related to Flint

Enforcement/Investigatory / Ex. 7A Not Related to Flint

3. Status of Flint
   a. TTHM levels for May--Due to MDEQ district engineer June 10-RECEIVED; see link to results https://www.cityofflint.com/2015/06/01/may-water-testing-results-show-all-locations-are-within-acceptable-limits-for-tthm/

   All samples below the TTHM MCL; one site still has an LRAA above the MCL but decreased from 105 ppb in Feb to 93.5 ppb in May.

   Mike Prysby said he is getting ready to issue the construction permit to the City of Flint to install a GAC filter in July, that will remove more TOC to further reduce the potential of developing TTHMs. Mike said he has already issued a construction permit for a transmission line within the City that will help reduce water age.

   b. Lead in Flint

   Our discussions with MDEQ indicate that no phosphates/corrosion control has been added to the system since April 2014 when the source of drinking water changed to the Flint River. We understand that the City is just finishing up its second set of 6-month initial monitoring for lead; where the results will probably warrant a Corrosion Control Study to be conducted. Since Flint has lead service lines, we understand some citizen-requested lead sampling is exceeding the Action Level, and the source of drinking water will be changing again in 2016, so to start a Corrosion Control Study now doesn't make sense. The idea to ask Flint to simply add phosphate may be premature; there are many other issues and factors that must be taken into account which would require a comprehensive look at the water quality and the system before any treatment recommendations can/should be made. Miguel is recommending MDEQ and EPA? approach Flint about formally requesting EPA's Office of Research and Development in Cincinnati support on the lead in Flint drinking water issue, and request that Mike Schock, ORD, and possibly Darren Lytle, ORD, to participate in Flint's drinking water advisory committee so that a comprehensive evaluation on how to proceed can be discussed.

Miguel provided a brief summary of the high lead results found at the residence of Citizen name / Ex. 6 Citizen name / Ex. 6 in Flint. Miguel will follow up with a written summary of the work conducted, sample results, and conclusions.
Miguel believes that lead levels in Flint are being affected by the lack of Corrosion Control being conducted by the City, since the LCR requires 2 6-month initial monitoring for a new source. Steve Busch stated that in the Lead sampling pool, almost all of the lead sample sites are lead service lines, and the State is not seeing large increases in lead levels at the tap. Miguel suggested that EPA experts in Lead, Mike Schock; and in distribution systems, Darren Lytle, be added to the Flint drinking water advisory committee to assist the City/State in determining the best way to proceed to minimize lead in the City's drinking water during the interim use of the Flint River, and subsequent use of Lake Huron water.

Miguel said he will send Mike Schock and Darren Lytle's contact information to Steve and Mike. Steve pointed out that the City is following the LCR requirements, and completing the requirements in a timely manner. Miguel's point is that since the LCR was promulgated 20+ years ago, that research and different situations, like Washington D.C., have educated scientists, experts, and regulators that the existing requirements in the LCR may not be as protective as previously thought. Thus, he can only make recommendations as to how to revise sampling protocols. And Miguel acknowledges that it may be another year before these regulation changes are promulgated in the Long-Term Lead and Copper Rule. In December 2015, the NDWAC recommendation is expected.

The Region asked the State if the Flint River will be a permanent supplemental source of drinking water, once the City of Flint connects with the Karegdodi pipeline from Lake Huron. Mike Prysby said that the City is currently pumping 22MGD, but the City has 40-50 MG of storage. The City is currently working on reducing its unaccounted for water losses, and these water losses are dropping. The State, through the Governor's office, provided disadvantaged system funding, $2M which includes $900K for lead detection, and pipe inspection.

4. Update on WaterTrack to SDWIS-State: The migration of WaterTrack data to SDWIS-State was number 39 on the Dept of Technology Management and Budget's (DTMB) project list last year; this year it is
number 30. It doesn't appear this project has a high priority. Does the State have any new information on the progress of this project?

Dan said that the migration of WaterTrack data to SDWIS-State has moved to a priority of 26 with DTMB so far this year. But Dan said they are going to take this project out of the que, since Ronda Page has returned to the drinking water program from DTMB. Ronda said she re-estimated DTMB's involvement in this project to be far less than originally thought, so there is no need for any program developers or the tech team. This project will only need the Data Team and the web designers only. Ronda said they can set-up on a new server and migrate the data from WaterTrack to SDWIS-State themselves; in-house. Kris Philip remembers migrating the CWS data to SDWIS-State, so she can be a resource for this project. The parts that are needed to be completed by DTMB could be contracted out. Cary McElhinney said that there is a process of withholding PWSS grant funds and re-directing the funds to a HQ contract with SAIC. Richard Benzie said the process worked well last year when MI used PWSS funds to contract with a HQ contractor to conduct NEEDS survey training.

ACTION: Jen will follow up with State and Tribal Programs Branch about the process and timing of holding back funds from the PWSS grant for the purpose of contracting with SAIC.

5. Consequences of cutting the State drinking water program to a “minimal program”
Jennifer had a discussion with Richard Benzie regarding the possibility of the Michigan State Legislature looking to have just a minimal drinking water program, meaning only a program with activities that are required by the Federal SDWA. Jennifer ultimately discussed this internally with Tom Poy. The minimal program suggested would cut out Operator Certification, Capacity Development, Plan Review, Cross Connection Control, Source Water Protection, among other programs that are State required. Operator Certification and Capacity Development, while not required by the Federal regulations, do have financial strings attached. And Plan review/construction permits are required by the SRF program for a loan. Any recent communication with the State Legislature that they might proceed and make this possibility a reality?

   Richard and Liane said there is no current threat from the State Legislature to cut the State-funded PWSS program activities. But there is a State-wide impetus to delete old programs and regulations, so this could lead to questioning the purpose of State-funded PWSS program activities. Richard is just being proactive in preparing a justification. Richard remembers a discussion many years ago about what constitutes a “comprehensive drinking water program”. Tom Poy and Jennifer commented in a previous communication with Richard that the EPA PWSS primacy program and the State-funded activities in the drinking water program were meant to complement each other. To support this statement, Jennifer sent Richard some PWSS Priority guidance from the 90's, some preamble language from the 1976 SDWA found by our attorney, and language from Section 142 of the SDWA regulations from 1976 that might assist him in his justification.

6. Nonresponsive

Nonresponsive

Thank you!

Jennifer

shekterl@michigan.gov; 'Richard Benzie' <benzier@michigan.gov>; 'kris philip' <philipk@michigan.gov>; 'Monosmith, Carrie (DNRE)' <MONOSMITHC@michigan.gov>; 'DeBruyn, Dana (DEQ)' <DebruynD@michigan.gov>; Dettweiler, Dan (DEQ) <DETTWEILERD@michigan.gov>; Poy, Thomas <poy.thomas@epa.gov>; Kuefler, Janet <kuefler.janet@epa.gov>; Damato, Nicholas <damato.nicholas@epa.gov>; Shoven, Heather <shoven.heather@epa.gov>; Murphy, Thomas <murphy.thomas@epa.gov>; Bair, Rita <bair.rita@epa.gov>; McElhinney, Cary <mcelhinney.cary@epa.gov>; Pniak, Edward <pniak.edward@epa.gov>; 'cookp@michigan.gov'; 'Prysby, Mike (DEQ)' <PRYSBYM@michigan.gov>; Busch, Stephen (DEQ) <BUSCHS@michigan.gov>

To: Susan Hedman[Hedman.Susan@epa.gov]; Hyde, Tinka[hyde.tinka@epa.gov]; Robert Kaplan (kaplan.robert@epa.gov)[kaplan.robert@epa.gov]
From: Kelley, Jeff
Sent: Tue 8/4/2015 2:25:48 PM
Subject: FW: The Atlantic: Aging Pipes Are Poisoning America's Tap Water

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Jeff Kelley
Director, Office of External Communications
U.S. EPA Region 5
ph: 312-353-1159

From: Singer, Joshua
Sent: Tuesday, August 04, 2015 9:21 AM
To: Rowan, Anne; Cannon, Phillippa; Kelley, Jeff; Cassell, Peter
Subject: The Atlantic: Aging Pipes Are Poisoning America's Tap Water

FYI, in case you haven’t seen this.

http://www.theatlantic.com/business/archive/2015/07/dont-drink-the-water/399803/

Aging Pipes Are Poisoning America's Tap Water

In Flint, Michigan, lead, copper, and bacteria are contaminating the drinking supply and making residents ill. If other cities fail to fix their old pipes, the problem could soon become a lot more common.

Flint residents received jugs of water from a church in February. Paul Sancya / AP

Alana Semuels

Jul 29, 2015

FLINT, Mich.—Melissa Mays looks around the emergency room at a frail, elderly man in a wheelchair and a woman with a hacking cough and can't quite believe she's here. Until a few months ago, she was healthy—an active mother of three boys who found time to go to the gym while holding down a job as a media consultant and doing publicity for bands.

But lately, she's been feeling sluggish. She's developed a rash on her leg, and clumps of her hair are falling out. She ended up in the emergency room last week after feeling "like [her] brain exploded," hearing pops, and experiencing severe pain in one side of her head.

Mays blames her sudden spate of health problems on the water in her hometown of Flint. She says it has a blue tint when it comes out of her faucet, and lab results indicate it has high amounts of copper and lead. Her family hasn't been drinking the water for some months, but they have been bathing in it, since they have no alternative.

"It set off a train wreck in my system," Mays told me, sitting in the emergency room. Later, doctors would put her on beta blockers after finding problems in the arteries around her brain.

In the past 16 months, abnormally high levels of e. coli, trihamlomethanes, lead, and copper have been found in the city's water, which comes from the local river (a dead body and an abandoned car were also found in the same river). Mays and other residents say that the city government endangered their health when it stopped buying water from Detroit last year and instead started selling residents treated water from the Flint River. "I've never seen a first-world city have such disregard for human safety," she told me.

While Flint's government and its financial struggles certainly have a role to play in the city's water woes, the city may actually be a canary in the coal mine, signaling more problems to come across the country. "Flint is an extreme case, but nationally, there's been a lack of investment in water infrastructure," said Eric Scorsone, an economist at Michigan State University who has followed the case of Flint. "This is a common problem nationally— infrastructure maintenance has not kept up."

Bethany Hazard says her water started coming out of the faucet brown and smelling like a sewer, and when she called the city to complain, she was told the water was fine.

Indeed, water scarcity in the parched West might be getting the most news coverage, but infrastructure delays and climate change are causing big problems for cities in the North and Midwest, too. Last summer, hundreds of thousands of people in Toledo were told not to drink tap water because tests showed abnormally high levels of microcystins, perhaps related to algae blooms in Lake Erie. Microcystins can cause fever, headaches, vomiting, and—in rare cases—seizures. Heavy rainfall has caused backups in the filtering process at overloaded water-treatment plants in Pennsylvania, and so residents are frequently finding themselves under advisories to boil water. And Chicago, which installed lead service lines in many areas in the 1980s, is now facing a spike in lead-contaminated tap water.

In 2013, America received a "D" in the drinking-water category of the American Society for Civil Engineers' Report Card for America's Infrastructure. The report found that most of the nation's drinking-water infrastructure is "nearing the end of its useful life." Replacing the nation's pipes would cost more than $1 trillion. The country's wastewater infrastructure also got a "D" grade.

Hydrant flushing in Flint (Alana Semuels)

Like many cities in America, Flint has lost residents but still has to provide services like water and sewer and road maintenance within the same boundaries. All while bringing in less tax revenue to pay for it. Flint has not had the money to spend on crucial infrastructure upgrades, and has left old pipes in place for longer than most engineers would recommend. Water prices are rising in Flint, like they are in lots of other cities, but the quality of water is getting worse, not better.

Flint has financially struggled for longer than most American cities. The birthplace of General Motors, the city began having problems in the 1980s and 1990s when GM started closing plants. By 2001, its unemployment rate was 11.2 percent, which grew every year until it reached 25 percent in 2009. Families began to seek opportunity elsewhere, leaving behind empty homes. As the city's population declined, it struggled to come up with the revenue to provide basic services such as police and fire coverage for residents. The water system, though, was still a "cash cow," said Scorsone, the professor, so Flint borrowed from the water authority to pay its city bills.

Flint has been buying water from Detroit since 1967. The Detroit Water and Sewer Department, in the booming post-war years, expanded its services, adding 1,000 square miles of territory. But as the population began to shrink in both Detroit and Flint, fewer customers were left to pay for infrastructure and services. Detroit began raising rates, but Flint didn't pass those rate increases on to customers because residents were struggling economically and politicians worried they'd get voted out of office, said Scorsone. That meant that little to no money was spent on infrastructure upgrades.

In 2004, Detroit charged Flint $11.06 per million cubic foot of water. By 2013, it was charging $19.12 per million cubic foot, a 73 percent increase.

"It's a combination of bad management and bad economics," Scorsone said.

Downtown Flint (Carlos Osorio/AP)

By 2011, Flint had a $15 million deficit and Michigan Governor Rick Snyder appointed an emergency manager to take control over the city. It was a move that upset many, since emergency managers are used to replace elected officials such as city councils and mayors and have widespread authority, but less connection to residents. In 2012, Michigan voters repealed an emergency-manager law that had allowed emergency managers to take over troubled cities and school districts. But the state legislature then passed a different, and more far-reaching, emergency-manager law later that year. A group of citizens, including some from Flint, filed a lawsuit arguing that the law violated their constitutional right to equal protection. In November, a judge allowed the suit to go forward.

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But making river water safe for public use is a much more difficult task than treating reservoir or lake water. Rivers are subject to runoff and the water quality can change quickly with air temperature or heavy storms. Flint found this out as soon as it turned off the pumps from Detroit and started pumping its own water in April 2014.

Residents said they noticed the difference almost immediately. Melissa Mays says her water started smelling like rotten eggs, and had a strange tint when coming out of the faucet, sometimes blue, sometimes yellowish.

Claire McClinton, a GM retiree, said her house began to smell like garbage. Another resident, Bethany Hazard, says her water started coming out of the faucet brown and smelling like a sewer, and when she called the city to complain, she was told the water was fine.

The water was not fine. First, tests showed there was fecal coliform bacteria in the water, and the city had to issue numerous boil advisories to citizens. In response, engineers upped the amount of chlorine in its water, leading to dangerously high levels of trihalomethanes, or TTHMs, which put Flint in violation of the Clean Water Act. TTHMs are especially dangerous when inhaled, making showering in hot water toxic.

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LeeAnne Walters didn't notice any changes right away. But a few months after the switch, she noticed that her children were getting rashes between their fingers, on their shins, on the back of their knees. Her four-year-old son, who has a compromised immune system, started breaking out into scaly rashes whenever he swam in their salt-water pool, which he'd used since birth. Then Walters' 14-year-old son got extremely sick and missed a month of school.

So she sent her water off to Marc Edwards, a Virginia Tech environmental engineering professor who had forced the CDC to admit it had misled the public about the amount of lead in D.C.'s water.

Edwards was shocked when he found that Walters' lead content was 13,000 parts per billion. The EPA recommends keeping lead content below 15 parts per billion.

“At first I didn’t believe the results because they were the worst I’d ever seen, and I’ve seen a lot,” Edwards told me.

LeeAnne Walters shows a water filter from her home. (Alana Semuels)

None of the samples Walters sent were safe to drink. Some had lead content of 200 parts per billion. Over 30 samples, the average lead content was 2,000 parts per billion, which meant that no matter how long Walters let her taps run, it still would have been toxic. This could easily have been causing the health problems that Walters and her children were experiencing.

“Lead is the best known neurotoxin, it adversely impacts every system in the human body,” Edwards told me. “Certainly it could have caused children’s lead poisoning.”

The city says it does not know why so much lead was found in Walters’ pipes, but Edwards has a theory: Many cities have lead pipes, and when water sits in those pipes, the lead can leech into the water. So cities usually add corrosion-control chemicals, such as phosphates, to keep the lead out of the water. But because Flint didn’t take such precautions when they began pumping their own water, “the public health protection was gone,” Edwards says.

The water situation has made people furious with the city, and with the emergency-manager system of government. Residents say Flint first learned about the high levels of TTHMs in May 2014, but didn't inform residents until January. City meetings have devolved into a mob of angry residents yelling at the emergency manager.

"We still don't have a true democracy," said Claire McClinton, the retiree. "As soon as [the emergency manager] sets foot in your city, your local government is gone." In March, Flint's city council voted to "do all things necessary" to once again purchase water from Detroit, but the city's emergency manager nixed the vote, calling it "incomprehensible." The emergency manager stepped down in April, announcing that the city was on firmer financial footing, but one of his last orders was that the city council could not change any of his orders for a year, including the order to switch to Flint water.

Flint last week sent out yet another notice that tap water had higher than acceptable levels of TTHMs. There are currently two lawsuits pending about the water issues, one of which questions the city's financial accounting, another demands that the city go back to Detroit water because Flint's water quality is so poor.

Drainage into the Flint River (Alana Semuels)

Many Flint residents have a visceral reaction to the water problem, and have focused their attention on the emergency manager, on their city's finances, and on the unfairness of their situation.

"How many times can they kick the people who live here?" Melissa Mays asked me in frustration.

But it's not one emergency manager, or one bad decision about pumping water from the Flint River that has led these problems—and that might be the scariest part of all. Neglected infrastructure is really to blame, but it's not quite as satisfying to blame old pipes as it is to blame the people in charge. And the city's financial woes have a lot to do with its shrinking population, but it's hard to blame the people who left in hopes of finding employment or a better life elsewhere.

Eroding infrastructure isn't unique to Flint. Things just broke down there first.

In a report released to its members last month, the American Water Works Association warned that many utilities across the country won't have the money to perform much-needed infrastructure upgrades over the upcoming decades. Utilities are seeing water sales declining as households and commercial clients become more efficient, but, like Flint, still have to provide the same infrastructure as before with less revenue.

"There is a gap between the financial needs of water and wastewater systems and the means to pay for these services through rates and fees," the report read.

"They don't have money to even do the best practices according to our currently lousy best practices," says Edwards, of Virginia Tech. "They have even less money than normal to address these very, very expensive problems."

And if utilities can't pay for much-needed upgrades, other cities might soon find themselves in the same situation as Flint.

To: Tinka Hyde[Hyde.Tinka@epa.gov]
From: Hedman, Susan
Sent: Sat 8/8/2015 1:13:09 AM
Subject: FW: The Atlantic: Aging Pipes Are Poisoning America's Tap Water

At the Monday morning meeting, will you please provide a status report as to where we are with MDEQ and Flint?

From: Kelley, Jeff
Sent: Tuesday, August 04, 2015 9:26 AM
To: Hedman, Susan; Hyde, Tinka; Kaplan, Robert
Subject: FW: The Atlantic: Aging Pipes Are Poisoning America's Tap Water

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Jeff Kelley
Director, Office of External Communications
U.S. EPA Region 5
ph: 312-353-1159

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Alana Semuels

Jul 29, 2015

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None of the samples Walters sent were safe to drink. Some had lead content of 200 parts per billion. Over 30 samples, the average lead content was 2,000 parts per billion, which meant that no matter how long Walters let her taps run, it still would have been toxic. This could easily have been causing the health problems that Walters and her children were experiencing.

“Lead is the best known neurotoxin, it adversely impacts every system in the human body,” Edwards told me. “Certainly it could have caused children’s lead poisoning.”

The city says it does not know why so much lead was found in Walters’ pipes, but Edwards has a theory: Many cities have lead pipes, and when water sits in those pipes, the lead can leech into the water. So cities usually add corrosion-control chemicals, such as phosphates, to keep the lead out of the water. But because Flint didn’t take such precautions when they began pumping their own water, “the public health protection was gone,” Edwards says.

The water situation has made people furious with the city, and with the emergency-manager system of government. Residents say Flint first learned about the high levels of TTHMs in May 2014, but didn’t inform residents until January. City meetings have devolved into a mob of angry residents yelling at the emergency manager.

“We still don’t have a true democracy,” said Claire McClinton, the retiree. “As soon as [the emergency manager] sets foot in your city, your local government is gone.” In March, Flint’s city council voted to “do all things necessary” to once again purchase water from Detroit, but the city’s emergency manager nixed the vote, calling it “incomprehensible.” The emergency manager stepped down in April, announcing that the city was on firmer financial footing, but one of his last orders was that the city council could not change any of his orders for a year, including the order to switch to Flint water.

Flint last week sent out yet another notice that tap water had higher than acceptable levels of TTHMs. There are currently two lawsuits pending about the water issues, one of which questions the city’s financial accounting, another demands that the city go back to Detroit water because Flint’s water quality is so poor.

Drainage into the Flint River (Alana Semuels)

Many Flint residents have a visceral reaction to the water problem, and have focused their attention on the emergency manager, on their city's finances, and on the unfairness of their situation.

"How many times can they kick the people who live here?" Melissa Mays asked me in frustration.

But it's not one emergency manager, or one bad decision about pumping water from the Flint River that has led these problems—and that might be the scariest part of all. Neglected infrastructure is really to blame, but it's not quite as satisfying to blame old pipes as it is to blame the people in charge. And the city's financial woes have a lot to do with its shrinking population, but it's hard to blame the people who left in hopes of finding employment or a better life elsewhere.

Eroding infrastructure isn't unique to Flint. Things just broke down there first.

In a report released to its members last month, the American Water Works Association warned that many utilities across the country won't have the money to perform much-needed infrastructure upgrades over the upcoming decades. Utilities are seeing water sales declining as households and commercial clients become more efficient, but, like Flint, still have to provide the same infrastructure as before with less revenue.

“There is a gap between the financial needs of water and wastewater systems and the means to pay for these services through rates and fees,” the report read.

“They don’t have money to even do the best practices according to our currently lousy best practices,” says Edwards, of Virginia Tech. “They have even less money than normal to address these very, very expensive problems.”

And if utilities can’t pay for much-needed upgrades, other cities might soon find themselves in the same situation as Flint.

To: Benzie, Richard (DEQ)[BENZIER@michigan.gov]
Cc: Busch, Stephen (DEQ)[BUSCHS@michigan.gov]; shekterl@michigan.gov[shekterl@michigan.gov]; Devereaux, Tracy Jo (DEQ)[DEVEREAUXT@michigan.gov]; Henry, Timothy[henry.timothy@epa.gov]; Hyde, Tinka[hyde.tinka@epa.gov]; Glowacki, Joanna[glowacki.joanna@epa.gov]; Crooks, Jennifer[crooks.jennifer@epa.gov]
From: Poy, Thomas
Sent: Fri 8/14/2015 7:42:50 PM
Subject: RE: Draft 90th percentile letter
Flint PbCu15-draft tpedits.doc

Liane/Richard/Steve: Thank you for the opportunity to provide input on the LCR letter to Flint. Attached are our suggested edits. I conferred with ORC and we believe that the Federal and Michigan rules allow the State to require specific treatment in lieu of a corrosion control study. Pat Cook asked about this during our last call. Flint would still have to do some monitoring as part of tweaking the treatment in order to optimize it.

Please let me know if you have questions about our comments/suggestions.

Tom

Tom Poy

Chief, Ground Water and Drinking Water Branch

USEPA - Region 5

(312) 886-5991

From: Benzie, Richard (DEQ) [mailto:BENZIER@michigan.gov]
Sent: Wednesday, August 12, 2015 5:13 PM
To: Poy, Thomas; Hyde, Tinka
Cc: Busch, Stephen (DEQ); shekterl@michigan.gov; Devereaux, Tracy Jo (DEQ)
Subject: FW: Draft 90th percentile letter

Attached is our draft letter to Flint regarding their lead and copper monitoring results and 90th percentile determination for their initial 2 six-month LCR monitoring periods after the city converted from Detroit's conventional treatment of Lake Huron to softening of the Flint River. This letter includes our directions for the ensuing steps and our recommendations as far as corrosion control optimization.

Please provide any comments you may have by the close of business on Friday, August 14th. We realize this response time is short, but we intend to deliver this letter to the city on Monday, August 17th.

Thanks,

Richard

Richard Benzie, P.E., Chief

Field Operations Section

Office of Drinking Water and Municipal Assistance, MDEQ

517-284-6512

From: Busch, Stephen (DEQ)
Sent: Wednesday, August 12, 2015 11:06 AM
To: Benzie, Richard (DEQ)
Cc: Rosenthal, Adam (DEQ); Prysby, Mike (DEQ); Shekter Smith, Liane (DEQ); Cook, Pat (DEQ)
Subject: Draft 90th percentile letter

Richard,

Attached is our draft 90th percentile Pb/Cu letter for the City of Flint. Could you please forward this to Tinka Hyde and/or Tom Poy at EPA region V. We request any comments back by the close of business on Friday August 17. Thanks.

Stephen Busch, P.E.

MDEQ Lansing District Coordinator

Office of Drinking Water and Municipal Assistance

Lansing and Jackson District Supervisor

517-643-2314

buschs@michigan.gov

STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY
LANSING

RICK SNYDER
GOVERNOR

DAN WYANT
DIRECTOR

DRAFT for August 17, 2015

Mr. Brent Wright
City Of Flint - DPW
Flint Water Plant
4500 North Dort Highway
Flint, Michigan 48505

Dear Mr. Wright:

Subject: City Of Flint WSSN: 02310
Lead and Copper Monitoring of Drinking Water Taps

We received your report for the monitoring period January 1, 2015, through June 30, 2015.

Action Levels	Results this monitoring period			
	90th Percentile	# of Samples Above Action Level	# of Samples Required	# of Samples Collected
Lead 15 parts per billion (ppb)	11 ppb	6	60	69
Copper 1.3 parts per million (ppm)	0.16 ppm	0	60	69

Ninety percent or more of the sites you tested are within action levels under the administrative rules promulgated under the Michigan Safe Drinking Water Act, 1976 PA 399, as amended. These results must be reported on your 2015 Consumer Confidence Report (CCR) due to our office, your customers, and the local health department, by July 1, 2016. Also include the following statement in the CCR, regardless of the lead and copper levels:

> *If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. The City of Flint is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline at 1-800-426-4791 or at http://water.epa.gov/drink/info/lead.*

Recent changes to the Lead and Copper Rule (LCR) require the water supply to provide individual lead tap results to people who receive water from sites that were sampled, even if lead was not detected, within 30 days of learning of results. You must also send us a certification that you met all the delivery requirements along with a sample copy of your customer notice by 3 months after the end of the monitoring period. To download the *Lead and Copper Report and Consumer Notice of Lead Result Certificate* in Microsoft Word or PDF format, visit http://michigan.gov/deq. Click on Water, Drinking Water, Community Water Supply, and Reporting Forms. Water supplies that fail to distribute the Consumer Notice of Lead Results must include the following statement in their CCR, "During the year, we failed to provide lead results to persons served at the sites that were tested as required by the Lead and Copper Rule."

While the City's LCR compliance monitoring has continued to meet action level requirements, the LCR also requires all large systems (those serving over 50,000 people) to optimize corrosion control regardless of their 90th percentile lead concentration. One way to demonstrate fully optimized corrosion control treatment is through two consecutive six month rounds of LCR compliance monitoring in which the difference between the 90th percentile level and the highest source water lead concentration is less than the Practical Quantitative Level for lead (0.005 mg/l). Since the City of Flint did not meet these criteria in both the July – December 2014, and January – June 2015, sampling periods, the City must now recommend a treatment to fully optimize corrosion control treatment within six months in accordance with requirements under the Michigan Safe Drinking Water Act, Administrative Rule 604f (R 325.10604f). Please provide **this recommendation to our office as soon as possible but no later than December 1, 2015.**

However, given the past use of phosphate treatment by the Detroit Water and Sewerage Department (DWSD) to fully optimize corrosion control treatment when the City of Flint was a wholesale customer of DWSD, this Office is recommending the City consider the selection and recommendation of this treatment option, and begin implementation as soon as possible to address ongoing concerns by customers regarding lead levels within their premise plumbing systems.

We will inform you when monitoring needs to be conducted as part of the optimization of the implemented corrosion control treatment. Customer requested samples for lead shall continue to be collected and analyzed. Please make every attempt to select the same sites used in the previous monitoring period, giving Tier 1 sites first priority. If original sites are unavailable, select replacement sites based on the Tier 1, 2, and 3 criteria.

Please contact me at the number or email listed below at your earliest convenience to discuss how the City will be complying with the above requirements.

Sincerely,

Adam Rosenthal, EQA
Office of Drinking Water and Municipal Assistance
Lansing District
517-284-6644
rosenthala@michigan.gov

ar/jlr
Enclosures

EQP 5942

cc: Mr. Michael Glasgow, City of Flint

EQP 5942

To: Moriarty, Edward[Moriarty.EdwardJ@epa.gov]
Cc: Banks, Victoria[Banks.Victoria@epa.gov]; Glowacki, Joanna[glowacki.joanna@epa.gov]; Darman, Leslie[Darman.Leslie@epa.gov]; Shoven, Heather[shoven.heather@epa.gov]; Crooks, Jennifer[crooks.jennifer@epa.gov]; Bair, Rita[bair.rita@epa.gov]
From: Poy, Thomas
Sent: Tue 8/18/2015 6:26:22 PM
Subject: RE: LCR Optimized Corrosion Control Call

Attorney Client / Ex. 5

By the way, MDEQ is supposed to deliver a letter to Flint this week informing them that their system does not have optimized corrosion control treatment. MDEQ is recommending that because of Detroit's use of phosphate treatment to fully optimize corrosion control when Flint was a customer that Flint use this treatment too, as soon as possible.

Tom

Tom Poy
Chief, Ground Water and Drinking Water Branch
USEPA - Region 5
(312) 886-5991

-----Original Appointment-----
From: Moriarty, Edward
Sent: Tuesday, August 18, 2015 11:53 AM
To: Poy, Thomas
Subject: Accepted: LCR Optimized Corrosion Control Call
When: Wednesday, August 19, 2015 1:30 PM-2:00 PM (UTC-06:00) Central Time (US & Canada).
Where: R5WD-ConfCallLine-A/Conference-Call-Line/R5-WATER

Tom,

Is there more you can share?

Ed

To: Poy, Thomas[poy.thomas@epa.gov]; Bair, Rita[bair.rita@epa.gov]; Damato, Nicholas[damato.nicholas@epa.gov]
From: Deltoral, Miguel
Sent: Fri 8/28/2015 11:52:24 AM
Subject: Website on Flint

Morning folks,

In case you have not seen this website on Flint…14 of 48 samples (30%) are above the lead AL so far. No surprise of course. It just confirms what I have been saying all along about the situation in Flint.

And just in case 'anyone' should ask…no, I have not been involved in this effort. Marc is Marc and God bless him for it.

https://flintwaterstudyupdates.wordpress.com/

Analysis of water samples from 48 Flint homes to date for lead are worrisome

August 27, 2015 Articles

Of the first **48** first draw samples collected by Flint residents and analyzed at VT, **52% were over 5 ppb**, which suggests a serious lead in water problem according to our experience and criteria**.** Fourteen samples (30% of those collected) also exceeded 15 ppb lead, suggesting a very serious lead in water problem. **That is, the Flint Citizen Science study to date, is finding results worse than the EPA standard which is applied to sampling "worst case" homes.** The highest lead sampled in first draw so far was 139 ppb. **The 90th percentile lead level is currently 31 ppb, which is double the EPA standard, and in a range where water consumption can cause lead poisoning in children.**

Miguel A. Del Toral
Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)

Chicago, IL 60604
Phone: (312) 886-5253

To: Crooks, Jennifer[crooks.jennifer@epa.gov]
From: Poy, Thomas
Sent: Fri 8/28/2015 1:05:02 PM
Subject: FW: Website on Flint

FYI…

Tom Poy

Chief, Ground Water and Drinking Water Branch

USEPA - Region 5

(312) 886-5991

From: Deltoral, Miguel
Sent: Friday, August 28, 2015 6:52 AM
To: Poy, Thomas; Bair, Rita; Damato, Nicholas
Subject: Website on Flint

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Miguel A. Del Toral

Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

To: Crooks, Jennifer[crooks.jennifer@epa.gov]
From: Porter, Andrea
Sent: Fri 8/28/2015 3:11:42 PM
Subject: FW: Website on Flint

Hi Jen,

Wasn't sure if Miguel already sent you this link. If not, thought you'd be interested (see below).

Thanks,

Andrea

From: Deltoral, Miguel
Sent: Friday, August 28, 2015 06:52 AM
To: Poy, Thomas; Bair, Rita; Damato, Nicholas
Subject: Website on Flint

Morning folks,

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Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

To: Hyde, Tinka[hyde.tinka@epa.gov]; Henry, Timothy[henry.timothy@epa.gov]
From: Poy, Thomas
Sent: Mon 8/31/2015 1:36:49 PM
Subject: FW: Flint
Tesfai et al wqtc_2006_mon13-2.pdf

Tinka/Tim: Mike Schock talks about some of the complications in dealing with lead in the distribution system and the need to have the experts involved in figuring out what needs to be done to the Flint system. It does not sound like it is a simple as turning on an orthophosphate feed pump. Some analytical work will need to be done on the front end. As I mentioned on Friday, Susan's message to the mayor of Flint should stress the need to get the experts involved.

Tom

Tom Poy

Chief, Ground Water and Drinking Water Branch

USEPA - Region 5

(312) 886-5991

From: Schock, Michael
Sent: Monday, August 31, 2015 7:25 AM
To: Deltoral, Miguel; Poy, Thomas
Cc: Lytle, Darren
Subject: RE: Flint
Importance: High

Hi, Tom/Miguel;

I know what paper he's referring to, and as usual, there are a lot of competing variables. It's a significant reason why the LCR was intended to require corrosion control studies before making significant treatment changes. For a given set of background water chemistry variables (Cl, NOM, alkalinity , pH, sulfate, etc.), and a given set of plumbing materials, the water system needs to verifiy what water chemistry adjustments need to be made, *together.* I talked to Marc about this issue last week. It is true that in some waters, orthophosphate might aggravate galvanic corrosion, short-term. How long is short and how much aggravation? No way to know. And his experiments use new solder on new copper, which would not (or should never) be the case in Flint. This is another reason why, when there is partial lead service line replacement, regardless of local plumbing codes, *the utility must use dielectric insulators or use plastic replacement pipe.* London, ON, pioneered the latter. I have contact information for them, if it's needed. They have years of experience. The first is a no-brainer, but in most cities, there has not been oversight, so nobody knows if they really did it.

What we do know, and what Marc and I talked about last week, was that *when there are lead service lines present (and Flint has tens of thousands, as far as I know), there are ONLY 2 corrosion control treatment approaches that can work: PbO2 scales, or orthophosphate dosing.* Given the old distribution system, the difficulty in maintaining chlorine residuals, the obvious issues with chlorine reactivity in the water to form DBPs, and the massive iron corrosion and release that has been observed at times, I would guess (without detailed water chemistry characterization) with some confidence that PbO2 scale formation could not be achieved in any reasonable length of time in Flint. It should be a consideration, along with full LSL replacement, as a long-term objective. But I don't think they could achieve the conversion of existing pipe scales without holistically addressing chlorine demand, pH and ORP maintenance issues, plus the unknown of what the during- and post-Detroit water scales were and what the conversion pathway and rate would be to get them to PbO2.

They have too much hardness and too much iron corrosion to even think about raising the pH to the mid-9s to pursue a pH/alkalinity optimization strategy, and with the papers from the last decade showing elevated lead levels in the LSLs of systems with good 90th percentile first draw, first liter results, I think that's not a very promising approach, anyway.

The encouraging thing is that the compilation of over a decade and a half of monitoring at the tap in the UK, where orthophosphate dosing is essentially universal, and they've looked at both LSL and non-LSL sites, is that there's overall improvement by over an order of magnitude, even with non-LSL sites, looking at the data in aggregate. It practice, the mass of lead contamination and exposure potential from the LSLs almost certainly outweigh the old solder issue. Promoting and enforcing the lead-free requirements for brass faucets and in-line devices will also reduce the significance of galvanic corrosion in the future.

The Flint situation calls for a combination of pipe rig-type simulation studies, and perhaps, a partial system isolation demonstration study, like DC did in late summer 2004.. The LCR sampling when they were connected to Detroit, suggests that the phosphate-treated Detroit water did not aggravate galvanic corrosion. That would have been picked up in the 1st L, even with pre-flushed samples. So, they have a new water chemistry situation now, that was not tested before the change, from what I can tell.

Adding orthophosphate to a “dirty” system is not as simple as just turning on a chemical feed. As DC found out (paper attached), alum carry-over can be a complication, undissolved lime from pH adjustment can be a problem, etc. And, severe iron corrosion that exceeds the capability of the orthophosphate to passivate the iron scales. Porous iron scales would necessitate elevated phosphate doses for an extended period of time (months to years), and a period of discolored water may occur during that passivation time, as loose distribution system scales become mobile because of particle surface charge changes. A strong unidirectional flushing problem to clean out corroded iron lines and a long-term O&M plan to keep the distribution system (including storage tanks in the DS) clean enough to improve disinfectant stability and corrosion inhibitor performance.

I’m truly sorry that the system plunged into the expense of building a new plant (rather than remaining connected to the Detroit water) without proper planning and study with respect to corrosion control and metal release implications of the change of water into an old, existing distribution system. It really complicates the cost considerations when comparing staying on the “new” water and fixing the treatment and distribution system issues, versus reconnecting to the Detroit water. And it necessitates some “optimization” studies to mitigate the lead release. Our prior experience with systems from which full profiles of LSL sites by samples from tap to main all point to lead release being generally 3 to 8 times higher than the first-liter samples suggest, when Pb(II) is the form of lead present in the pipe scales. I’m sure it is in Flint. So simply meeting the AL with the current LCR sampling protocol does not assure typical exposures to lead would be low enough to produce minimal impacts on BLLs and cognitive development in the vulnerable population.

--Mike

From: Deltoral, Miguel
Sent: Monday, August 31, 2015 6:57 AM
To: Poy, Thomas
Subject: Re: Flint

Yep. That was the paper I had in mind. The solder is one issue wrt galvanic corrosion and the other would be galvanic corrosion after partial LSLR. We have no documentation on LSLs in Flint so I can't characterize the potential scope of the problem with PLSLR. The only information we have on LSLs in Flint is from the folks that put in the new service at the Citizen name / Ex. 6 place and they said that the LSLs they have seen (their experience) have mostly been on the public side (main to curb), but they have seen full LSLs in Flint as well.

If you want, I can see if Mike is available for a call today. Just let me know as soon as you can. I have been up since about 2am and will likely quit early today.

Miguel A. Del Toral

Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

From: Poy, Thomas
Sent: Friday, August 28, 2015 03:08 PM
To: Deltoral, Miguel
Subject: Flint

Miguel: Did you see that in the last of Marc's articles on the website that he makes a statement that Flint River water is so corrosive that adding orthophosphate may not help and may make things worse?

"Flint River is very corrosive for iron and lead materials, compared to the water previously purchased from Detroit. Orthophosphates that are commonly added to corrosive waters to minimize lead leaching from aged water distribution pipes made of or containing lead, but water from the Flint River is so corrosive that use of orthophosphate might not provide the normal benefits and might actually make things worse."

One of the links takes you to a paper about phosphates increasing galvanic current between tin and copper, which would affect leaded solder in premise plumbing.

Tom

Tom Poy

Chief, Ground Water and Drinking Water Branch

USEPA - Region 5

(312) 886-5991

Precipitate Formation in the Distribution System Following Addition of Orthophosphate

Fikremariam Tesfai and Pierre Constant – District of Columbia Water & Sewer Authority (WASA)
Coauthors - Steve Reibier – CH2M Hill, Rich Giani and Maureen Donnelly, WASA

Introduction

Orthophosphate is being used by many water utilities as a metal corrosion inhibitor. The substance binds with metal ions, creating a film on the outer pipe scale to prevent corrosion. After the Washington Aqueduct (WA), the District of Columbia Water and Sewer Authority's (WASA) finished water supplier changed disinfection from free chlorine to chloramines, lead leaching accelerated in the water distribution system. WA began to add phosphoric acid in response to the reported higher lead levels. The initial target residual was 3.2 mg/L phosphate, which WASA intended to maintain until the corrosion control treatment optimized. The 90th percentile lead levels declined from 59 to 15 ppb within eight months of phosphate addition.

WASA began to receive customer complaints of white cloudy water after a year of continuous phosphate treatment. Water Quality technicians collected and tested water samples from taps and hydrants in response to these complaints. Several hydrant samples had a white cloudy appearance and $\text{color}_{\text{apparent}}$ exceeding 200 Pt-Co units. Significant higher levels of phosphate, iron, and aluminum were also measured in these hydrant samples. Filtering the hydrant samples showed nearly all the iron and aluminum and a majority of the phosphate were in particulate form. Interestingly, technicians rarely captured this cloudy appearance inside tap samples. WASA conducted a study, involving field and bench-scale analyses, to determine the cause of the white cloudy water.

Theory

In distribution systems, aluminum, calcium, ferrous and ferric ions can react with various anions and negative-charged organic matter to form precipitates, complex ions and/or coagulate, which may lead to flocculation (Kemmer et al; Miller et al; Lente et al). All mechanisms are observed in most systems. The degree in which one mechanism predominates over another depends on all other cations and anions present, pH, alkalinity, and temperature (Lytle et al).

WA's addition of phosphate into the water supply increased the potential for phosphate to influence particulate formation. Past research has shown that phosphate can release minerals from corrosion layers, decrease bacterial adhesion, form precipitates, and adsorb onto metal oxides, hydroxides, and/or other products (Appenzeller et al; Lytle et al; Magnuson et al; EPA, 2000).

The following paragraphs outline some theoretical particulates and colloids formed from aluminum, calcium and iron; which are known to increase $\text{color}_{\text{apparent}}$ readings and tend to give a white cloudy appearance. In each section, phosphate particulate formation with each metal is discussed.

Aluminum Formations Aluminum precipitation and coagulation are important reactions within wastewater and drinking water treatment. Aluminum salt addition to raw water and wastewater allows aluminum to react with phosphates to form aluminum phosphate and aluminum hydroxides (Haas et al). When enough aluminum salt is added to raw water to neutralize the negatively charged particulates and colloids present, coagulation begins. If the appropriate mixing energy is then applied, flocculation proceeds. The flocs formed are later removed, however this removal is not absolute and a small amount of aluminum salts usually leaves the treatment plant. The formations of crystalline aluminum phosphate and aluminum hydroxide solids are competing reactions and can be given the generalized formula $Al(PO_4)_3(OH)_{3-x}$ (Haas et al). In low phosphate concentrations (<10ppm) the competition is more

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significant and will lead to an amorphous collection of particulates and colloids (Yeoman et al.) The amount of amorphous particulates and colloids produced depends on phosphate concentration and pH.

Calcium Formations Calcium is usually the major metal present in semi-hard to hard water distribution systems. Particulate formation is often influenced and/or involved with this cation. The primary precipitate is the crystalline solid, calcium carbonate. Langlier Saturation Index is often used to characterize water's tendency to form this solid. This formula relates temperature, moles of calcium, pH and alkalinity to the formation of calcium carbonate.

Independent of calcium carbonate formation is the precipitation of calcium phosphate particulates or colloids by the formation of apatites (e.g. $CaHPO_4$; $Ca_4H(PO_4)_3$; $Ca_3(PO_4)_2$) or hydroxyl apatite ($Ca_5(PO_4)_3OH$ (Haas et al). This particulate is usually seen in higher pH ranges around 9 and once formed can re-dissolve, if pH is around 7.0 and phosphorus concentration is less than 3ppm (Haas et al).

Iron Formations Ferric and ferrous ions are known to form many particulates and deposits within distribution systems (i.e. goethite, magnetite, lepidocrocite, ferrihyrdrite) (Vikesland et al). An oxidant used for microbiological disinfection in distribution systems will oxidize most ferrous ions in solution to ferric ions. This oxidation reaction is autocatalytic and is also accelerated by the presence and/or formation of iron oxides. The kinetics of ferrous ion oxidation and influence of dissolved oxygen, a weak oxidant, will influence the physical characteristics of ferric particulates formed.

Once ferric ions are formed, they will react with alkalinity and/or phosphate to form insoluble precipitates. These particulates can be generalized by the equation:

$$wPO_4^{3-} + xFe^{3+} + yOH^- \leftrightarrow Fe_x(PO_4)_w(OH)_y^{(3x-3w-y)}$$

Iron phosphate and iron hydroxide formation are competing reactions and are dependent on pH, alkalinity, and phosphate concentration. If more ferric than phosphate ions are present the formation of ferric hydr(oxide) and positively charged complex ions will predominate. Conversely, if more phosphate ions than ferric ions are present the formation of ferric phosphates and negatively-charged ions will predominate. This process, unlike coagulation (mechanism that would proceed if more ferric hydroxides are formed), allows for the formation of negatively charged particles. These products will repel each other thereby making it easy to re-suspend and/or keep them in suspension.

Sources of Al, Ca, Iron, and phosphate in WASA's distribution system

The sources of metal cations and anions within a distribution system can be found in the source water, treatment chemicals added at the plant, and pipe and pipe-scale dissolution. WASA's distribution system iron sources are limited to the piping dissolution and corrosion layer deposits, since no iron salts are used in drinking water treatment. These two sources are significant considering the high percentage of cast iron piping in the distribution system. For aluminum, typical sources are alum and poly-aluminum chloride added at the water treatment plant. Calcium sources are more varied than the other metals, since calcium is found in natural raw water, added at the treatment plant in the form of lime, and incorporated in pipe scale layers. Phosphate is primarily from the phosphoric acid addition at the treatment plant.

This paper outlines the investigation of the white cloudy water phenomena within WASA's distribution system. WASA conducted field analyses to determine the extent of the problem and gather current data. Further bench-scale experiments were performed to characterize the physical properties of the aluminum, calcium, iron, and phosphate interactions under WASA's typical conditions. Bench-scale particulate volume measuring and settling tests were also performed. X-ray diffraction with computer modeling of laboratory formulated and field precipitates are presented to further describe, compare, and identify the major elemental species that contribute to this white cloudy water.

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Procedures

Field Sampling

A field sampling plan was developed from three distribution system zones[1] that incorporated white cloudy characteristics. Within two zones, the distribution location with the highest $\text{color}_{\text{apparent}}$ sample was targeted for Scanning Electron Microscopy (SEM) and Electron Detector System (EDS) analysis conducted by the University of Washington. The sampling method was to collect a sample from a hydrant after flushing for 15 minutes at a rate of 250 gpm. Flushing at this flow rate and time allows for cleaning of the hydrant line while also collecting loose debris in the main. Individual constituents were analyzed using HACH methods. Correlation attempts were then made to determine each constituent's effect on apparent color.

Scanning Electron Microscopy (SEM) was employed in an attempt to identify any distinct mineralogical or crystallographic forms within the precipitate mass captured in the field sampling program. The solid precipitates were captured and concentrated on nitro cellulose filters (0.45 micron). This analysis was conducted at the University of Washington using a JEOL 4800 LV SEM system with an EDAX module.. In order to enhance the imaging capability of the instrument and avoid surface charging, the filtered specimens were sputter coated with gold. However, even given this precaution it was impossible to identify any distinct morphologic forms within the precipitate filter cake. The macroscopic character of the collected particles was largely indistinguishable, consisting entirely of amorphous (non-crystalline) particulate matter.

The Energy Dispersive X-ray Spectrometer (EDS) analysis was conducted utilizing a diffractometer producing Copper K-alpha (K_a) radiation controlled by manufacturer supplied software. This analytical technique could successfully determine both the elemental atomic distribution of the filtered precipitates, as well as respective elemental mass distribution.

Bench Scale Testing

Bench-scale experiments evaluated metal salt formations within typical WASA distribution water. Aluminum, calcium, and iron interactions from typical to elevated levels[2] of phosphate were investigated with several batch experiments. Each batch reactor consisted of a 1000 ml beaker, a variable speed mixer, and stir bar. Stock solutions of orthophosphate, aluminum, calcium, and iron were prepared from 60% phosphoric acid, aluminum sulfate solution, calcium chloride solid and ferric chloride solid, respectively.

The tap water used for all experiments was drawn from the entry point containing approximately 3.2 mg/L of phosphate as PO_4. Four batch reactions were conducted, each batch containing a different constituents; aluminum, calcium, iron and phosphate. Each constituent was added at incremental concentrations to the batch reactors. Lime or potassium hydroxide was added for pH adjustment when necessary to maintain a pH of 7.5, equivalent to average pH levels found in WASA's distribution system.

After each chemical addition, the mixture was stirred at 10 rpm for 2 minutes, then reduced to 2 rpm to minimize floc breakup. Slow mixing continued for approximately 30 minutes. Samples were drawn while the mixture was stirring. $\text{Color}_{\text{apparent}}$, pH, and the relevant metals were measured.

All water samples were analyzed using a HACH 890 colorimeter, reagents, and procedures. Each reactor was observed and analyzed after each metal addition and at a final 24-hour retention time.

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[1] Zones are grouped by water usage and pressure within the distribution system

[2] These residual level amount was taken from the review of historical data of distribution system and identifying the highest value recorded.

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Additionally, a separate series of experiments are presented under the section: Evaluation of Iron Phosphate Formation. This series of experiments was performed to visually evaluate ferric particulate formation under three conditions; de-ionized water, tap water, and tap water plus elevated phosphate

Experimental overview

Scenario I. Evaluation of Aluminum Phosphate interaction in color$_{apparent}$ development

Aluminum addition

Incremental doses of 0.1 ppm of Al^{3+} to reach a maximum cumulative dose of 0.6 ppm were added to entry point tap water with a phosphate residual of 3.5 mg/L as PO_4.

Scenario II: Evaluation of Calcium Phosphate interaction in color$_{apparent}$ development

Calcium addition

The Langlier Saturation Index (LSI) of the distribution system water was calculated, to maintain the LSI value below the threshold value for which calcium carbonate precipitation begins. Therefore, Calcium chloride solution was added at 25 ppm Ca^{2+} per increment, and the final value was 213 ppm Ca^{2+}. Additions of HCl and KOH solutions were added to keep pH at approximately 7.6.

Scenario III: Evaluation of Iron Phosphate interaction in color$_{apparent}$ development

1. **Iron addition**

   Ferric chloride was added in increments of 0.20 ppm Fe^{+3} to a final cumulative concentration of 1.88 ppm. Orthophosphate was kept at constant value of 3.5 ppm. To correct the drop in pH, lime solution was added to increase the pH to 7.5. To account for the lime imparting color, a lime blank was developed.

2. **Constant Fe^{3+} ion concentrations in three environment**

   HACH Iron standard solution (ferrous sulfate dissolved in an acidic medium) was added to three 300 ml glass reactors—two with distribution system water and one with de-ionized water. The final iron concentration for each reactor was approximately 2.30 mg/L. Phosphate standard solution was added to increase the concentration of orthophosphate to 11.8 mg/L. To oxidize ferrous ion to ferric ion, 2 ml of sodium hypochlorite (15%) (1200 mg/L) was added to the mixture. The pH of the mixture was maintained at 7.0 – 8.0 with addition of potassium hydroxide.

   The mixing of this experiment differed from the others. The mixture was stirred at 8 rpm for 2 minutes, then reduced to 2 rpm for approximately 30 minutes. The mixture was measured for iron, phosphate, pH, and color$_{apparent}$ readings, after a 24-hour reaction period.

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Table 1. Summary of various batch experiments scenarios

Scenario	Experiment	Al, mg/L	Fe, mg/L	PO4, mg/L	Ca, mg/L
I. Aluminum-Phosphate interaction	1.Orthophosphate addition	0.406	-	3.2 - 16.0	-
	2.Aluminum addition	0 - 0.6	-	3.2	-
II. Calcium-Phosphate Interaction	1.Orthophosphate addition	-	-	2.8 – 6.8	175
	2.Calcium addition	-	-	3.8	113 - 238
III. Iron-phosphate Interaction	1.Iron addition	-	0.1 - 1.88	3.5	-
	2.Phosphate addition	-	2.3	3.5 - 11.8	-

Table 2. Initial tap water quality

PO4, mg/L	Al, mg/L	Color	Fe, mg/L	pH	Temp
3.2	0.000	0	0.02	7.56	18.9

Floc Volume Measurements

Additional bench-scale experiments were conducted to quantify the particulate or floc formed under varying phosphate doses and fixed concentration of iron, aluminum, and calcium. An Imhoff cone was used to quantify the volume of precipitate formed. Floc volume was measured in mL/L at intervals of 24, 40, 46, and 106 hours. A summary of metal and phosphate concentrations added is located in Table 3.

Experiment 1 Floc volume measured due to ferric-phosphate interaction

Ferric chloride was added to each beaker, producing 2.0-mg/L ferric. Phosphate addition varied from 2.6 to 20.0 mg/L among the five beakers.

Experiment 2. Floc volume measured due to aluminum -ferric-phosphate interaction

The same procedure was followed as in experiment 1 with the addition of 0.7 mg/L aluminum.

Experiment 3. Floc volume measured due to calcium -ferric-phosphate interaction.

The same procedure was followed as experiment 1, with the addition of 230 mg/L calcium.

Table 3. Summary of experimental conditions in measuring floc volume

Experiment	Fe, mg/L	PO4, mg/L	Al, mg/L	Ca, mg/L	Time intervals in floc measurement, hrs
Ferric-phosphate interaction	2.0	2.6 – 20.0	-	-	24, 40, 46 & 106
Aluminum - ferric-phosphate interaction	2.0	2.6 – 20.0	0.7	-	24, 40, 46 & 106
Calcium -ferric-phosphate interaction	2.0	2.6-20.0	-	230	24, 40, 46 & 106

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RESULTS AND DISCUSSION

FIELD DATA ANALYSIS AND INTERPRETATION

Scanning Electron Microscope (SEM) and Electron Detector System (EDS) analysis of particulates from distribution system with cloudy water

Cloudy water samples collected from the two highest apparent color locations in the distribution system were filtered with 0.45 micron filter paper. The collected particulates were analyzed using SEM method. The spectra of the constituent elements are tabulated in Tables 4 and 5 and Figures 1.1 and 1.2.

Table 4. Percentage composition of precipitates of cloudy water in distribution 1

Distribution 1 (H1)	Element	N	F	Na	Mg	Al	Si	P	S	Cl	K	Ca	Fe	Cu
Spectra	Wt %	6.53	4.11	1.08	6.50	6.11	1.77	6.13	0.79	0.72	0.54	49.69	14.74	0.61
	At%	15.23	7.07	1.54	8.74	7.40	2.06	6.47	0.80	0.67	0.45	40.52	8.63	0.31

Table 5: Percentage composition of precipitates of cloudy water in distribution 2

Distribution 2 (H2)	Element	N	F	Na	Mg	Al	Si	P	S	Cl	K	Ca	Fe	Cu	Pb
Spectra	Wt %	5.91	5.20	0.00	8.47	9.27	1.43	8.45	0.41	0.28	0.23	50.51	8.49	0.86	0.49
	At%	13.32	8.64	0.00	11.00	10.85	1.61	8.62	0.41	0.25	0.18	39.81	4.8	0.43	0.08

Fig 1.1 Percentage composition of particulates in distribution zone 1

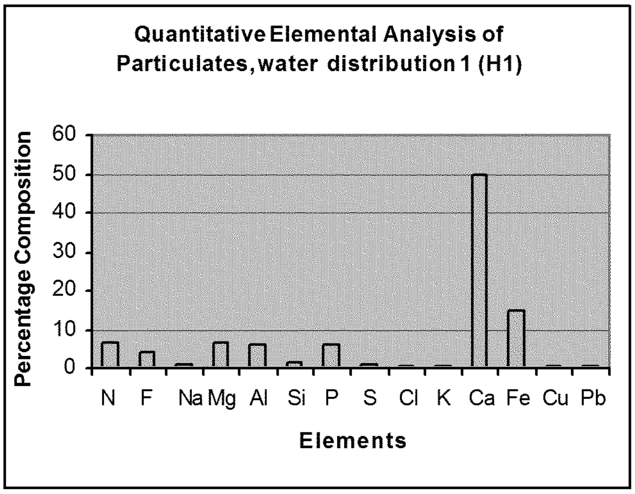
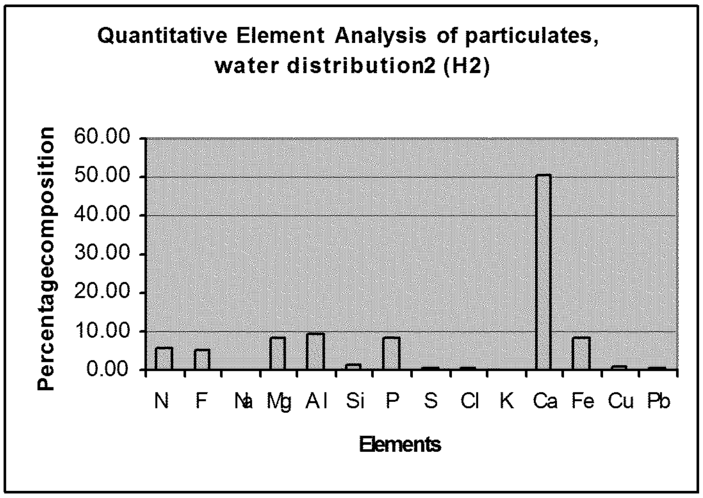


Fig 1.2. Percentage composition of particulates in distribution zone 2



As shown in the graphs, the percentage composition of the water samples from two distribution sites is very similar. The elemental percentage composition of the particulates shows the predominance of calcium (40% –50%); moreover, aluminum, iron, and phosphorus constitute a major part of the particulates.

Individual Constituents vs. Apparent Color

WASA collected and analyzed hydrant samples from three different zones in the distribution system where white cloudy water was previously observed. All field samples collected for this analysis had a white cloudy appearance. Data were analyzed by area (or zone) to show if various phosphate compounds versus $color_{apparent}$ relationships differ within the distribution system and if an individual constituent had a strong correlation.

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Aluminum and iron measured in the analyzed zones are expressed in the following figures as total aluminum phosphate and total iron phosphate to demonstrate metal phosphate particulate. This was done based on empirical formulas and the assumption that the metal reacted with the phosphate and was the limiting reactant. Calcium precipitate is the difference between total Ca^{2+} value measured in solution and Ca^{2+} value in the filtrate.

Distribution Zone #1

As iron, aluminum, phosphate and calcium precipitate increased, $color_{apparent}$ was observed to increase.

Fig 1.1

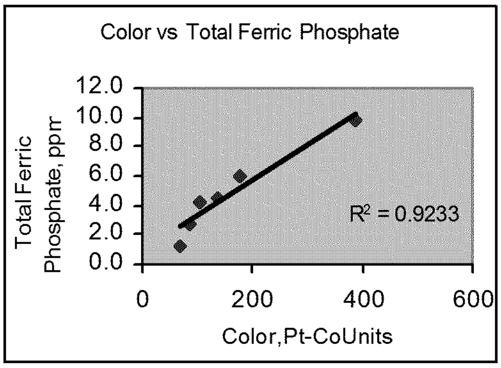
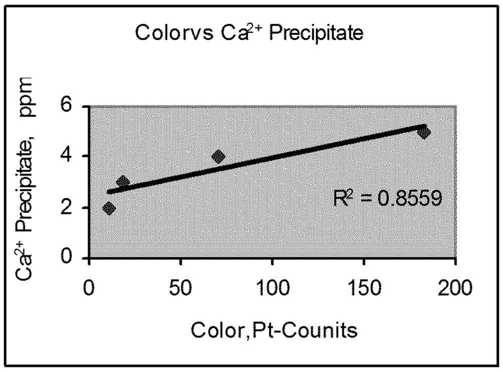


Fig. 1.2



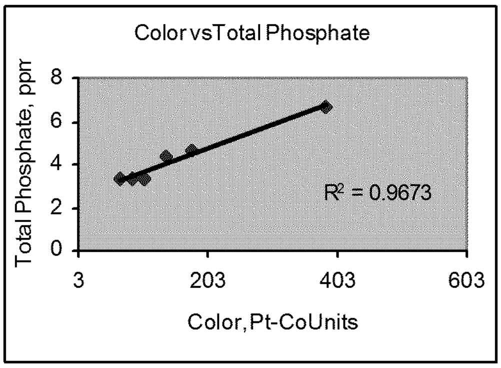


Fig 1.3

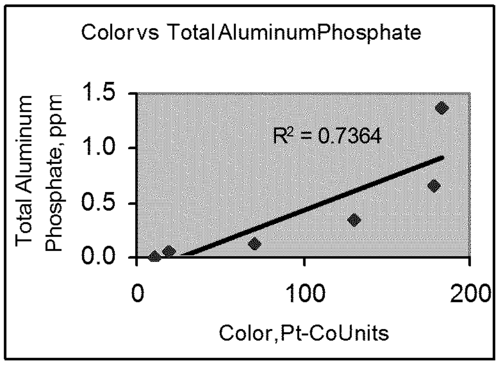


Fig 1.4

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Distribution Zone #2

Fig. 2.1

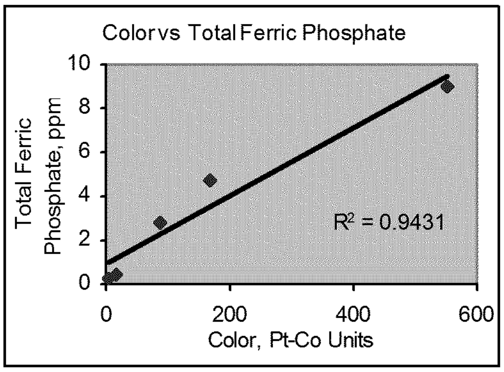
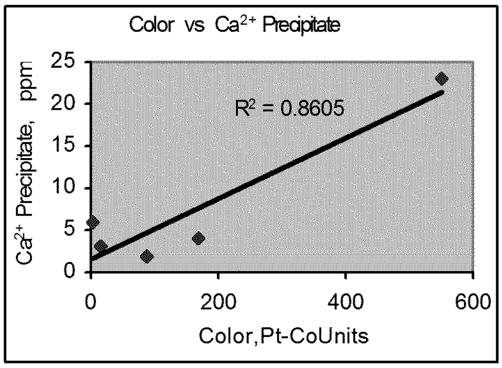


Fig 2.2



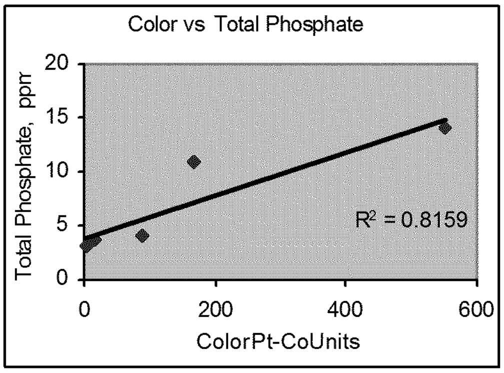


Fig 2.3

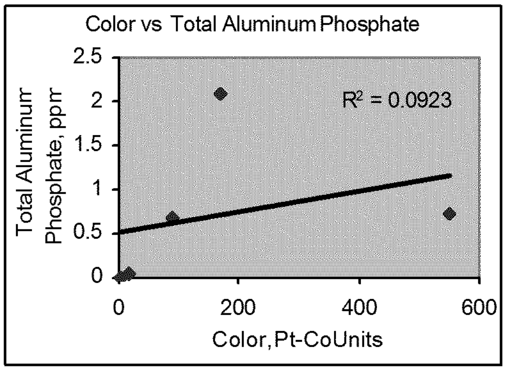


Fig 2.4

Distribution Zone #3

Fig 3.1

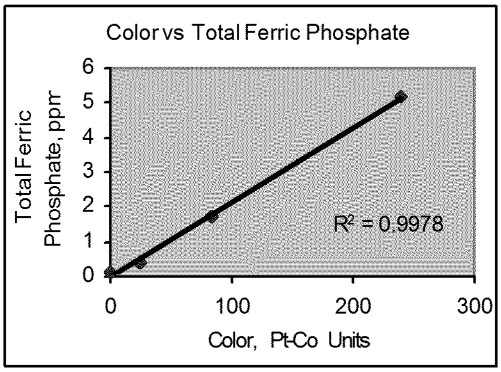
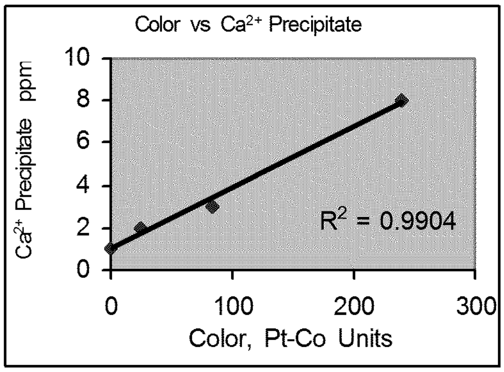


Fig 3.2



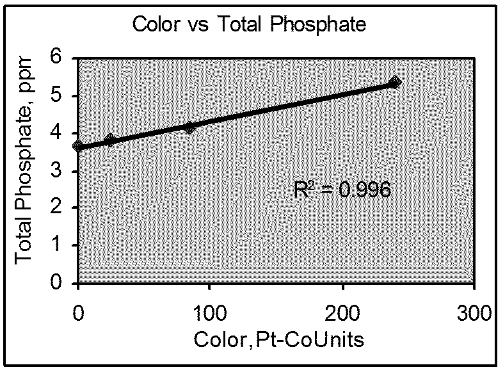


Fig 3.3

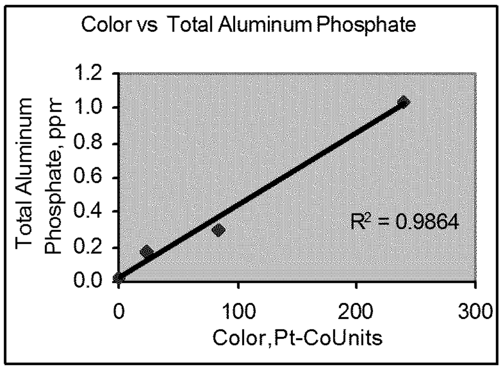


Fig. 3.4

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In all the hydrant zones, the correlation between $\text{color}_{\text{apparent}}$ and phosphate was consistently strong. In addition, ferric and calcium were similar to phosphate R-squared values. This suggests that these two metals may be the major constituents that interact with phosphate to form a precipitate. Aluminum also appears to increase as color increases although the correlation is much weaker.

Overall, average trends appear to indicate that these metal's interaction with phosphate are all involved in cloudy color development.

Bench Scale Experimental Results

I. Results of Metal Phosphate Batch Experimentation

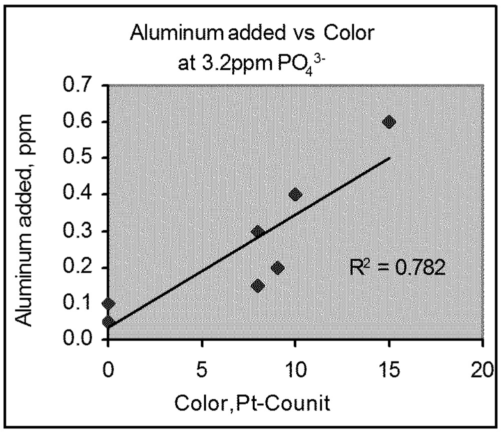
Scenario I. Aluminum and phosphate interaction in particulate formation

Aluminum addition to water with 3.2 mg/L orthophosphate

Figure 4 shows that as phosphate increases, $\text{color}_{\text{apparent}}$ increases, though the linear regression value is only 0.782. $\text{Color}_{\text{apparent}}$ values were extremely low in the bench scale test compared to $\text{Color}_{\text{apparent}}$ values found in the distribution zones

Figure 4.

Aluminum addition

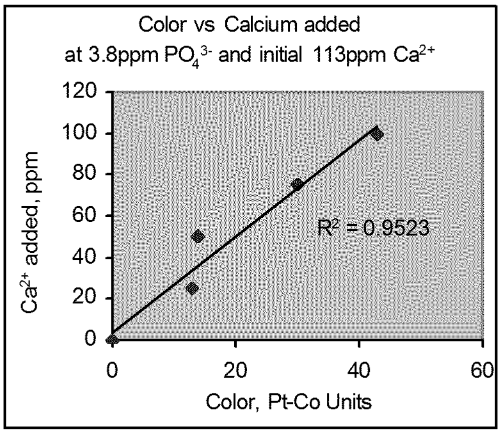


Scenario II. Calcium and phosphate interaction in color formation

Calcium addition to water with phosphate levels of 3.8 mg/L

Figure 5 displays a maximum $\text{Color}_{\text{apparent}}$ value of 43 Pt-Co units with $\text{Color}_{\text{apparent}}$ values increasing as calcium hardness increases. This graph illustrates similar trends compared to the distribution analysis conducted in Figures 1.2, 2.2 and 3.2, in which, $\text{color}_{\text{apparent}}$ values appear to be a function of calcium concentration.

Figure 5.
Calcium addition



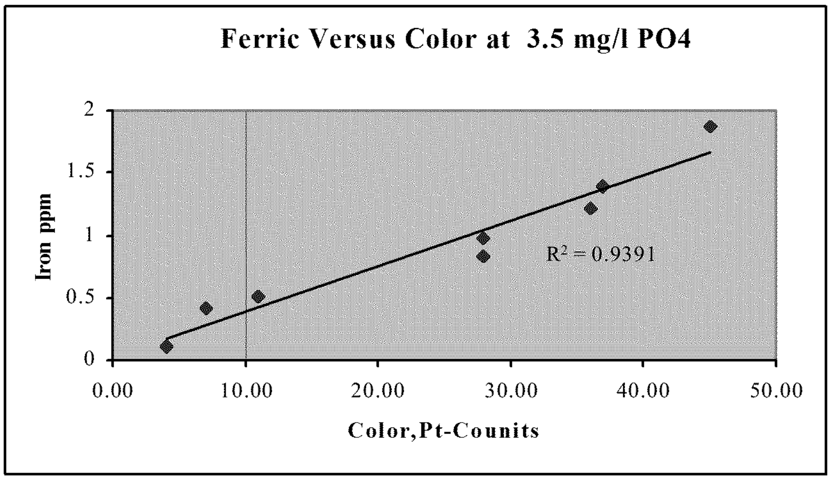
Observations of batch reactors after the 24hr-holding period showed almost no particles had settled.

Scenario III: Iron addition to tap water with phosphate

1. Iron addition to water with 3.5 mg/L orthophosphate

This experiment was done under controlled pH. The pH of the water was maintained around 7.5 with the addition of lime. It was observed that cloudy flocs were formed, and the results show that $\text{color}_{\text{apparent}}$ progressively rose as the concentration of iron increased.

Figure 6.
As the concentration of ferric increases, $\text{color}_{\text{apparent}}$ increases.



In harmony with field data of cloudy water from the distribution system, this bench scale experiment further shows that iron-phosphate interaction could cause formations of particulates to make the water cloudy. Moreover, noticeable amount of particles of a light brown hue settled at the bottom.

2. Constant Fe^{3+} ion concentrations in three environment conditions

To further investigate iron particulate formation, a bench scale experiment was conducted for iron under three conditions (see Table 6). This experiment showed a change of particulate appearance when phosphate levels were changed. Experiment A is a ferric oxide particulate

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and experiment C is predominately ferric phosphate. These results suggest that changing phosphate concentration changes particulate appearance.

Table 6. Appearance of particulates changes as the concentration of phosphate changes

Experiment	**A**	**B**	**C**
Conditions	De-ionized water + Iron	Tap water + Iron	Tap Water + Iron + Phosphate
Ferric Iron, mg/L	2.29	2.30	2.21
PO_4, mg/L	0.07	3.50	11.80
Ferrous (dissolved) Iron mg/L	0.03	0.02	0.08
PO_4, dissolved, mg/L	0.06	1.02	1.45
$\text{color}_{\text{apparent}}$, Pt-Co	81	57	79
Particulate phosphate %	0	70	87.7
Total Chlorine - Chloramines	0	3.2 mg/L	3.2 mg/L
Visual observations	Orange brown	light brown	White cloudy

Experiment A (DI +iron) produced colloids, brown in color most likely ferric hydroxide. However, experiment B (3.5 mg/L phosphate + iron) produced colloids that were lighter brown than colloids formed in experiment A. Analysis of filtered and collected particulates shows that 2.48 mg/L of phosphate (70%) and almost all the iron were incorporated within. In experiment C particulates were cloudier than in experiments A or B. In Experiment C, out of 11.8 mg/L total phosphate only 1.45 mg/L was dissolved, the remaining 87.7 % of the phosphate was in particulate form, and most of the iron (96.4%) was in particulate form. This shows that the flocs, which are cloudy, are mainly composed of iron-phosphate complexes.

II. BENCH SCALE EXPERIMENTS IN MEASURING FLOC VOLUME

Results from floc volume measuring

1. Ferric- Phosphate Interaction and floc formation

It was observed that flocs formed and developed due to the interaction of ferric with phosphate. The sludge volume measured by the Imhoff cone increased as the phosphate concentration increased. Moreover, the floc volume increased as contact time increases indicating that noticeable particulate formation is likely to occur further out near the ends of the distribution system (Figures 7.1 and 7.2).

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Fig 7.1
Floc volume increases as phosphate increases at 2.0 mg/L Fe

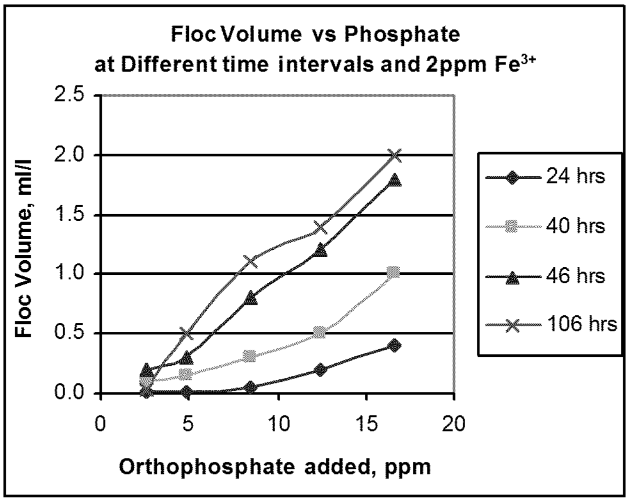
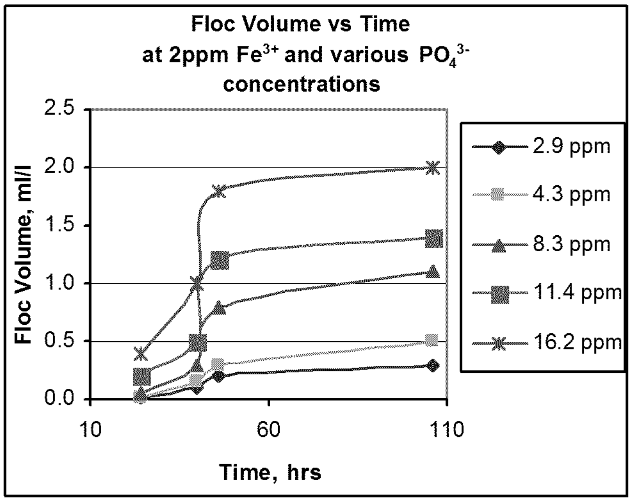


Fig 7.2
Rate of floc formation is fastest at 24-48 hrs.



It was further observed that the rate of floc formation increased after 24 hours. Initially it takes time for the nucleus of floc to be formed; however once the seed of flocs is formed, the rate of floc growth is relatively fast. The floc formation is considerably higher after 24 hrs contact time and there is no considerable increase in floc formation after 48 hrs of contact time, as can be seen in Fig 7.2.

2. Aluminum-Ferric-Phosphate interaction and floc formation

The introduction of 0.7 mg/L aluminum resulted in an increase in floc volume compared with the floc volume formed by interaction of only ferric-phosphate. Aluminum may play a role in enhancing ferric-phosphate interaction in floc formation.

Fig 8.1
Floc volume increases as PO_4 increases at 0.7 ppm Al and 2.0ppm Fe

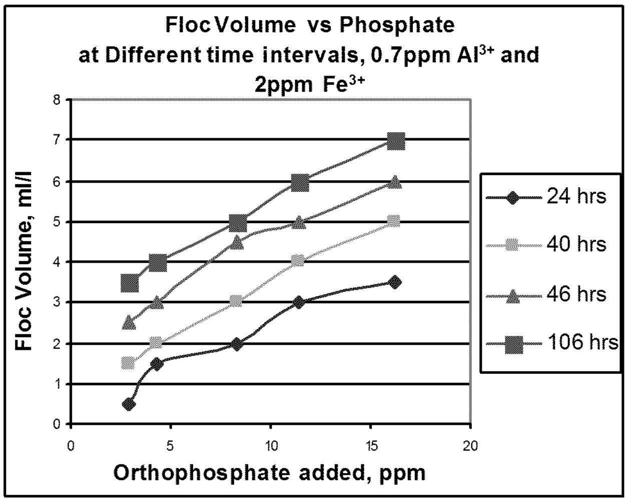
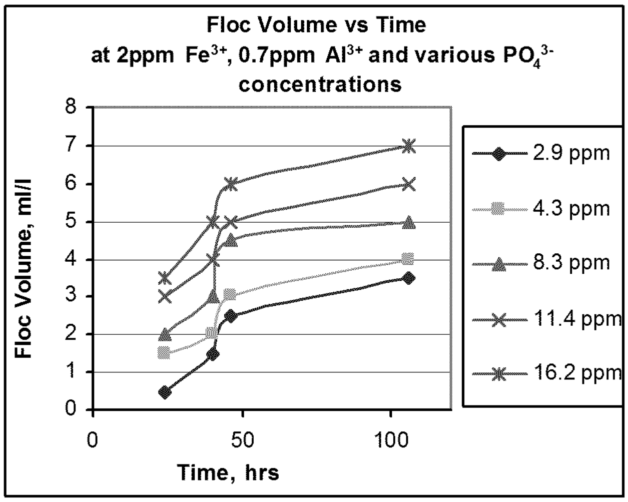


Fig 8.2
Rate of floc formation is fastest 24-48 hrs



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The rate of floc formation is similar as in ferric-phosphate interaction. Floc formation is considerably high at 24 - 48 hrs of contact time.

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3. Calcium-Ferric-Phosphate interaction and floc formation

Similar to the ferric-phosphate experiment, floc formation increased over time producing similar floc volumes. However, increasing concentrations of phosphate seem to have little effect on sludge development in the presence of calcium. This was unexpected and yielded different results compared to batch experiment Scenario II where mixing calcium and phosphate yielded increasing color. However, $\text{color}_{\text{apparent}}$ is not a true measurement of precipitation formation and is not related to the amount of settled precipitate as measured in the Imhoff apparatus. High color and low settled floc volumes may indicate that the floc that formed under the influence of calcium has a tendency to remain in suspension.

Fig 9.1
Floc volume was the same as phosphate increased at 230ppm Ca and 2.0ppm Fe

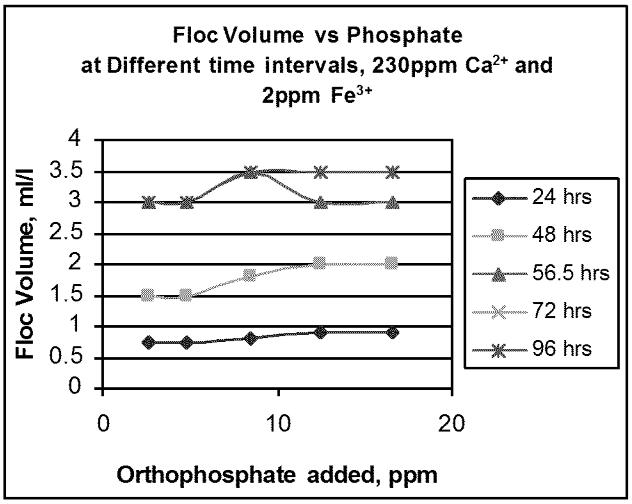
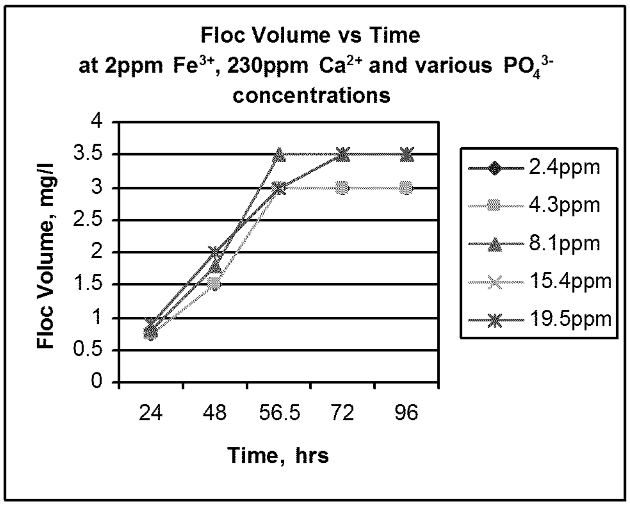


Fig 9.2
Rate of floc formation is fastest at 48-60 hrs



Conclusions

- High levels of phosphate (3.2 mg/L) in the presence of metal ions formed flocs in the distribution system, which produces the white cloudy appearance. Major constituents found in the particulate consisted primarily of phosphorous, iron, calcium, magnesium and aluminum by weight. However, based on phosphate's greater affinity for iron oxides than all other inorganic or organic anions (Appenzeller et al), it maybe assumed that iron-phosphate interaction plays a more pronounced role in flocs produced in the distribution system than the other metals studied.

- Other metal ions within the distribution can be incorporated within the iron phosphate flocs, influencing particulate characteristics.

- Aluminum may increase floc volume in the presence of ferric-phosphate, although it was not definitive from the data.

- Formation of precipitation in the presence of high calcium and iron concentrations may not be dependent on phosphate concentrations as shown in Figure 9.1. However, Figures 5 and 6 show a direct correlation of increased apparent color as each constituent's concentration was increased in the presence of phosphate, but in the absence of the other constituent.

- Formation of particulate phosphate can be complex in drinking water thus indicating the need for further study with phosphate-metals reactions, particulate formation and characteristics and volume of precipitate formed.

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To: Porter, Andrea[porter.andrea@epa.gov]; Crooks, Jennifer[crooks.jennifer@epa.gov]; Shoven, Heather[shoven.heather@epa.gov]
From: Poy, Thomas
Sent: Mon 8/31/2015 4:09:04 PM
Subject: FW: Flint
Tesfai et al wqtc_2006_mon13-2.pdf

FYI…technical info from Mike.

Tom

Tom Poy

Chief, Ground Water and Drinking Water Branch

USEPA - Region 5

(312) 886-5991

From: Schock, Michael
Sent: Monday, August 31, 2015 7:25 AM
To: Deltoral, Miguel; Poy, Thomas
Cc: Lytle, Darren
Subject: RE: Flint
Importance: High

Hi, Tom/Miguel;

I know what paper he's referring to, and as usual, there are a lot of competing variables. It's a significant reason why the LCR was intended to require corrosion control studies before making significant treatment changes. For a given set of background water chemistry variables (Cl, NOM, alkalinity , pH, sulfate, etc.), and a given set of plumbing materials, the water system needs to verifiy what water chemistry adjustments need to be made, *together.* I talked to Marc about this issue last week. It is true that in some waters, orthophosphate might aggravate galvanic corrosion, short-term. How long is short and how much aggravation? No way to know. And his experiments use new solder on new copper, which would not (or should never) be the case in Flint. This is another reason why, when there is partial lead service line replacement, regardless of local plumbing codes, *the utility must use dielectric insulators or use plastic replacement pipe.* London, ON, pioneered the latter. I have contact information for them, if it's needed. They have years of experience. The first is a no-brainer, but in most cities, there has not been oversight, so nobody knows if they really did it.

What we do know, and what Marc and I talked about last week, was that *when there are lead service lines present (and Flint has tens of thousands, as far as I know), there are ONLY 2 corrosion control treatment approaches that can work: PbO2 scales, or orthophosphate dosing.* Given the old distribution system, the difficulty in maintaining chlorine residuals, the obvious issues with chlorine reactivity in the water to form DBPs, and the massive iron corrosion and release that has been observed at times, I would guess (without detailed water chemistry characterization) with some confidence that PbO2 scale formation could not be achieved in any reasonable length of time in Flint. It should be a consideration, along with full LSL replacement, as a long-term objective. But I don't think they could achieve the conversion of existing pipe scales without holistically addressing chlorine demand, pH and ORP maintenance issues, plus the unknown of what the during- and post-Detroit water scales were and what the conversion pathway and rate would be to get them to PbO2.

They have too much hardness and too much iron corrosion to even think about raising the pH to the mid-9s to pursue a pH/alkalinity optimization strategy, and with the papers from the last decade showing elevated lead levels in the LSLs of systems with good 90th percentile first draw, first liter results, I think that's not a very promising approach, anyway.

The encouraging thing is that the compilation of over a decade and a half of monitoring at the tap in the UK, where orthophosphate dosing is essentially universal, and they've looked at both LSL and non-LSL sites, is that there's overall improvement by over an order of magnitude, even with non-LSL sites, looking at the data in aggregate. It practice, the mass of lead contamination and exposure potential from the LSLs almost certainly outweigh the old solder issue. Promoting and enforcing the lead-free requirements for brass faucets and in-line devices will also reduce the significance of galvanic corrosion in the future.

The Flint situation calls for a combination of pipe rig-type simulation studies, and perhaps, a partial system isolation demonstration study, like DC did in late summer 2004.. The LCR sampling when they were connected to Detroit, suggests that the phosphate-treated Detroit water did not aggravate galvanic corrosion. That would have been picked up in the 1st L, even with pre-flushed samples. So, they have a new water chemistry situation now, that was not tested before the change, from what I can tell.

Adding orthophosphate to a "dirty" system is not as simple as just turning on a chemical feed. As DC found out (paper attached), alum carry-over can be a complication, undissolved lime from pH adjustment can be a problem, etc. And, severe iron corrosion that exceeds the capability of the orthophosphate to passivate the iron scales. Porous iron scales would necessitate elevated phosphate doses for an extended period of time (months to years), and a period of discolored water may occur during that passivation time, as loose distribution system scales become mobile because of particle surface charge changes. A strong unidirectional flushing problem to clean out corroded iron lines and a long-term O&M plan to keep the distribution system (including storage tanks in the DS) clean enough to improve disinfectant stability and corrosion inhibitor performance.

I'm truly sorry that the system plunged into the expense of building a new plant (rather than remaining connected to the Detroit water) without proper planning and study with respect to corrosion control and metal release implications of the change of water into an old, existing distribution system. It really complicates the cost considerations when comparing staying on the "new" water and fixing the treatment and distribution system issues, versus reconnecting to the Detroit water. And it necessitates some "optimization" studies to mitigate the lead release. Our prior experience with systems from which full profiles of LSL sites by samples from tap to main all point to lead release being generally 3 to 8 times higher than the first-liter samples suggest, when Pb(II) is the form of lead present in the pipe scales. I'm sure it is in Flint. So simply meeting the AL with the current LCR sampling protocol does not assure typical exposures to lead would be low enough to produce minimal impacts on BLLs and cognitive development in the vulnerable population.

--Mike

From: Deltoral, Miguel
Sent: Monday, August 31, 2015 6:57 AM
To: Poy, Thomas
Subject: Re: Flint

Yep. That was the paper I had in mind. The solder is one issue wrt galvanic corrosion and the other would be galvanic corrosion after partial LSLR. We have no documentation on LSLs in Flint so I can't characterize the potential scope of the problem with PLSLR. The only information we have on LSLs in Flint is from the folks that put in the new service at the Citizen name / Ex. 6 place and they said that the LSLs they have seen (their experience) have mostly been on the public side (main to curb), but they have seen full LSLs in Flint as well.

If you want, I can see if Mike is available for a call today. Just let me know as soon as you can. I have been up since about 2am and will likely quit early today.

Miguel A. Del Toral

Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

From: Poy, Thomas
Sent: Friday, August 28, 2015 03:08 PM
To: Deltoral, Miguel
Subject: Flint

Miguel: Did you see that in the last of Marc's articles on the website that he makes a statement that Flint River water is so corrosive that adding orthophosphate may not help and may make things worse?

"Flint River is very corrosive for iron and lead materials, compared to the water previously purchased from Detroit. Orthophosphates that are commonly added to corrosive waters to minimize lead leaching from aged water distribution pipes made of or containing lead, but water from the Flint River is so corrosive that use of orthophosphate might not provide the normal benefits and might actually make things worse."

One of the links takes you to a paper about phosphates increasing galvanic current between tin and copper, which would affect leaded solder in premise plumbing.

Tom

Tom Poy

Chief, Ground Water and Drinking Water Branch

USEPA - Region 5

(312) 886-5991

To: Lytle, Darren[Lytle.Darren@epa.gov]; Poy, Thomas[poy.thomas@epa.gov]; Crooks, Jennifer[crooks.jennifer@epa.gov]; Deltoral, Miguel[deltoral.miguel@epa.gov]
From: Shoven, Heather
Sent: Mon 8/31/2015 5:57:56 PM
Subject: FYI on Flint Citizen Inquiry: U.S. EPA Lead Expert

Hi Darren, Tom, Jen, and Miguel –

I am forwarding my response to the citizen inquiry for the names of EPA lead experts. I will let you know if I receive any further inquiries.

Best wishes,

Heather

Heather A. Shoven | Enforcement Team Leader | U.S. Environmental Protection Agency, Region 5

Ground Water and Drinking Water Branch | 77 W. Jackson Blvd (WG-15J) | Chicago, IL 60604 | 312-886-0153

From: Shoven, Heather
Sent: Monday, August 31, 2015 12:56 PM
To: Personal Address / Ex. 6
Subject: U.S. EPA Lead Expert
Importance: High

Dear Citizen name / Ex. 6

Thank you for your call on Friday.

In follow-up to your inquiry on U.S. EPA lead experts, I had a conversation with Dr. Darren Lytle, who is the Acting Chief of the Treatment Technology Evaluation Branch in the Water Supply and Water Resources Division within EPA's Office of Research and Development. Scientists within Dr. Lytle's branch have expertise in drinking water treatment including corrosion control to address lead contamination. We passed along Dr. Lytle's information to both MDEQ and Flint's Mayor, Dayne Walling, for consideration to work with Flint's Technical Advisory Committee.

You mentioned that you wanted to provide the Flint City Council with this information since Mayor Walling has not shared EPA's assistance offer with the Council. I have left a voicemail message with Councilwoman Monica Galloway regarding your inquiry since it is critical that the Council work with the City and the State to discuss next steps for the Flint Water system.

Please let me know if you have any follow-up questions.

Best wishes,

Heather

Heather A. Shoven | Enforcement Team Leader | U.S. Environmental Protection Agency, Region 5

Ground Water and Drinking Water Branch | 77 W. Jackson Blvd (WG-15J) | Chicago, IL 60604 | 312-886-0153

To: Shoven, Heather[shoven.heather@epa.gov]
From: Crooks, Jennifer
Sent: Mon 8/31/2015 6:09:18 PM
Subject: RE: FYI on Flint Citizen Inquiry: U.S. EPA Lead Expert

This is REALLY good, Heather! Thank you!

From: Shoven, Heather
Sent: Monday, August 31, 2015 12:58 PM
To: Lytle, Darren; Poy, Thomas; Crooks, Jennifer; Deltoral, Miguel
Subject: FYI on Flint Citizen Inquiry: U.S. EPA Lead Expert
Importance: High

Hi Darren, Tom, Jen, and Miguel –

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Best wishes,

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Ground Water and Drinking Water Branch | 77 W. Jackson Blvd (WG-15J) | Chicago, IL 60604 | 312-886-0153

To: Poy, Thomas[poy.thomas@epa.gov]
Cc: Deltoral, Miguel[deltoral.miguel@epa.gov]; Crooks, Jennifer[crooks.jennifer@epa.gov]; Shoven, Heather[shoven.heather@epa.gov]
From: Porter, Andrea
Sent: Mon 8/31/2015 6:19:03 PM
Subject: links to update flint water news

Hi All,

Today, activists delivered a petition (with ~27,000 signatures) asking Flint to immediately switch back to Detroit water:

http://www.abc12.com/news/headlines/Crowd-gathers-outside-Flint-City-Hall-demands-switch-to-Detroit-water--323442421.html

And, in case you haven't checked the Marc Edwards Flint site today, there are more Pb results posted:

https://flintwaterstudyupdates.wordpress.com/

"Analysis of water samples from an additional 72 Flint homes are concerning

August 31, 2015 flintwaterstudy Articles

Over the weekend, we analyzed another 72 lead samples collected by Flint residents and mailed to Virginia Tech. For the 120 samples analyzed to date, forty two percent were over 5 ppb, which suggests a serious lead in water problem according to our experience and criteria.

Twenty-three (20% of the 120 samples collected to date) also exceeded the 15 ppb lead action limit. The highest lead sampled in first draw so far was 158 ppb, and the highest sample after 45 second flushing is 1,051 ppb. Six of 120 homes sampled (5%), had over 15 ppb lead even after 2 minutes of continuous flushing.

The 90%'ile lead level in the Flint Water Study is currently 30 ppb, which is double the EPA standard applied to homes with "worst case" lead plumbing, and in a range where water consumption has caused lead poisoning in children and adverse pregnancy outcomes. Needless to say, these data are very worrisome, especially considering that our survey did not target "worst case" lead plumbing systems as is required for EPA sampling.

Look at our summary page here for more details. We just heard that we are approaching the 250 (out of 300) mark of returned kits and we couldn't be more grateful and proud of Flint's citizen scientists. Please continue collecting samples, as larger number of samples helps to draw stronger conclusions. More samples may also help Flint residents understand what regions of the city and the types of plumbing systems that have the most serious lead problems. We are also contacting homes with high lead levels via phone and email and all sampled residents will receive their results via regular mail."

There's also this part about how residents with high results in the first round were called:

"Informing Flint Residents about lead in their water

All Flint residents who returned their lead kits will receive their results via regular mail. You will also receive this document on how to interpret your lead results. For the first 48 lead kits analyzed so far, we have finished calling residents who had considerably high lead in their water. For those we couldn't get through, we left voicemail messages and sent an email."

Thanks,

Andrea Porter

Environmental Engineer

Ground Water & Drinking Water Branch

U.S. EPA, Region 5 (WG-15J)

77 W. Jackson Blvd.

Chicago, IL 60604

Phone: 312-886-4427

Fax: 312-697-2656

To: Porter, Andrea[porter.andrea@epa.gov]
From: Crooks, Jennifer
Sent: Mon 8/31/2015 6:25:10 PM
Subject: RE: links to update flint water news

Yes, Tom would like you to come to the 2pm meeting in his office, if you're available.

Jen

From: Porter, Andrea
Sent: Monday, August 31, 2015 1:19 PM
To: Poy, Thomas
Cc: Deltoral, Miguel; Crooks, Jennifer; Shoven, Heather
Subject: links to update flint water news

Hi All,

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Andrea Porter

Environmental Engineer

Ground Water & Drinking Water Branch

U.S. EPA, Region 5 (WG-15J)

77 W. Jackson Blvd.

Chicago, IL 60604

Phone: 312-886-4427

Fax: 312-697-2656

To: Shekter Smith, Liane (DNRE)[SHEKTERL@michigan.gov]; Richard Benzie[benzier@michigan.gov]; Busch, Stephen (DEQ)[BUSCHS@michigan.gov]
From: Crooks, Jennifer
Sent: Mon 8/31/2015 6:34:44 PM
Subject: FW: links to update flint water news

Today's updates on Marc Edwards' site. His staff is phone calling and emailing results to citizens. Talk at 2.

From: Porter, Andrea
Sent: Monday, August 31, 2015 1:19 PM
To: Poy, Thomas
Cc: Deltoral, Miguel; Crooks, Jennifer; Shoven, Heather
Subject: links to update flint water news

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Environmental Engineer

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U.S. EPA, Region 5 (WG-15J)

77 W. Jackson Blvd.

Chicago, IL 60604

Phone: 312-886-4427

Fax: 312-697-2656

To: Thomas Poy[Poy.Thomas@epa.gov]; Kuefler, Janet[kuefler.janet@epa.gov]; Deltoral, Miguel[deltoral.miguel@epa.gov]; Porter, Andrea[porter.andrea@epa.gov]
Cc: Bair, Rita[bair.rita@epa.gov]; Shoven, Heather[shoven.heather@epa.gov]
From: Crooks, Jennifer
Sent: Tue 9/1/2015 9:41:10 PM
Subject: Notes from our call yesterday with MI DEQ RE: Flint

I thought I would jot down the main points of our discussion yesterday, what we agreed with MDEQ about, and hopefully how to proceed. I think we're all on the same page, so I'd like to send these notes to MDEQ, so we're SURE we're all in agreement about how to proceed. Thank you to Andrea, for her terrific edits!

Please let me know if you have changes. I would like to send this to MDEQ on Thursday.

Jennifer

Date: August 31, 2015

Present: Liane Shekter Smith, Richard Benzie, Steve Busch, (2 other MDEQ staff?), Tom Poy, Andrea Porter, Janet Kuefler, Jennifer Crooks

STRATEGIC NEXT STEPS FOR FLINT TO ADDRESS LEAD CORROSION CONCERNS

Tom Poy discussed Marc Edwards' website, "Flint, MI Water Study Updates" (https://flintwaterstudyupdates.wordpress.com/). The discussion focused on the lead sampling and analytical results Marc Edwards' team posted to their website. Tom emphasized that EPA is not involved with Marc Edwards' work in Flint. Tom mentioned that the Edwards team's samples may not have been analyzed by a certified lab (which is only required for compliance samples) nor taken from sites that qualify as Tier 1 for LCR compliance sampling, but the results give further evidence that lead levels in Flint are trending upward. (The conclusion that there is an increasing trend of lead concentrations at consumer taps builds upon earlier compliance sampling taken by Flint in 2014 and 2015 that showed the 90th percentile of the 1st 6-month sampling period at 6ppb, then the 90th percentile of the 2nd 6-month sampling period at 11ppb.)

The "Flint, MI Water Study Updates" website is putting added pressure on MDEQ and EPA to ensure that Flint addresses their lack of optimized corrosion control treatment in an expedited manner in order to protect the residents from exposure to high lead levels. Richard noted that there are numerous systems across the country that have installed corrosion control treatment, have optimized their corrosion control, but continue to have high lead levels. We all acknowledged that this is true, but we all also acknowledged that to delay installation of corrosion control treatment in Flint would likely cause even higher levels of lead over time as Flint's approximately 15,000 lead service lines are continuously in contact with corrosive water.

Region 5 and MDEQ brainstormed on strategic next steps for Flint to address lead corrosion concerns. These steps included:

1. **Public Education for Flint Residents.** Liane has contacted the Department of Community Health to discuss developing a consumer lead education piece outlining the consumer's responsibilities to lower the lead in their drinking water. The Region was glad to hear of a plan to initiate Lead Public Education. The educational material could include steps consumers can take immediately to reduce their exposure to lead in drinking water (flushing their lines after long stagnation periods, using filters certified to remove lead, etc.) as well as longer term fixes to remove lead sources (for example, financing the cost to remove any part of a lead service line on the owner's property at the same time as Flint is replacing its portion of the lead service line).

2. **Gathering Information on Flint's Future Treatment Plans.** Steve Busch said Flint and their engineering consultants were meeting this week (Sept 1) to discuss conceptually the necessary optimized corrosion control treatment at Flint. Tom Poy shared EPA lead experts' (Mike Schock and Darren Lytle of EPA's Office of Research and Development in Cincinnati) caution against simply adding orthophosphate without first studying the water quality and existing distribution system conditions to ensure that any installed treatment has a good chance of working. EPA lead experts have research and field experience showing the complexity of optimizing corrosion control treatment when water quality is significantly changed, as is the case for Flint.

3. **Offering Flint Free Help from EPA Experts.** Steve Busch has already provided the names of EPA lead experts (Mike Schock and Darren Lytle) to Flint, as has Susan Hedman, R5 Administrator. MDEQ and Region 5 agree that, to successfully control lead corrosion in the distribution system, Flint needs to review this situation holistically, while also addressing the lead issue in an expedited manner.

4. **Laying Groundwork for MDEQ/EPA Collaboration with Flint.** If Flint accepts the offer of technical assistance for optimizing corrosion control, Tom Poy suggested that MDEQ and EPA lead experts (Mike Schock and Darren Lytle) form a partnership to provide such help. EPA experts are able to provide pipe scale analyses, as well as other laboratory support. Although Flint (using their consultant) bears the ultimate responsibility for designing and

installing corrosion control, MDEQ and EPA experts are willing and able to provide advice throughout the process.

END

Jennifer Kurtz Crooks

Michigan Program Manager

Ground Water and Drinking Water Branch

U.S. EPA Region 5

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312.582.5853 (fax)

To: Crooks, Jennifer[crooks.jennifer@epa.gov]; Poy, Thomas[poy.thomas@epa.gov]; Deltoral, Miguel[deltoral.miguel@epa.gov]; Porter, Andrea[porter.andrea@epa.gov]
Cc: Bair, Rita[bair.rita@epa.gov]; Shoven, Heather[shoven.heather@epa.gov]
From: Kuefler, Janet
Sent: Wed 9/2/2015 12:51:32 PM
Subject: RE: Notes from our call yesterday with MI DEQ RE: Flint

Hi Jen! This looks good. I think that you do cover some of the work that EPA lead experts could offer.

I thought that it was important to include the messages from Liane and Rich re: not emphasizing optimizing of corrosion control treatment as the "fix"—I think that this is a bumpy unknown road, and most of the time with other contaminants we have more confidence that the treatment will result in reduced exposure, but MDEQ definitely did not think that was necessarily the case, especially in the short term.

Janet Kuefler

Ground Water and Drinking Water Branch

State Programs Team Leader

United States Environmental Protection Agency, Region 5

77 West Jackson Blvd. (WG-15J)

Chicago, Illinois 60604

(312) 886-0123

kuefler.janet@epa.gov

From: Crooks, Jennifer
Sent: Tuesday, September 01, 2015 4:41 PM
To: Poy, Thomas; Kuefler, Janet; Deltoral, Miguel; Porter, Andrea
Cc: Bair, Rita; Shoven, Heather
Subject: Notes from our call yesterday with MI DEQ RE: Flint

Attendees: Liane Shekter Smith

Rich Benzie

Steve Busch

Others?

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Region 5 and MDEQ brainstormed on strategic next steps for Flint to address lead corrosion concerns. These steps included:

1. **Public Education for Flint Residents.** Liane has contacted the Department of Community Health to discuss developing a consumer lead education piece outlining the consumer's responsibilities to lower the lead in their drinking water. The Region was glad to hear of a plan to initiate Lead Public Education. (I don't think we necessarily need to add anything here, but do you have any notes on this--It was not really clear from the discussion if this was going to include the required public education language in the reg when a CWs exceeds an AL—I think it should.) The educational material could include steps consumers can take immediately to reduce their exposure to lead in drinking water (flushing their lines after long stagnation periods, using filters certified to remove lead, etc.) as well as longer term fixes to remove lead sources (for example, financing the cost to remove any part of a lead service line on the owner's property at the same time as Flint is replacing its portion of the lead service line). The immediate steps that consumers can take is the critical public health message, since treatment studies, installation and the process of optimizing corrosion control take time and there is no guarantee that these actions will reduce lead below the action level.

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Jennifer Kurtz Crooks

Michigan Program Manager

Ground Water and Drinking Water Branch

U.S. EPA Region 5

77 West Jackson Blvd.

Chicago, Illinois 60604

312.886.0244

crooks.jennifer@epa.gov

312.582.5853 (fax)

To: Crooks, Jennifer[crooks.jennifer@epa.gov]
From: Shoven, Heather
Sent: Wed 9/2/2015 12:53:38 PM
Subject: RE: Notes from our call yesterday with MI DEQ RE: Flint

Hi Jen!

These are great notes. I feel like I was there. Thanks for the cc ☺

Best wishes,

Heather

Heather A. Shoven | Enforcement Team Leader | U.S. Environmental Protection Agency, Region 5

Ground Water and Drinking Water Branch | 77 W. Jackson Blvd (WG-15J) | Chicago, IL 60604 | 312-886-0153

From: Crooks, Jennifer
Sent: Tuesday, September 01, 2015 4:41 PM
To: Poy, Thomas; Kuefler, Janet; Deltoral, Miguel; Porter, Andrea
Cc: Bair, Rita; Shoven, Heather
Subject: Notes from our call yesterday with MI DEQ RE: Flint

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Date: August 31, 2015

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Cc: Bair, Rita[bair.rita@epa.gov]; Shoven, Heather[shoven.heather@epa.gov]
From: Deltoral, Miguel
Sent: Wed 9/2/2015 2:29:55 PM
Subject: Re: Notes from our call yesterday with MI DEQ RE: Flint

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To: Deltoral, Miguel[deltoral.miguel@epa.gov]; Harris, Kimberly[harris.kimberly@epa.gov]; Poy, Thomas[poy.thomas@epa.gov]; Walts, Alan[walts.alan@epa.gov]; Klevs, Mardi[klevs.mardi@epa.gov]; Master, Edward[master.edward@epa.gov]; Singer, Joshua[Singer.Joshua@epa.gov]; Lasky, Lara[lasky.lara@epa.gov]
From: Suero, Maryann
Sent: Thur 9/3/2015 1:38:06 PM
Subject: FYI / Flint Journal : Lead leaches into 'very corrosive' Flint, Michigan, drinking water, researchers say

(I couldn't find where Virginia Tech reported the lead levels from Flint DW, so if anyone does find it, please share…thanks!)

Lead leaches into 'very corrosive' Flint, Michigan, drinking water, researchers say.

Flint drinking water is "very corrosive" and "causing lead contamination in homes," researchers from Virginia Tech University reported online Wednesday, Sept. 2.

Flint Journal, Michigan.

http://www.mlive.com/news/flint/index.ssf/2015/09/new_testing_shows_flint_water.html

To: Crooks, Jennifer[crooks.jennifer@epa.gov]; Poy, Thomas[poy.thomas@epa.gov]; Kuefler, Janet[kuefler.janet@epa.gov]; Porter, Andrea[porter.andrea@epa.gov]
Cc: Bair, Rita[bair.rita@epa.gov]; Shoven, Heather[shoven.heather@epa.gov]
From: Deltoral, Miguel
Sent: Thur 9/3/2015 2:40:36 PM
Subject: Re: Notes from our call yesterday with MI DEQ RE: Flint

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From: Deltoral, Miguel
Sent: Wednesday, September 2, 2015 09:29 AM
To: Crooks, Jennifer; Poy, Thomas; Kuefler, Janet; Porter, Andrea
Cc: Bair, Rita; Shoven, Heather
Subject: Re: Notes from our call yesterday with MI DEQ RE: Flint

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Cc: Bair, Rita[bair.rita@epa.gov]; Shoven, Heather[shoven.heather@epa.gov]
From: Kuefler, Janet
Sent: Thur 9/3/2015 2:47:20 PM
Subject: RE: Notes from our call yesterday with MI DEQ RE: Flint

I think it was us, not the State, that brought this up. I think I just wanted to clarify that we couldn't consider them compliance samples, since a certified lab in needed for that.

Janet Kuefler

Ground Water and Drinking Water Branch

State Programs Team Leader

United States Environmental Protection Agency, Region 5

77 West Jackson Blvd. (WG-15J)

Chicago, Illinois 60604

(312) 886-0123

kuefler.janet@epa.gov

From: Deltoral, Miguel
Sent: Thursday, September 03, 2015 9:41 AM
To: Crooks, Jennifer; Poy, Thomas; Kuefler, Janet; Porter, Andrea
Cc: Bair, Rita; Shoven, Heather
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Present: Liane Shekter Smith, Richard Benzie, Steve Busch, (2 other MDEQ staff?), Tom Poy, Andrea Porter, Janet Kuefler, Jennifer Crooks

STRATEGIC NEXT STEPS FOR FLINT TO ADDRESS LEAD CORROSION CONCERNS

Tom Poy discussed Marc Edwards' website, "Flint, MI Water Study Updates" (https://flintwaterstudyupdates.wordpress.com/). The discussion focused on the lead sampling and analytical results Marc Edwards' team posted to their website. Tom emphasized that EPA is not involved with Marc Edwards' work in Flint. Tom mentioned that the Edwards team's samples may not have been analyzed by a certified lab (which is only required for compliance samples) nor taken from sites that qualify as Tier 1 for LCR compliance sampling, but the results give further evidence that lead levels in Flint are trending upward. (The conclusion that there is an increasing trend of lead concentrations at consumer taps builds upon earlier compliance sampling taken by Flint in 2014 and 2015 that showed the 90th percentile of the 1st 6-month sampling period at 6ppb, then the 90th percentile of the 2nd 6-month sampling period at 11ppb.)

The "Flint, MI Water Study Updates" website is putting added pressure on MDEQ and EPA to ensure that Flint addresses their lack of optimized corrosion control treatment in an expedited manner in order to protect the residents from exposure to high lead levels. Richard noted that there are numerous systems across the country that have installed corrosion control treatment, have optimized their corrosion control, but continue to have high lead levels. We all acknowledged that this is true, but we all also acknowledged that to delay installation of corrosion control treatment in Flint would likely cause even higher levels of lead over time as Flint's approximately 15,000 lead service lines are continuously in contact with corrosive water.

Region 5 and MDEQ brainstormed on strategic next steps for Flint to address lead corrosion concerns. These steps included:

1. **Public Education for Flint Residents.** Liane has contacted the Department of Community Health to discuss developing a consumer lead education piece outlining the consumer's responsibilities to lower the lead in their drinking water. The Region was glad to hear of a plan to initiate Lead Public Education. The educational material could include steps consumers can take immediately to reduce their exposure to lead in drinking water (flushing their lines after long stagnation periods, using filters certified to remove lead, etc.) as well as longer term fixes to remove lead sources (for example, financing the cost to remove any part of a lead service line on the owner's property at the same time as Flint is replacing its portion of the lead service line).

2. **Gathering Information on Flint's Future Treatment Plans.** Steve Busch said Flint and their engineering consultants were meeting this week (Sept 1) to discuss conceptually the necessary optimized corrosion control treatment at Flint. Tom Poy shared EPA lead experts' (Mike Schock and Darren Lytle of EPA's Office of Research and Development in Cincinnati) caution against simply adding orthophosphate without first studying the water quality and existing distribution system conditions to ensure that any installed treatment has a good chance of working. EPA lead experts have research and field experience showing the complexity of optimizing corrosion control treatment when water quality is significantly changed, as is the case for Flint.

3. **Offering Flint Free Help from EPA Experts.** Steve Busch has already provided the names of EPA lead experts (Mike Schock and Darren Lytle) to Flint, as has Susan Hedman, R5 Administrator. MDEQ and Region 5 agree that, to successfully control lead corrosion in the

distribution system, Flint needs to review this situation holistically, while also addressing the lead issue in an expedited manner.

4. **Laying Groundwork for MDEQ/EPA Collaboration with Flint.** If Flint accepts the offer of technical assistance for optimizing corrosion control, Tom Poy suggested that MDEQ and EPA lead experts (Mike Schock and Darren Lytle) form a partnership to provide such help. EPA experts are able to provide pipe scale analyses, as well as other laboratory support. Although Flint (using their consultant) bears the ultimate responsibility for designing and installing corrosion control, MDEQ and EPA experts are willing and able to provide advice throughout the process.

END

Jennifer Kurtz Crooks

Michigan Program Manager

Ground Water and Drinking Water Branch

U.S. EPA Region 5

77 West Jackson Blvd.

Chicago, Illinois 60604

312.886.0244

crooks.jennifer@epa.gov

312.582.5853 (fax)

Cc: Williams, Felicia[Williams.Felicia@epa.gov]
To: Hedman, Susan[hedman.susan@epa.gov]
From: Hyde, Tinka
Sent: Thur 9/3/2015 4:41:06 PM
Subject: Fwd: Flint Meeting

Susan here is the latest on Flint.

Sent from my iPhone

Begin forwarded message:

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Date: September 3, 2015 at 11:30:02 AM CDT
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Cc: "Bair, Rita" <bair.rita@epa.gov>, "Damato, Nicholas" <damato.nicholas@epa.gov>, "Crooks, Jennifer" <crooks.jennifer@epa.gov>, "Shoven, Heather" <shoven.heather@epa.gov>, "Kuefler, Janet" <kuefler.janet@epa.gov>
Subject: FW: Flint Meeting

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Tom

Tom Poy

Chief, Ground Water and Drinking Water Branch

USEPA - Region 5

(312) 886-5991

From: Benzie, Richard (DEQ) [mailto:BENZIER@michigan.gov]
Sent: Thursday, September 03, 2015 9:21 AM

To: Poy, Thomas
Cc: shekterl@michigan.gov
Subject: FW: Flint Meeting

FYI

From: Prysby, Mike (DEQ)
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Cc: Shekter Smith, Liane (DEQ); Busch, Stephen (DEQ)
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Michael Prysby, P.E.

District Engineer

Office of Drinking Water and Municipal Assistance

517 290-8817

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Subject: FW: Flint Meeting

Do we know how this meeting concluded?

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To: Shekter Smith, Liane (DEQ); Benzie, Richard (DEQ)
Subject: Flint Meeting

Liane/Richard:

How did Flint's meeting with their consultant go? Did they decide to implement treatment?

Tom

Tom Poy

Chief, Ground Water and Drinking Water Branch

USEPA - Region 5

(312) 886-5991

To: Hyde, Tinka[hyde.tinka@epa.gov]
Cc: Williams, Felicia[Williams.Felicia@epa.gov]
From: Hedman, Susan
Sent: Thur 9/3/2015 4:42:46 PM
Subject: RE: Flint Meeting

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(312) 886-5991

To: Hedman, Susan[hedman.susan@epa.gov]
Cc: Williams, Felicia[Williams.Felicia@epa.gov]
From: Hyde, Tinka
Sent: Thur 9/3/2015 5:15:08 PM
Subject: RE: Flint Meeting

You may want to call the mayor and acknowledge his commitment and to also say the following:

I hope that Flint will utilize the expertise of MDEQ field staff and ORD distribution system staff to help them identify water quality and pipe conditions that need to be considered in the effective implementation of phosphate treatment.

Thanks

From: Hedman, Susan
Sent: Thursday, September 03, 2015 11:43 AM
To: Hyde, Tinka
Cc: Williams, Felicia
Subject: RE: Flint Meeting

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Liane/Richard:

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Tom Poy

Chief, Ground Water and Drinking Water Branch

USEPA - Region 5

(312) 886-5991

To: Peterson, John[peterson.john@epa.gov]; Cassell, Peter[cassell.peter@epa.gov]; Rowan, Anne[rowan.anne@epa.gov]; Kelley, Jeff[kelley.jeff@epa.gov]; Hyde, Tinka[hyde.tinka@epa.gov]; Henry, Timothy[henry.timothy@epa.gov]
Cc: Bair, Rita[bair.rita@epa.gov]; Damato, Nicholas[damato.nicholas@epa.gov]; Crooks, Jennifer[crooks.jennifer@epa.gov]; Shoven, Heather[shoven.heather@epa.gov]; Kuefler, Janet[kuefler.janet@epa.gov]; Deltoral, Miguel[deltoral.miguel@epa.gov]
From: Poy, Thomas
Sent: Thur 9/3/2015 5:26:58 PM
Subject: RE: Flint water questions from Flint Journal reporter

John: Here are my recommended responses (in red below).

Tom Poy

Chief, Ground Water and Drinking Water Branch

USEPA - Region 5

(312) 886-5991

From: Peterson, John
Sent: Thursday, September 03, 2015 12:13 PM
To: Cassell, Peter; Rowan, Anne; Kelley, Jeff; Hyde, Tinka; Poy, Thomas; Henry, Timothy
Subject: Flint water questions from Flint Journal reporter

Hello,

Ron Fonger, a reporter with MLive Media Group and the Flint Journal newspaper contacted Public Affairs this morning with some Flint water questions. The questions derive from an email from Heather Shoven to a resident (Citizen name / Ex. 6) and the Miguel del Toro memo. His questions appear to follow ACLU investigative reporter Curt Guyette's inquiries in August. Don't know why the Flint Journal suddenly wants answers from us. But can you Water folks answer these questions and also update our July desk statement if necessary?

Here are the questions from the Flint Journal:

•□□□□□□ How is EPA providing assistance to the city and state on the Flint water issue?

EPA has offered the services of distribution system experts from our Office of Research and Development to compliment the MDEQ experts to provide technical assistance to Flint.

•□□□□□□ What is the response from Flint and MDEQ to EPA's offers of assistance?

We have not received a response from Flint.

•□□□□□□ Is EPA officially recommending Flint switch back to Detroit water?

EPA is not officially making any recommendations about the source of Flint's drinking water. The situation needs to be analyzed by the experts.

Should our July desk statement be updated?

DESK STATEMENT

EPA continues to work closely with the Michigan Department of Environmental Quality and the City of Flint to ensure that Flint residents are provided with safe drinking water. EPA conducted limited drinking water sampling for lead in Flint in response to a citizen complaint. The initial results and staff recommendations to management were documented in an internal memorandum, which was cited in the ACLU article. EPA will work with Michigan DEQ and the City of Flint to verify and assess the extent of lead contamination issues and to ensure that Flint's drinking water meets federal standards.

Flint residents who are concerned about lead in their drinking should contact the utility and may request that their water be sampled. Additional information about lead in drinking water is available at http://water.epa.gov/drink/contaminants/basicinformation/lead.cfm.

Here are the EPA answers to questions by the ACLU investigative reporter. Are these still OK or should they be updated?

Mr. Guyette,

Below are responses to your questions and can be attributed to U.S. EPA.

Q. Mr. Del Toral asserts that a city the size of Flint is required to use a corrosion control treatment such as phosphate in their drinking water. Is Mr. Del Toral correct?

Flint and other large drinking water systems are required to evaluate and optimize pipe corrosion control treatment to protect water from contaminants such as lead. When the city started sourcing drinking water from the Flint River in April 2014, the Michigan Department of Environmental Quality determined that Flint should follow the protocol for new systems -- which requires two new rounds of water sampling to determine whether corrosion control treatment is needed. The city has submitted sampling results for the six-month periods from July-December 2014, and from January-June 2015. MDEQ is currently analyzing the sampling data to determine whether corrosion control treatment is needed.

Q. Also, both Mr. Del Toral, and Marc Edwards, an expert on the issue at Virginia Tech, both say that the manner in which Flint conducts its tests is almost certain to minimize the risk and miss worst-case scenarios. What is the EPA's opinion regarding that?

Michigan complies with the Federal Safe Drinking Water Act's protocol which requires that the tap remain unused for at least 6 hours before taking a sample. EPA is currently revising the federal lead and copper rule to address several issues including sampling protocols.

In addition, EPA notes that the water samples taken from the Citizen name / Ex. 6 residence were atypical in two ways:

- □□□□□□ the tap had not been run for over three weeks before the samples were taken. Stagnation can cause higher lead levels, and

- □□□□□□ the home's long service line is configured in an unusual way.

Thanks for your help. I promised the Flint newspaper reporter no time frame but as Anne Rowan noted, I imagine we're almost shutting down tomorrow.

- john

John Peterson

Public Affairs

U.S. EPA Region 5

Chicago, IL

312-886-9858

708-334-7594

To: Hyde, Tinka[hyde.tinka@epa.gov]; Henry, Timothy[henry.timothy@epa.gov]; Bair, Rita[bair.rita@epa.gov]; Damato, Nicholas[damato.nicholas@epa.gov]; Crooks, Jennifer[crooks.jennifer@epa.gov]; Shoven, Heather[shoven.heather@epa.gov]; Deltoral, Miguel[deltoral.miguel@epa.gov]; Kuefler, Janet[kuefler.janet@epa.gov]
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It looks like Flint is taking us up on Mike and Darren helping.

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Tom Poy

Chief, Ground Water and Drinking Water Branch

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(312) 886-5991

From: Benzie, Richard (DEQ) [mailto:BENZIER@michigan.gov]
Sent: Thursday, September 03, 2015 1:20 PM
To: Poy, Thomas
Cc: Crooks, Jennifer
Subject: FW: Flint Water

Tom,

The message below from Mike Prysby provides additional information about the city's plans to install optimal corrosion control. The last sentence indicates that Flint is going to invite additional EPA experts to join their TAC.

Richard

From: Prysby, Mike (DEQ)
Sent: Thursday, September 03, 2015 1:22 PM
To: Benzie, Richard (DEQ); Shekter Smith, Liane (DEQ); Busch, Stephen (DEQ)
Subject: FW: Flint Water

Below is a note from Howard Croft to our TAC team concerning the return to compliance for TTHMs. Howard also briefly discusses the lead issue and the city's plans to install optimal corrosion control.

Michael Prysby, P.E.

District Engineer

Office of Drinking Water and Municipal Assistance

517 290-8817

From: Howard Croft [mailto:hcroft@cityofflint.com]
Sent: Thursday, September 03, 2015 12:28 PM
To: Brent Wright; Dayne Walling; donna. cole; Gerald (Jed) Natzke; Gerald Ambrose; Howard Croft; James Henry; Jason Lorenz; jmikewright; JoAnne Herman; John O'Brien; Kirk Smith; larry.koehler@mcc.edu; Laura Sullivan; Michael Glasgow; Michael Wright; Mike Lane; Prysby, Mike (DEQ); Natasha Henderson; Norb Birchmeier; Pete Levine; Robert Bincsik; rosejo@msu.edu; Russell Hudson; Samir Matta; Warren Green
Subject: Flint Water

Technical Advisory Team,

I am pleased to report that the City of Flint has officially returned to compliance with the Michigan Safe Drinking Water Act and we have received confirming documentation from the DEQ today. The GAC filtering was installed on time and was instrumental in our ability to maintain an average level under the MCL. We anticipate that we will have no further notices going out.

Recent testing has raised questions regarding the amount of lead that is being found in the water and I wanted to report to you our current status.

At the onset of our plant design, optimization for lead was addressed and discussed with the engineering firm and with the DEQ. It was determined that having more data was advisable prior to the commitment of a specific optimization method. Most chemicals used in this process are phosphate based and phosphate can be a "food" for bacteria. We have performed over one hundred and sixty lead tests throughout the city since switching over to the Flint River and remain within the EPA standards.

We are currently designing an optimization plan with the engineering firm that will be presented to the DEQ and upon approval we expect to have it implemented by January 2016. It is worthwhile to note that the DEQ has reported that other cities have taken years to complete an optimization plan and we anticipate having a plan in place over the next four months.

It is also worth noting to this group that there are different lead testing methods used within industry and the city remains consistent with the most recent EPA approved testing method which can produce different results than other methods.

We hope to schedule another TAC team meeting for late September or early October, I will attempt to keep everyone informed and look for the best dates. We are inviting additional EPA experts to become a part of this committee.

Thank you,

--

Howard Croft

Public Works Director

City of Flint

1101 S. Saginaw Street

Flint, MI 48502

PH# 810.766.7135 Ext.2043

hcroft@cityofflint.com

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Flint, MI 48502

PH# 810.766.7135 Ext.2043

hcroft@cityofflint.com

To: Hyde, Tinka[hyde.tinka@epa.gov]
From: Hedman, Susan
Sent: Thur 9/3/2015 6:37:07 PM
Subject: RE: Flint Water

Thanks for the heads up. In that case, I don't think I will reach out to the Mayor.

From: Hyde, Tinka
Sent: Thursday, September 03, 2015 1:31 PM
To: Hedman, Susan
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The message below from Mike Prysby provides additional information about the city's plans to install optimal corrosion control. The last sentence indicates that Flint is going to invite additional EPA experts to join their TAC.

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From: Prysby, Mike (DEQ)
Sent: Thursday, September 03, 2015 1:22 PM
To: Benzie, Richard (DEQ); Shekter Smith, Liane (DEQ); Busch, Stephen (DEQ)
Subject: FW: Flint Water

Below is a note from Howard Croft to our TAC team concerning the return to compliance for TTHMs. Howard also briefly discusses the lead issue and the city's plans to install optimal corrosion control.

Michael Prysby, P.E.

District Engineer

Office of Drinking Water and Municipal Assistance

517 290-8817

From: Howard Croft [mailto:hcroft@cityofflint.com]
Sent: Thursday, September 03, 2015 12:28 PM
To: Brent Wright; Dayne Walling; donna. cole; Gerald (Jed) Natzke; Gerald Ambrose; Howard Croft; James Henry; Jason Lorenz; jmikewright; JoAnne Herman; John O'Brien; Kirk Smith; larry.koehler@mcc.edu; Laura Sullivan; Michael Glasgow; Michael Wright; Mike Lane; Prysby, Mike (DEQ); Natasha Henderson; Norb Birchmeier; Pete Levine; Robert Bincsik; rosejo@msu.edu; Russell Hudson; Samir Matta; Warren Green
Subject: Flint Water

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Thank you,

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Howard Croft

Public Works Director

City of Flint

1101 S. Saginaw Street

Flint, MI 48502

PH# 810.766.7135 Ext.2043

hcroft@cityofflint.com

To: Lytle, Darren[Lytle.Darren@epa.gov]; Schock, Michael[Schock.Michael@epa.gov]
Cc: Bair, Rita[bair.rita@epa.gov]; Damato, Nicholas[damato.nicholas@epa.gov]; Deltoral, Miguel[deltoral.miguel@epa.gov]; Crooks, Jennifer[crooks.jennifer@epa.gov]
From: Poy, Thomas
Sent: Thur 9/3/2015 7:57:11 PM
Subject: FW: Flint Water

Darren/Mike: It looks like Flint is accepting EPA's offer of your help on their lead/distribution system issue. We have not gotten a formal acceptance yet.

Tom

Tom Poy

Chief, Ground Water and Drinking Water Branch

USEPA - Region 5

(312) 886-5991

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Public Works Director

City of Flint

1101 S. Saginaw Street

Flint, MI 48502

PH# 810.766.7135 Ext.2043

hcroft@cityofflint.com

Nonresponsive

Nonresponsive

From: Crooks, Jennifer
Sent: Tuesday, July 28, 2015 8:47 AM
To: Shekter Smith, Liane (DNRE); Richard Benzie; kris philip; Monosmith, Carrie (DNRE); DeBruyn, Dana (DEQ); 'Dettweiler, Dan (DEQ)'; 'Busch, Stephen (DEQ)'; 'Prysby, Mike (DEQ)'; 'cookp@michigan.gov'; 'Holdwick, Kevin (DEQ)'
Cc: 'Thomas Poy'; Bair, Rita; Damato, Nicholas; Shoven, Heather; Kuefler, Janet; Murphy, Thomas; Porter, Andrea; Deltoral, Miguel
Subject: Final Notes from Michigan semi-annual call on 6/10

I was supposed to finalize these in mid-July, but I didn't receive any changes from anyone, so these notes are final now. Thank you all again for participating.

Jennifer

From: Crooks, Jennifer
Sent: Wednesday, July 01, 2015 5:31 PM
To: Shekter Smith, Liane (DNRE); Richard Benzie; kris philip; Monosmith, Carrie (DNRE); DeBruyn, Dana (DEQ); Dettweiler, Dan (DEQ); Busch, Stephen (DEQ); 'Prysby, Mike (DEQ)'; 'cookp@michigan.gov'; Holdwick, Kevin (DEQ)
Cc: Thomas Poy; Bair, Rita; Damato, Nicholas; Shoven, Heather; Kuefler, Janet; Murphy, Thomas; Porter, Andrea; Deltoral, Miguel
Subject: Draft Notes from Michigan semi-annual call on 6/10

All—Below are my draft notes from our call last week, June 10, 2015. Thank you all for participating. I apologize for the delay in getting these out in draft to you all for review—I was hoping to get a couple of items ironed out that were fuzzy during our discussions, but hasn't happened yet. Several ACTION items below. So, please review to make sure I documented our discussion/agreements correctly, and feel free to edit as needed. I you could get back to me by July 13, that would be great. Thank you!

Jennifer

Attendees:

MDEQ: Liane Shekter-Smith, Richard Benzie, Carrie Monosmith, Kris Philip, Dan Dettweiler, Marjorie Rodriguez (Student), Kevin Holdwick, Mike Prysby, Dana DeBruyn, Steve Busch

EPA Region 5: Tom Poy, Rita Bair, Nick Damato, Janet Kuefler, Michele Palmer, Tom Murphy, Heather Shoven, Cary McElhinney, Andrea Porter, Miguel Deltoral, Mostafa Noureldin

Nonresponsive

Nonresponsive

Nonresponsive

Nonresponsive

3. Status of Flint

a. TTHM levels for May—Due to MDEQ district engineer June 10-RECEIVED; see link to results

https://www.cityofflint.com/2015/06/01/may-water-testing-results-show-all-locations-are-within-acceptable-limits-for-tthm/

All samples below the TTHM MCL; one site still has an LRAA above the MCL but decreased from 105 ppb in Feb to 93.5 ppb in May.

Mike Prysby said he is getting ready to issue the construction permit to the City of Flint to install a GAC filter in July, that will remove more TOC to further reduce the potential of developing TTHMs. Mike said he has already issued a construction permit for a transmission line within the City that will help reduce water age.

b. Lead in Flint

Our discussions with MDEQ indicate that no phosphates/corrosion control has been added to the system since April 2014 when the source of drinking water changed to the Flint River. We understand that the City is just finishing up its second set of 6-month initial monitoring for lead; where the results will probably warrant a Corrosion Control Study to be conducted. Since Flint has lead service lines, we understand some citizen-requested lead sampling is exceeding the Action Level, and the source of drinking water will be changing again in 2016, so to start a Corrosion Control Study now doesn't make sense. The idea to ask Flint to simply add phosphate may be premature; there are many other issues and factors that must be taken into account which would require a comprehensive look at the water quality and the system before any treatment recommendations can/should be made. Miguel is recommending MDEQ and EPA? approach Flint about formally requesting EPA's Office of Research and Development in Cincinnati support on the lead in Flint drinking water issue, and request that Mike Schock, ORD, and possibly Darren Lytle, ORD, to participate in Flint's drinking water advisory committee so that a comprehensive evaluation on how to proceed can be discussed.

Miguel provided a brief summary of the high lead results found at the residence of Citizen name / Ex. 6 Citizen name / Ex. 6 in Flint. Miguel will follow up with a written summary of the work conducted, sample results, and conclusions.

Miguel believes that lead levels in Flint are being affected by the lack of Corrosion Control being conducted by the City, since the LCR requires 2 6-month initial monitoring for a new source. Steve Busch stated that in the Lead sampling pool, almost all of the lead sample sites are lead service lines, and the State is not seeing large increases in lead levels at the tap. Miguel suggested that EPA experts in Lead, Mike Schock; and in distribution systems, Darren Lytle, be added to the Flint drinking water advisory committee to assist the City/State in determining the best way to proceed to minimize lead in the City's drinking water during the interim use of the Flint River, and subsequent use of Lake Huron water.

Miguel said he will send Mike Schock and Darren Lytle's contact information to Steve and Mike. Steve pointed out that the City is following the LCR requirements, and completing the requirements in a timely manner. Miguel's point is that since the LCR was promulgated 20+ years ago, that research and different situations, like Washington D.C., have educated scientists, experts, and regulators that the existing requirements in the LCR may not be as protective as previously thought. Thus, he can only make recommendations as to how to revise sampling protocols. And Miguel acknowledges that it may be another year before these regulation changes are promulgated in the Long-Term Lead and Copper Rule. In December 2015, the NDWAC recommendation is expected.

The Region asked the State if the Flint River will be a permanent supplemental source of drinking water, once the City of Flint connects with the Karegdodi pipeline from Lake Huron. Mike Prysby said that the City is currently pumping 22MGD, but the City has 40-50 MG of storage. The City is currently working on reducing its unaccounted for water losses, and these water losses are dropping. The State, through the Governor's office, provided disadvantaged system funding, $2M which includes $900K for lead detection, and pipe inspection.

Nonresponsive

Nonresponsive

Thank you!

Jennifer

shekterl@michigan.gov; 'Richard Benzie' <benzier@michigan.gov>; 'kris philip' <philipk@michigan.gov>; 'Monosmith, Carrie (DNRE)' <MONOSMITHC@michigan.gov>; 'DeBruyn, Dana (DEQ)' <DebruynD@michigan.gov>; Dettweiler, Dan (DEQ) <DETTWEILERD@michigan.gov>; Poy, Thomas <poy.thomas@epa.gov>; Kuefler, Janet <kuefler.janet@epa.gov>; Damato, Nicholas <damato.nicholas@epa.gov>; Shoven, Heather <shoven.heather@epa.gov>; Murphy, Thomas <murphy.thomas@epa.gov>; Bair, Rita <bair.rita@epa.gov>; McElhinney, Cary <mcelhinney.cary@epa.gov>; Pniak, Edward <pniak.edward@epa.gov>; 'cookp@michigan.gov'; 'Prysby, Mike (DEQ)' <PRYSBYM@michigan.gov>; Busch, Stephen (DEQ) <BUSCHS@michigan.gov>

To: Poy, Thomas[poy.thomas@epa.gov]; Schock, Michael[Schock.Michael@epa.gov]
Cc: Bair, Rita[bair.rita@epa.gov]; Damato, Nicholas[damato.nicholas@epa.gov]; Deltoral, Miguel[deltoral.miguel@epa.gov]; Crooks, Jennifer[crooks.jennifer@epa.gov]
From: Lytle, Darren
Sent: Fri 9/4/2015 10:27:49 AM
Subject: RE: Flint Water

Tom,

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Thanks,

Darren

Darren A. Lytle, Ph.D., P.E.

Branch Chief (Acting)

U.S. Environmental Protection Agency

26 West Martin Luther King Dr.

Cincinnati, Ohio 45268

Phone: (513) 569-7432

Fax: (513) 487-2543

email: lytle.darren@epa.gov

From: Poy, Thomas
Sent: Thursday, September 03, 2015 3:57 PM
To: Lytle, Darren; Schock, Michael
Cc: Bair, Rita; Damato, Nicholas; Deltoral, Miguel; Crooks, Jennifer

Subject: FW: Flint Water

Darren/Mike: It looks like Flint is accepting EPA's offer of your help on their lead/distribution system issue. We have not gotten a formal acceptance yet.

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City of Flint

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Flint, MI 48502

PH# 810.766.7135 Ext.2043

hcroft@cityofflint.com

To: Suero, Maryann[suero.maryann@epa.gov]; Harris, Kimberly[harris.kimberly@epa.gov]; Poy, Thomas[poy.thomas@epa.gov]; Walts, Alan[walts.alan@epa.gov]; Klevs, Mardi[klevs.mardi@epa.gov]; Master, Edward[master.edward@epa.gov]; Singer, Joshua[Singer.Joshua@epa.gov]; Lasky, Lara[lasky.lara@epa.gov]; Porter, Andrea[porter.andrea@epa.gov]
From: Deltoral, Miguel
Sent: Fri 9/4/2015 12:53:35 PM
Subject: Re: FYI / Flint Journal : Lead leaches into 'very corrosive' Flint, Michigan, drinking water, researchers say

The sampling project is ongoing. A summary of the results from samples analyzed so far are on the following website:

http://flintwaterstudy.org/information-for-flint-residents/results-for-citizen-testing-for-lead-300-kits/

These sample results are from residents' homes. Basically anyone that wants to sample their drinking water, so they include homes that are high risk and homes that are not. The city of flint estimates that they have about 15,000 lead service lines. Based on information from one of the companies in flint that replaces service lines, the lead portion of the service line is usually only on the utility side, from the water main to the property line, but they have seen some lead service lines that go from the water main all the way into the home as well.

Miguel A. Del Toral
Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

From: Suero, Maryann
Sent: Thursday, September 3, 2015 08:38 AM
To: Deltoral, Miguel; Harris, Kimberly; Poy, Thomas; Walts, Alan; Klevs, Mardi; Master, Edward; Singer, Joshua; Lasky, Lara
Subject: FYI / Flint Journal : Lead leaches into 'very corrosive' Flint, Michigan, drinking water, researchers say

(I couldn't find where Virginia Tech reported the lead levels from Flint DW, so if anyone does find it, please share…thanks!)

Lead leaches into 'very corrosive' Flint, Michigan, drinking water, researchers say.

Flint drinking water is "very corrosive" and "causing lead contamination in homes," researchers from Virginia Tech University reported online Wednesday, Sept. 2.

Flint Journal, Michigan.

http://www.mlive.com/news/flint/index.ssf/2015/09/new_testing_shows_flint_water.html

To: Hyde, Tinka[hyde.tinka@epa.gov]; Henry, Timothy[henry.timothy@epa.gov]
From: Poy, Thomas
Sent: Fri 9/4/2015 1:38:51 PM
Subject: FW: Flint Water

We need to close the loop and formally send a letter to ORD requesting the assistance of Mike and Darren. I will draft a memo for your/Susan's (?) signature.

Tom

Tom Poy

Chief, Ground Water and Drinking Water Branch

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To: Hedman, Susan[hedman.susan@epa.gov]; Hyde, Tinka[hyde.tinka@epa.gov]; Henry, Timothy[henry.timothy@epa.gov]; Poy, Thomas[poy.thomas@epa.gov]; Peterson, John[peterson.john@epa.gov]; Cassell, Peter[cassell.peter@epa.gov]
Cc: Kelley, Jeff[kelley.jeff@epa.gov]; Fortin, Denise[Fortin.Denise@epa.gov]
From: Rowan, Anne
Sent: Fri 9/4/2015 8:36:59 PM
Subject: FW: Mlive.com: Flint will have lead-reduction plan for water system by 2016, officials say

Flint will have lead-reduction plan for water system by 2016, officials say

By Ron Fonger | rfonger1@mlive.com
on September 03, 2015 at 5:37 PM, updated September 03, 2015 at 10:51 PM

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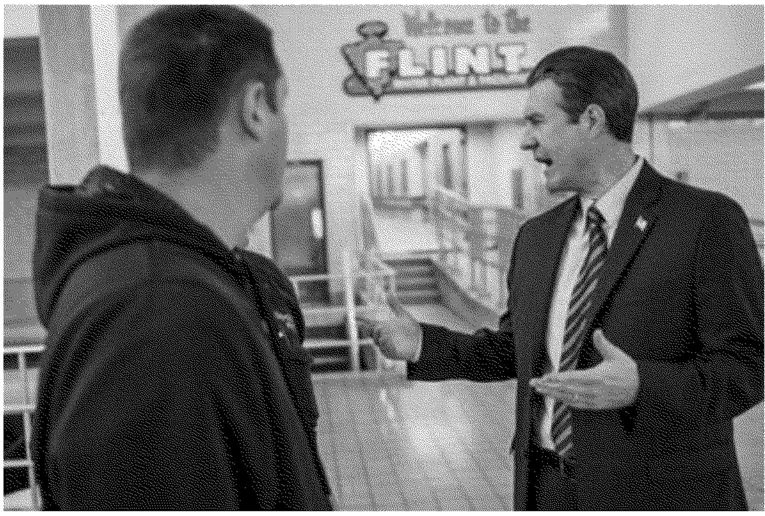

Flint Mayor Dayne Walling is shown at the Flint water treatment plant in this Flint Journal file photo.Flint Journal file photo

FLINT, MI -- The city says it will put measures in place to reduce lead in drinking water by 2016, an announcement that comes one day after a water expert warned of the potential for a "huge public health problem" here.

Mayor Dayne Walling said in a statement issued by the city Thursday, Sept. 3, that Flint "will work with the (Michigan Department of Environmental Quality) on implementing water optimization measures to reduce the corrosive effects of water on older pipes and home service lines."

The statement says the city wants to fast-track measures aimed at reducing lead, which can leach into water that comes in contact with lead pipes or lead solder. The city did not detail actions that might be taken.

Students and faculty at Virginia Polytechnic Institute and State University distributed 300 water test kits to Flint residents this summer. They reported this week that 42 percent of 120 initial samples had lead levels more than 5 parts per billion, "which suggests a serious lead-in-water problem, according to our experience and criteria."

Twenty percent of the initial samples also exceeded the U.S. Environmental Protection Agency lead action limit of 15 ppb, the report said.

Marc Edwards, a professor of civil and environmental engineering, said experiments on Flint's tap water also show it is much more corrosive than water supplied by the city of Detroit. Flint purchased water from Detroit for more than 50 years — until April 2014.

Flint water contains about eight times more chloride than Detroit water does, he said, and chloride is generally considered very corrosive to iron.

Thursday's news release from the city does not specify what actions Flint officials might take to better control corrosion, but Richard Benzie, chief of field operations in the DEQ Office of Drinking Water and Municipal Assistance, said the process will include checking for factors that contribute to corrosiveness, such as alkalinity.

Solutions can involve the addition of supplements such as phosphates, said Benzie. He said the DEQ suggested Flint officials speed up the process of developing a plan for corrosion control last month as concerns about lead in Flint water were increasingly being raised.

Melissa Mays, a founder of Water You Fighting For, said Flint officials have been slow to consider the fallout from Flint River water on lead or lead solder pipes, which are in an estimated 15,000 homes in the city.

"This (planning) should have been done immediately," said Mays, whose group is assisting in the Virginia Tech water testing. "I think this (testing) is forcing them to react in some way."

Virginia Tech reported online about its experiments on Flint water, saying it "leaches more lead from plumbing than does Detroit water ... creating a public health threat in some Flint homes that have lead pipe or lead solder."

Mays said initial test results show lead readings in excess of 15 ppb in each ZIP code in Flint.

Benzie said the Flint water system is not in violation of state or federal drinking water standards for lead but would eventually have been required to undertake a water optimization study due to the size of the water system and the presence of lead.

State officials have stressed that lead in the city water is not coming from the city's treatment plant or transmission lines, but from lead plumbing and service lines in homes.

Lead is a toxic metal that was used for many years in products found in and around homes, according to EPA.

"Even at low levels, lead may cause a range of health effects, including behavioral problems and learning disabilities," EPA's website says. "Children 6 years old and under are most at risk because this is when the brain is developing."

To: Rowan, Anne[rowan.anne@epa.gov]; Singer, Joshua[Singer.Joshua@epa.gov]
Cc: Cassell, Peter[cassell.peter@epa.gov]; Peterson, John[peterson.john@epa.gov]; Poy, Thomas[poy.thomas@epa.gov]; Henry, Timothy[henry.timothy@epa.gov]; Hyde, Tinka[hyde.tinka@epa.gov]
From: Deltoral, Miguel
Sent: Tue 9/8/2015 11:48:58 AM
Subject: Re: Lead Testing - Media Question

Good morning all...

There appears to be some confusion as to who collected the samples. There were multiple sampling events at the Citizen name / Ex. 6 home. The following is a summary of sampling conducted at the Citizen name / Ex. 6 home that I am aware of.

Sampling history at the Citizen name / Ex. 6 home

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Subsequent to the discovery of these high lead levels, the City of Flint shut off the water to the Citizen name / Ex. 6 home on April 3, 2015.

The water was briefly turned back on by the Citizen name / Ex. 6 on April 27-28, 2015 to collect additional samples. The water had sat unused from April 3, 2015 to April 27, 2015.The kitchen tap was flushed for 45 minutes the night of April 27, 2015 and a series of sequential samples (total of 30) were collected on April 28, 2015 by Citizen name / Ex. 6 These samples were sent to Dr. Marc Edwards at Virginia Tech for analysis. The sample results ranged in value from 200 µg/L to 13,200 µg/L, with an average value of 2,500 µg/L.

It was found that a portion of the service line serving the Citizen name / Ex. 6 home was made of lead and the City of Flint replaced the Walters' service line on May 6, 2015.

Following the replacement of the service line, a total of 18 samples were collected by Citizen name / Ex. 6 on May 13, 2015 and sent to the U.S. EPA Chicago Regional Laboratory for analysis. The results of 15 sequential samples (one sample collected right after another) from the kitchen tap ranged from 0.51 µg/L to 3.9 µg/L, with an average of 1.5 µg/L, indicating that the replacement of the service line was successful in removing the source of lead into the Citizen name / Ex. 6 home. The bathroom tap result was 5.5 µg/L and the two sample results from the hot water heater were 31.7 µg/L and 9.74 µg/L.

Note: The water heater was sampled as it is typical to find lead-bearing deposits accumulated in the water heaters where upstream sources of lead are or were present, which is one of the reasons why EPA/CDC advises people not to use hot water for cooking or making formula.

Miguel A. Del Toral
Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

From: Rowan, Anne
Sent: Friday, September 4, 2015 03:11 PM
To: Singer, Joshua
Cc: Deltoral, Miguel; Cassell, Peter; Peterson, John; Poy, Thomas; Henry, Timothy; Hyde, Tinka
Subject: RE: Lead Testing - Media Question

Thanks, Josh.

Peter, please follow up with reporter and with WD on Tuesday to respond to this media inquiry.

Anne Rowan, Chief

Public Affairs Section

Office of External Communications

U.S. EPA Region 5, Chicago

rowan.anne@epa.gov

312-353-9391

From: Singer, Joshua
Sent: Friday, September 04, 2015 2:53 PM
To: Rowan, Anne
Cc: Deltoral, Miguel; Cassell, Peter; Peterson, John; Poy, Thomas; Henry, Timothy; Hyde, Tinka
Subject: RE: Lead Testing - Media Question

Given the time, I will send the reporter the desk statement today and tell her to contact Pete next week if she has further questions. The reporter seems to be primarily concerned with the sampling at that one home. Thank you.

Josh Singer

U.S. EPA, Region 5

phone: 312-353-5069

singer.joshua@epa.gov

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Cc: Deltoral, Miguel; Cassell, Peter; Peterson, John; Poy, Thomas; Henry, Timothy; Hyde, Tinka
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The City of Flint recently accepted EPA's offer to provide technical assistance to the City and MDEQ on the optimization of corrosion control in the city's water distribution system. The City's Technical Advisory Committee has been notified that experts from EPA's Office of Research and Development (in Cincinnati) will join the panel.

Flint residents who are concerned about lead in their drinking should contact the water utility and may request their water be sampled. Additional information about lead in drinking water is available at http://water.epa.gov/drink/contaminants/basicinformation/lead.cfm.

-

Anne Rowan, Chief

Public Affairs Section

Office of External Communications

U.S. EPA Region 5, Chicago

rowan.anne@epa.gov

312-353-9391

From: Singer, Joshua
Sent: Friday, September 04, 2015 1:34 PM
To: Rowan, Anne
Cc: Deltoral, Miguel; Cassell, Peter; Peterson, John; Poy, Thomas; Henry, Timothy; Hyde, Tinka
Subject: FW: Lead Testing - Media Question

Please see the reporter's question below.

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Is there a desk statement that we used to respond to the inquiry from the Flint Journal that we received yesterday that we can send to this reporter?

For now, I will tell the reporter that I will check on her question but may not be able to respond this afternoon.

Thanks.

Josh Singer

U.S. EPA, Region 5

phone: 312-353-5069

singer.joshua@epa.gov

From: Dupnack, Jessica [mailto:jessica.dupnack@abc12.com]
Sent: Friday, September 04, 2015 1:24 PM
To: Singer, Joshua
Subject: RE: Lead Testing - Media Question

This is regarding some testing that was done at Citizen name / Ex. 6 home in the City of Flint.
Personal Address / Ex. 6 She presented documentation from Miquel Del Toral that the water was tested.
The results of multiple testing showed extremely high levels of Lead in the water.
I would like to confirm that the testing was done and the preliminary report is in fact real.

Also, if there is any way someone could do an interview with us next week about this I would like to at least put that out there.

From: Singer, Joshua [Singer.Joshua@epa.gov]
Sent: Friday, September 04, 2015 2:22 PM
To: Dupnack, Jessica
Subject: RE: Lead Testing - Media Question

Jessica,

Could you please send me your questions?

Thank you.

Josh Singer

U.S. EPA, Region 5

phone: 312-353-5069

singer.joshua@epa.gov

From: Dupnack, Jessica [mailto:jessica.dupnack@abc12.com]
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To: Singer, Joshua
Subject: Lead Testing - Media Question

Hello! This is Jessica Dupnack from ABC 12 News in Flint, MI.
I am working on a story about elevated Lead levels in the water here.
Was looking to get some details from you. If you could get back to me today that would be awesome.
My cell is Personal Phone / Ex. 6

Thanks.

To: Bair, Rita[bair.rita@epa.gov]
Cc: Crooks, Jennifer[crooks.jennifer@epa.gov]; Porter, Andrea[porter.andrea@epa.gov]
From: Deltoral, Miguel
Sent: Tue 9/8/2015 11:52:11 AM
Subject: Fw: Lead Testing - Media Question

Sorry, I just noticed you were not on the list of folks.

Rita - I am not sure who else I should be keeping in the loop other than Jen and Andrea. Nick? Heather? Janet? Kim? Please advise.

Miguel A. Del Toral
Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

From: Deltoral, Miguel
Sent: Tuesday, September 8, 2015 06:48 AM
To: Rowan, Anne; Singer, Joshua
Cc: Cassell, Peter; Peterson, John; Poy, Thomas; Henry, Timothy; Hyde, Tinka
Subject: Re: Lead Testing - Media Question

Good morning all...

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U.S. EPA R5 GWDWB
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Chicago, IL 60604
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Subject: RE: Lead Testing - Media Question

Thanks, Josh.

Peter, please follow up with reporter and with WD on Tuesday to respond to this media inquiry.

Anne Rowan, Chief

Public Affairs Section

Office of External Communications

U.S. EPA Region 5, Chicago

rowan.anne@epa.gov

312-353-9391

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To: Rowan, Anne
Cc: Deltoral, Miguel; Cassell, Peter; Peterson, John; Poy, Thomas; Henry, Timothy; Hyde, Tinka
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Josh Singer

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The City of Flint recently accepted EPA's offer to provide technical assistance to the City and MDEQ on the optimization of corrosion control in the city's water distribution system. The City's Technical Advisory Committee has been notified that experts from EPA's Office of Research and Development (in Cincinnati) will join the panel.

Flint residents who are concerned about lead in their drinking should contact the water utility and may request their water be sampled. Additional information about lead in drinking water is available at http://water.epa.gov/drink/contaminants/basicinformation/lead.cfm.

-

Anne Rowan, Chief

Public Affairs Section

Office of External Communications

U.S. EPA Region 5, Chicago

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312-353-9391

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I am not sure if we can tell media what private residences we have tested (if we have tested this residence).

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U.S. EPA, Region 5

phone: 312-353-5069

singer.joshua@epa.gov

From: Dupnack, Jessica [mailto:jessica.dupnack@abc12.com]
Sent: Friday, September 04, 2015 1:24 PM
To: Singer, Joshua
Subject: RE: Lead Testing - Media Question

This is regarding some testing that was done at LeeAnne Walters home in the City of Flint.
She lives at Personal Address / Ex. 6 She presented documentation from Miquel Del Toral that the water was tested.
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I would like to confirm that the testing was done and the preliminary report is in fact real.

Also, if there is any way someone could do an interview with us next week about this I would like to at least put that out there.

From: Singer, Joshua [Singer.Joshua@epa.gov]
Sent: Friday, September 04, 2015 2:22 PM
To: Dupnack, Jessica
Subject: RE: Lead Testing - Media Question

Jessica,

Could you please send me your questions?

Thank you.

Josh Singer

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Subject: Lead Testing - Media Question

Hello! This is Jessica Dupnack from ABC 12 News in Flint, MI.
I am working on a story about elevated Lead levels in the water here.
Was looking to get some details from you. If you could get back to me today that would be awesome.
My cell is Personal Phone / Ex. 6

Thanks.

To: Fortin, Denise[Fortin.Denise@epa.gov]
From: Henry, Timothy
Sent: Tue 9/8/2015 9:40:16 PM
Subject: FW: Lead Testing - Media Question

Found the most recent

Tim Henry
Deputy Director, Water Division
U.S. EPA (W-15J)
77 W. Jackson Blvd., Chicago, IL 60604-3590
Phone: 312.886.6107 Fax: 312.692.2578

From: Rowan, Anne
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Public Affairs Section

Office of External Communications

U.S. EPA Region 5, Chicago

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U.S. EPA, Region 5

phone: 312-353-5069

singer.joshua@epa.gov

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Thanks.

To: Henry, Timothy[henry.timothy@epa.gov]
From: Fortin, Denise
Sent: Tue 9/8/2015 9:41:06 PM
Subject: RE: Lead Testing - Media Question

Thanks, Tim.

Denise Fortin

Congressional Liaison

Office of Regional Administrator

U.S. Environmental Protection Agency

312-886-9859

From: Henry, Timothy
Sent: Tuesday, September 08, 2015 4:40 PM
To: Fortin, Denise
Subject: FW: Lead Testing - Media Question

Found the most recent

Tim Henry
Deputy Director, Water Division
U.S. EPA (W-15J)
77 W. Jackson Blvd., Chicago, IL 60604-3590
Phone: 312.886.6107 Fax: 312.692.2578

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Public Affairs Section

Office of External Communications

U.S. EPA Region 5, Chicago

rowan.anne@epa.gov

312-353-9391

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Cc: Deltoral, Miguel; Cassell, Peter; Peterson, John; Poy, Thomas; Henry, Timothy; Hyde, Tinka
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Josh Singer

U.S. EPA, Region 5

phone: 312-353-5069

singer.joshua@epa.gov

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To: Singer, Joshua
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My cell is Personal Phone / Ex. 6

Thanks.

To: Poy, Thomas[poy.thomas@epa.gov]
Cc: Rowan, Anne[rowan.anne@epa.gov]; Hyde, Tinka[hyde.tinka@epa.gov]
From: Cassell, Peter
Sent: Wed 9/9/2015 4:23:17 PM
Subject: FW: Flint Lead Levels - Media Question

She would need to contact the city about this, correct? Or is there a certain level where we would issue something like this – I don't recall there being one, but I am not as familiar with the SDWA as the CWA.

Pete Cassell
Press Officer
U.S. Environmental Protection Agency

---

77 West Jackson Blvd (P-19J)
Chicago, IL 60604-3590
Office (312) 886-6234
Mobile (312) 859-9614

From: Dupnack, Jessica [mailto:jessica.dupnack@abc12.com]
Sent: Wednesday, September 09, 2015 11:22 AM
To: Cassell, Peter
Subject: RE: Flint Lead Levels - Media Question

Thanks so much Peter. I appreciate it.
In the mean time, is there any warning to citizens about drinking the water?
I think that's what most people are concerned about - especially children.

From: Cassell, Peter [cassell.peter@epa.gov]
Sent: Wednesday, September 09, 2015 12:19 PM
To: Dupnack, Jessica
Cc: Rowan, Anne; Peterson, John
Subject: RE: Flint Lead Levels - Media Question

Hey Jessica,

Sorry I was out for the Holiday. Below is a desk statement we have prepared regarding this issue. Please attribute any quotes to the U.S. EPA.

EPA and the Michigan Department of Environmental Quality are working closely with the City of Flint to ensure that residents are provided with safe drinking water. MDEQ determined that although recent lead monitoring shows Flint has not exceeded the lead action level (15 ug/L), the results indicate Flint does not have optimized corrosion control. EPA and MDEQ have recommended that Flint implement corrosion control treatment as soon as possible since the city's lead service lines can leach lead into the drinking water if left untreated.

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Flint residents who are concerned about lead in their drinking should contact the water utility and may request their water be sampled. Additional information about lead in drinking water is available at http://water.epa.gov/drink/contaminants/basicinformation/lead.cfm.

I am currently checking about the other information you are asking about. Thanks!

Pete Cassell
Press Officer
U.S. Environmental Protection Agency

---

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Chicago, IL 60604-3590
Office (312) 886-6234
Mobile (312) 859-9614

From: Dupnack, Jessica [mailto:jessica.dupnack@abc12.com]
Sent: Tuesday, September 08, 2015 3:59 PM
To: Cassell, Peter

Subject: RE: Flint Lead Levels - Media Question

Hello again. Not sure if you missed my previous email. I know it might of gotten lost in the holiday shuffle.
If you wouldn't mind reviewing my questions and give me a ring when possible.
Thank you for your help.

From: Dupnack, Jessica
Sent: Friday, September 04, 2015 5:40 PM
To: cassell.peter@epa.gov
Subject: Flint Lead Levels - Media Question

Hello! This is Jessica Dupnack from ABC 12 News in Flint, MI.
I have been working on a story about the Lead levels in the City's water supply.
A woman named [redacted] Citizen name / Ex. 6 provided me with some paperwork indicating that the EPA did some testing at her home.
She told me that it was a preliminary report and that there would be more to come from your end.
I have seen the report surface in other news articles by a simple Google search.

I would like to talk further with you about the authenticity of the report.
Please give me a call when you can at 248-721-1301.

Thank you.

To: Poy, Thomas[poy.thomas@epa.gov]
Cc: Hyde, Tinka[hyde.tinka@epa.gov]; Henry, Timothy[henry.timothy@epa.gov]; Rowan, Anne[rowan.anne@epa.gov]; Peterson, John[peterson.john@epa.gov]; Clark, Jacqueline[clark.jacqueline@epa.gov]; Cantello, Nicole[cantello.nicole@epa.gov]
From: Cassell, Peter
Sent: Wed 9/9/2015 6:10:02 PM
Subject: FW: flint mich water

New questions from the reporter.

Pete Cassell
Press Officer
U.S. Environmental Protection Agency

---

77 West Jackson Blvd (P-19J)
Chicago, IL 60604-3590
Office (312) 886-6234
Mobile (312) 859-9614

From: Ronald Fonger [mailto:RFONGER1@mlive.com]
Sent: Wednesday, September 09, 2015 1:09 PM
To: Cassell, Peter
Subject: RE: flint mich water

Thank-you Peter.

Can you comment on the part of the June 24 memorandum from Miguel A. Del Toral that speaks to the practice of "pre-flushing" before collecting water samples in Flint or do his comments, specifically on page 2 of the memo, speak for the agency?
Also, when did U.S. EPA offer to provide technical assistance to Flint regarding drinking water and what form is that assistance taking?

Thanks again for your help,

Ron Fonger

MLive Media Group

Reporter

mobile 810.347.9963

email rfonger1@mlive.com

address 540 S. Saginaw St. #101, Flint MI 48502

From: Cassell, Peter [mailto:cassell.peter@epa.gov]
Sent: Wednesday, September 09, 2015 1:28 PM
To: Ronald Fonger; Peterson, John
Cc: Mitchell Rivard (mitchell@dankildee.com); mitchell.rivard@mail.house.gov; Rowan, Anne; Singer, Joshua
Subject: RE: flint mich water

Hi Ron,

John Peterson in our office sent this statement to you Friday around 4 p.m. EPA has no further updates besides the information provided below in our statement. Please attribute any quotes to the U.S. EPA or a spokesperson for the U.S. EPA only.

EPA and the Michigan Department of Environmental Quality are working closely with the City of Flint to ensure that residents are provided with safe drinking water. MDEQ determined that although recent lead monitoring shows Flint has not exceeded the lead action level (15 ug/L), the results indicate Flint does not have optimized corrosion control. EPA and MDEQ have recommended that Flint implement corrosion control treatment as soon as possible since the city's lead service lines can leach lead into the drinking water if left untreated.

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Sent: Wednesday, September 09, 2015 11:07 AM
To: Peterson, John
Cc: Cassell, Peter; Mitchell Rivard (mitchell@dankildee.com); mitchell.rivard@mail.house.gov
Subject: RE: flint mich water

Hi.

We are still interested in a response/comment from U.S. EPA.

Ron Fonger

MLive Media Group

Reporter

mobile 810.347.9963

email rfonger1@mlive.com

address 540 S. Saginaw St. #101, Flint MI 48502

From: Peterson, John [mailto:peterson.john@epa.gov]
Sent: Tuesday, September 08, 2015 12:56 PM
To: Ronald Fonger
Subject: RE: flint mich water

Hello Ron,

I forwarded your inquiry to Peter Cassell in R5's public affairs office. He was out sick last Thursday when you called but is back in the saddle today. Peter handles our water issues.

Take care,

- john

John Peterson

Writer/Editor

Public Affairs

U.S. EPA Region 5

Chicago, IL

312-886-9858

708-334-7594

From: Ronald Fonger [mailto:RFONGER1@mlive.com]
Sent: Tuesday, September 08, 2015 11:44 AM
To: Peterson, John
Subject: flint mich water

John:
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- A June 24 memorandum about Flint's drinking water from Miquel A. Del Toral, regulations manager, ground water and drinking water branch, U.S. EPA.

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- An advisory from a team of researchers and students from Virginia Tech, who today, Sept. 8, began to advise Flint residents not to use the municipal water here for cooking or drinking without the use of a filter or flushing water lines use because of the lead levels in samples collected here.(http://flintwaterstudy.org/)

Please let me know if someone from the U.S. EPA is available to comment on any of these documents and links.

Thanks for your help,

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MLive Media Group

Reporter

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From: Poy, Thomas
Sent: Wed 9/9/2015 7:24:34 PM
Subject: RE: flint mich water

Pete: Miguel's comments about "pre-flushing" are his professional views on the matter. EPA does not officially have a position on pre-flushing as the practice is not specifically prohibited by the Lead and Copper Rule. A number of States allow pre-flushing.

EPA offered the technical assistance of national experts from our Office of Research Development in July 2015.

Tom Poy

Chief, Ground Water and Drinking Water Branch

USEPA - Region 5

(312) 886-5991

From: Cassell, Peter
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To: Hedman, Susan[hedman.susan@epa.gov]; Hyde, Tinka[hyde.tinka@epa.gov]
Cc: Henry, Timothy[henry.timothy@epa.gov]; Kaplan, Robert[kaplan.robert@epa.gov]; Rowan, Anne[rowan.anne@epa.gov]
From: Kelley, Jeff
Sent: Wed 9/9/2015 10:17:46 PM
Subject: RE: request for comment

Yes, we sent to the MLive reporter, though he didn't use any of it in his story.

Jeff Kelley
Director, Office of External Communications
U.S. EPA Region 5
ph: 312-353-1159

From: Hedman, Susan
Sent: Wednesday, September 09, 2015 5:15 PM
To: Hyde, Tinka
Cc: Henry, Timothy; Kaplan, Robert; Kelley, Jeff; Rowan, Anne
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From: Hedman, Susan
Sent: Wednesday, September 09, 2015 2:27 PM

To: Hyde, Tinka; Henry, Timothy
Cc: Kaplan, Robert; Kelley, Jeff; Rowan, Anne
Subject: Re: request for comment

What do you recommend?

Sent from my iPhone

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MLive Media Group

Reporter

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Dayne Walling
Mayor, City of Flint
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follow me on twitter at http://twitter.com/mayorwalling

<4239_001.pdf>

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Cc: Hyde, Tinka[hyde.tinka@epa.gov]; Henry, Timothy[henry.timothy@epa.gov]; Kaplan, Robert[kaplan.robert@epa.gov]; Rowan, Anne[rowan.anne@epa.gov]
From: Hedman, Susan
Sent: Wed 9/9/2015 10:30:06 PM
Subject: Re: request for comment

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Sent from my iPhone

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> ***Jeff Kelley***
> *Director, Office of External Communications*
> *U.S. EPA Region 5*
> *ph: 312-353-1159*
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> **From:** Hedman, Susan
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MLive Media Group

Reporter

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From: Kelley, Jeff
Sent: Wed 9/9/2015 10:32:00 PM
Subject: RE: request for comment

I haven't seen the latest inquiry, but am told the questions are more focused on the June 24 memo from Miguel Del Toral and on testing protocols.

Jeff Kelley
Director, Office of External Communications
U.S. EPA Region 5
ph: 312-353-1159

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Cc: Hyde, Tinka[hyde.tinka@epa.gov]
From: Hedman, Susan
Sent: Thur 9/10/2015 1:39:41 AM
Subject: Flint

I think we should comment on the third document first -- saying that EPA advises everyone across the country to flush their pipes before drawing water for drinking -- and we should provide the reporter with the links to tips our website. Let"s emphasize this point -- it's the most important thing we can do to protect public health.

I don't think we should comment on the letter from the mayoral candidate.

I think our comment on the memo should be the updated desk statement that Tinka circulated earlier today:

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> *I'm reaching out to the U.S. EPA, seeking comment on three documents that I have enclosed and will be writing about today and in coming days:*
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regulations manager, ground water and drinking water branch, U.S. EPA.
· A letter from Karen Weaver, a candidate for mayor of Flint, which has been sent to President Ombama as well as state and federal elected officials from Michigan.
· An advisory from a team of researchers and students from Virginia Tech, who today, Sept. 8, began to advise Flint residents not to use the municipal water here for cooking or drinking without the use of a filter or flushing water lines use because of the lead levels in samples collected here.(http://flintwaterstudy.org/)
Please let me know if someone from the U.S. EPA is available to comment on any of these documents and links.
Thanks for your help,

---
Jeff Kelley
Director, Office of External Communications
U.S. EPA Region 5
ph: 312-353-1159

On Wed, Sep 9, 2015 at 4:59 PM -0700, "Kelley, Jeff" <kelley.jeff@epa.gov> wrote:

This was sent to MLive on Friday:

EPA and the Michigan Department of Environmental Quality are working closely with the City of Flint to ensure that residents are provided with safe drinking water. MDEQ determined that although recent lead monitoring shows Flint has not exceeded the lead action level (15 ug/L), the results indicate Flint does not have optimized corrosion control. EPA and MDEQ have recommended that Flint implement corrosion control treatment as soon as possible since the city's lead service lines can leach lead into the drinking water if left untreated.

The City of Flint recently accepted EPA's offer to provide technical assistance to the City and MDEQ on the optimization of corrosion control in the city's water distribution system. The City's Technical Advisory Committee has been notified that experts from EPA's Office of Research and Development (in Cincinnati) will join the panel.

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Jeff Kelley

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On Wed, Sep 9, 2015 at 3:53 PM -0700, "Hedman, Susan" <hedman.susan@epa.gov> wrote:

(I am not sure I have the final version.

Sent from my iPhone

To: Christ, Lisa[Christ.Lisa@epa.gov]; Lopez-Carbo, Maria[Lopez-Carbo.Maria@epa.gov]
Cc: Poy, Thomas[poy.thomas@epa.gov]; Bair, Rita[bair.rita@epa.gov]; Damato, Nicholas[damato.nicholas@epa.gov]; Porter, Andrea[porter.andrea@epa.gov]; Shoven, Heather[shoven.heather@epa.gov]; Crooks, Jennifer[crooks.jennifer@epa.gov]; Schock, Michael[Schock.Michael@epa.gov]
From: Deltoral, Miguel
Sent: Thur 9/10/2015 2:13:41 PM
Subject: RE: A few questions for you

Hi Lisa,

The answer to #1 would be yes. Although I don't know how many systems overall (nationally or even in R5) are making such changes, we have approximately 20 or so more systems in MI that will be affected in the next year or so. Along with Flint, there are something like 20 other towns that will be switching from their current source water to the new KWA pipeline which is under construction and scheduled for completion at the end of 2016. We have been having discussions with MDEQ to ensure that these systems maintain OCCT when the transition sources.

Mike may know of others, so I am copying him on this.

If you have any further questions, please let me know.

Miguel A. Del Toral

Regulations Manager

Ground Water and Drinking Water Branch

77 West Jackson Blvd (WG-15J)

Chicago, IL 60604

Phone: (312) 886-5253

From: Christ, Lisa
Sent: Wednesday, September 09, 2015 11:56 AM

To: Lopez-Carbo, Maria
Cc: Deltoral, Miguel
Subject: FW: A few questions for you

Hi Maria –

I can tackle questions #2 below by explaining tap monitoring and ALE actions (ie PE and LSLR) can someone in your shop address the implementation/compliance question #1?

Miguel –

Touching base to see if R5 has information to help address the questions below. I'm familiar with the background on Flint based on information from Jeff.

Lisa

From: Grevatt, Peter
Sent: Wednesday, September 09, 2015 12:42 PM
To: Christ, Lisa; Lopez-Carbo, Maria
Cc: Bergman, Ronald; Oshida, Phil; Burneson, Eric; Greene, Ashley; Clark, Becki
Subject: FW: A few questions for you

FYI. This is one of those questions where I am not certain which of you is best suited (or most willing!) to address. Please discuss and advise me on how you recommend that I respond. We'll also need to keep an eye on the continuing issues in Flint. Thanks.

From: Mary Ann Dickinson [mailto:maryann@a4we.org]
Sent: Wednesday, September 09, 2015 11:17 AM
To: Grevatt, Peter
Subject: A few questions for you

Hi Peter:

It was great to see you at the OWL Summit a few weeks ago. Thanks for your great introduction of Bill Reilly!

If you have a minute, I would love your views on an issue facing the city of Flint right now. Undoubtedly you have heard that Marc Edwards responds to requests from citizen advocacy groups to test consumer water samples for lead. I don't think Flint is the only city where his testing is occurring, but because of the corrosiveness of Flint's water (which I understand is still within SDWA compliance requirements) the samples from consumer premise plumbing and service lines are turning up beyond the acceptable lead levels. Flint, as an older city, obviously still has service lines and premise plumbing with lead soldering, and Marc's students test results are now causing understandable alarm among Flint's residents. Advocacy groups are clamoring for changes to Flint's water corrosivity to reduce the risk of leaching lead.

So here are two questions for you.

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2. Is there an EPA protocol or requirement that utilities should routinely test for lead levels emanating from customer premise plumbing? And then an established protocol for addressing high lead levels when found?

Thanks for your help! I feel a little embarrassed going right to the top with these questions, but I hope you don't mind. If there is someone in your shop that I should send contact, please let me know.

Mary Ann

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Mary Ann Dickinson

President and CEO

Alliance for Water Efficiency

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From: Deltoral, Miguel
Sent: Thur 9/10/2015 2:18:53 PM
Subject: RE: A few questions for you

Here's the link to the KWA website. They will be providing raw (untreated) Lake Huron water to these towns once the pipeline is completed. Some of them also currently receive Detroit water, so they would be switching from purchasing treated Detroit water to receiving untreated Lake Huron water.

http://www.karegnondi.com/

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Chicago, IL 60604

Phone: (312) 886-5253

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Cc: Poy, Thomas; Bair, Rita; Damato, Nicholas; Porter, Andrea; Shoven, Heather; Crooks, Jennifer; Schock, Michael
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UNITED STATES
WATER PRIZE
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To: Hedman, Susan[hedman.susan@epa.gov]
Cc: Hyde, Tinka[hyde.tinka@epa.gov]
From: Kelley, Jeff
Sent: Thur 9/10/2015 4:04:15 PM
Subject: RE: Flint

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EPA advises everyone across the country to flush their pipes before drinking water to reduce any exposure to lead. The more time water has been sitting in your home's pipes, the more lead it may contain. Anytime the water in a particular faucet has not been used for six hours or longer, "flush" the cold-water pipes by running the water. Flushing times can vary based on the plumbing configuration in the home and whether the home has a lead service line.

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Jeff Kelley
Director, Office of External Communications
U.S. EPA Region 5
ph: 312-353-1159

From: Hedman, Susan
Sent: Wednesday, September 09, 2015 8:40 PM
To: Kelley, Jeff
Cc: Hyde, Tinka
Subject: Flint

I think we should comment on the third document first -- saying that EPA advises everyone across the country to flush their pipes before drawing water for drinking -- and we should provide the reporter with the links to tips our website. Let"s emphasize this point -- it's the most important thing we can do to protect public health.

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Sent from my iPhone

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Cc: Hyde, Tinka[hyde.tinka@epa.gov]
From: Hedman, Susan
Sent: Thur 9/10/2015 4:17:36 PM
Subject: Fwd: Flint

Revised text below.

Sent from my iPhone

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From: "Kelley, Jeff" <kelley.jeff@epa.gov>
Date: September 10, 2015 at 11:04:15 AM CDT
To: "Hedman, Susan" <hedman.susan@epa.gov>
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Cc: Bair, Rita[bair.rita@epa.gov]; Christ, Lisa[Christ.Lisa@epa.gov]
From: Lopez-Carbo, Maria
Sent: Thur 9/10/2015 5:40:19 PM
Subject: RE: A few questions for you

Thanks Miguel.

Just fyi that I contacted Peter and we decided that I would give Mary Anne a call.

Quick question on the pipeline- I heard it was approximately 10 systems that were connecting….is it more like 20?

Thanks everyone.

Hope you are having a great Thursday afternoon.

Maria A. Lopez Carbo

Branch Chief – Protection Branch

Drinking Water Protection Division

Office of Ground Water & Drinking Water

202-564-4618

From: Deltoral, Miguel

Sent: Thursday, September 10, 2015 10:14 AM
To: Christ, Lisa; Lopez-Carbo, Maria
Cc: Poy, Thomas; Bair, Rita; Damato, Nicholas; Porter, Andrea; Shoven, Heather; Crooks, Jennifer; Schock, Michael
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To: Poy, Thomas[poy.thomas@epa.gov]
From: Hyde, Tinka
Sent: Thur 9/10/2015 6:44:28 PM
Subject: ACTION: Flint - PRESS RESPONSE

Tom- Do you see any concerns with the language below? Do we want to add anything related to hot water?

From: Hedman, Susan
Sent: Thursday, September 10, 2015 11:18 AM
To: Kelley, Jeff
Cc: Hyde, Tinka
Subject: Fwd: Flint

Revised text below.

Sent from my iPhone

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Jeff Kelley
Director, Office of External Communications
U.S. EPA Region 5
ph: 312-353-1159

From: Hedman, Susan
Sent: Wednesday, September 09, 2015 8:40 PM
To: Kelley, Jeff
Cc: Hyde, Tinka
Subject: Flint

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http://water.epa.gov/drink/contaminants/basicinformation/lead.cfm.

-

Sent from my iPhone

On Sep 9, 2015, at 7:03 PM, Kelley, Jeff <kelley.jeff@epa.gov> wrote:

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> *Please let me know if someone from the U.S. EPA is available to comment on any of these documents and links.*

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(I am not sure I have the final version.

Sent from my iPhone

To: Hyde, Tinka[hyde.tinka@epa.gov]
From: Poy, Thomas
Sent: Thur 9/10/2015 7:58:09 PM
Subject: RE: ACTION: Flint - PRESS RESPONSE

Tinka: Yes, I would include this sentence at the end of the first paragraph.

“Also, use only cold water for drinking, cooking, and preparing baby formula.”

Tom Poy

Chief, Ground Water and Drinking Water Branch

USEPA - Region 5

(312) 886-5991

From: Hyde, Tinka
Sent: Thursday, September 10, 2015 1:44 PM
To: Poy, Thomas
Subject: ACTION: Flint - PRESS RESPONSE

Tom- Do you see any concerns with the language below? Do we want to add anything related to hot water?

From: Hedman, Susan
Sent: Thursday, September 10, 2015 11:18 AM
To: Kelley, Jeff
Cc: Hyde, Tinka
Subject: Fwd: Flint

Revised text below.

Sent from my iPhone

Begin forwarded message:

> **From:** "Kelley, Jeff" <kelley.jeff@epa.gov>

Date: September 10, 2015 at 11:04:15 AM CDT
To: "Hedman, Susan" <hedman.susan@epa.gov>
Cc: "Hyde, Tinka" <hyde.tinka@epa.gov>
Subject: RE: Flint

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EPA advises everyone across the country to flush their pipes before drawing drinking water to reduce exposure to lead. The more time water has been sitting in your home's pipes, the more lead it may contain. Anytime the water in a particular faucet has not been used for six hours or longer, "flush" the cold-water pipes by running the water before drinking. Flushing times can vary based on the plumbing configuration in the home and whether the home has a lead service line.

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Cc: Kelley, Jeff[kelley.jeff@epa.gov]
From: Hedman, Susan
Sent: Thur 9/10/2015 10:29:10 PM
Subject: Re: Flint

Thanks -- good addition -- I think this is ready to go.

Sent from my iPhone

On Sep 10, 2015, at 5:26 PM, Hyde, Tinka <hyde.tinka@epa.gov> wrote:

> This is fine but suggest adding the highlighted sentence to the first paragraph.
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Sent from my iPhone

To: Crooks, Jennifer[crooks.jennifer@epa.gov]
From: Philip, Kris (DEQ)
Sent: Thur 9/10/2015 10:33:40 PM
Subject: RE: FY 2016 CWS Disinvestment

Thanks, Jennifer.

From: Crooks, Jennifer [mailto:crooks.jennifer@epa.gov]
Sent: Thursday, September 10, 2015 12:59 PM
To: Philip, Kris (DEQ)
Cc: Shoven, Heather; Murphy, Thomas
Subject: RE: FY 2016 CWS Disinvestment

Kris--I read your email more closely on Tuesday before I talked with Heather, and you're just committing to do what we asked—just starting in FY 2016, nothing before. This will be good for your new staff person to work on, too. Your proposal below looks very good; thank you for responding.

Jennifer

From: Crooks, Jennifer
Sent: Thursday, September 03, 2015 4:58 PM
To: 'Philip, Kris (DEQ)'
Subject: RE: FY 2016 Disinvestment?

I think this is good! And I think I can sell this too. I'll run it past Heather and Tom M—maybe just Heather ☺ next Tuesday, since Tom Poy, who usually agrees with my proposals, will ask Heather her opinion before he comments.

Thank you, Kris! Talk to you next Tuesday!

Jennifer

From: Philip, Kris (DEQ) [mailto:PHILIPK@michigan.gov]
Sent: Thursday, September 03, 2015 4:36 PM
To: Crooks, Jennifer
Subject: RE: FY 2016 Disinvestment?

I was hoping to get a decent draft of the disinvestments together next week to have you look at, but here is my thought for CWS re the LCR reporting form (this is not the wording, just the concept):

CWS is likely willing to commit to enforcing submission of the form for samples collected during FY16 and beyond. That means we don't commit to enforcing form submittal for samples collected this summer (FY15), even though the form itself is technically due in FY16. We weren't prepared to enforce it for FY15 sampling. In FY16 we will have a person focusing on LCR sampling, so we will be in a much better position to plan for enforcement going forward.

From: Crooks, Jennifer [mailto:crooks.jennifer@epa.gov]
Sent: Thursday, September 03, 2015 4:53 PM
To: Philip, Kris (DEQ)
Subject: FY 2016 Disinvestment?

In the notes from our semi-annual call, there was an Action item for you----I put it here, and it's in red in the context of the notes. Have you had a chance to follow up with your staff? I'll be back in the office next Tuesday and I'll follow up with you then. Have a fun holiday weekend!

Jennifer

Excerpt from semi-annual call notes:

"Kris Philip said that the CWS program is requiring that the systems submit the form, but they are not enforcing whether or not the system submits the form. Often, the CWS will submit the Lead Consumer Notice and the Lead and Copper reporting form together. Kris said if 90%+ are already submitting the forms, then the State will agree to follow-up and enforce this requirement. But, if less than that, will probably be too much of a burden. Kris said they may change the way DEQ is tracking in SDWIS during FY 2016. But, the Region said SDWIS-Prime probably won't be available until 2017 at the earliest.

ACTION: Kris Philip will research with the District Offices to determine the current submittal rate of the lead and copper reporting form from CWSs; and report back to the Region."

From: Crooks, Jennifer
Sent: Tuesday, July 28, 2015 8:47 AM
To: Shekter Smith, Liane (DNRE); Richard Benzie; kris philip; Monosmith, Carrie (DNRE); DeBruyn, Dana (DEQ); 'Dettweiler, Dan (DEQ)'; 'Busch, Stephen (DEQ)'; 'Prysby, Mike (DEQ)'; 'cookp@michigan.gov'; 'Holdwick, Kevin (DEQ)'
Cc: 'Thomas Poy'; Bair, Rita; Damato, Nicholas; Shoven, Heather; Kuefler, Janet; Murphy, Thomas; Porter, Andrea; Deltoral, Miguel
Subject: Final Notes from Michigan semi-annual call on 6/10

I was supposed to finalize these in mid-July, but I didn't receive any changes from anyone, so these notes are final now. Thank you all again for participating.

Jennifer

From: Crooks, Jennifer
Sent: Wednesday, July 01, 2015 5:31 PM
To: Shekter Smith, Liane (DNRE); Richard Benzie; kris philip; Monosmith, Carrie (DNRE); DeBruyn, Dana (DEQ); Dettweiler, Dan (DEQ); Busch, Stephen (DEQ); 'Prysby, Mike (DEQ)'; 'cookp@michigan.gov'; Holdwick, Kevin (DEQ)
Cc: Thomas Poy; Bair, Rita; Damato, Nicholas; Shoven, Heather; Kuefler, Janet; Murphy, Thomas; Porter, Andrea; Deltoral, Miguel
Subject: Draft Notes from Michigan semi-annual call on 6/10

All—Below are my draft notes from our call last week, June 10, 2015. Thank you all for participating. I apologize for the delay in getting these out in draft to you all for review—I was hoping to get a couple of items ironed out that were fuzzy during our discussions, but hasn't happened yet. Several ACTION items below. So, please review to make sure I documented our discussion/agreements correctly, and feel free to edit as needed. I you could get back to me by July 13, that would be great. Thank you!

Jennifer

Attendees:

MDEQ: Liane Shekter-Smith, Richard Benzie, Carrie Monosmith, Kris Philip, Dan Dettweiler, Marjorie Rodriguez (Student), Kevin Holdwick, Mike Prysby, Dana DeBruyn, Steve Busch

EPA Region 5: Tom Poy, Rita Bair, Nick Damato, Janet Kuefler, Michele Palmer, Tom Murphy, Heather Shoven, Cary McElhinney, Andrea Porter, Miguel Deltoral, Mostafa Noureldin

Summary:

1.Changes in Lead Disinvestments and Commitments for FY 2016 ARDP—for discussion: Due to our extreme focus on lead in drinking water, this is the consensus here.

a. Consumer notification of tap results at NTNCWSs:

(Suggested wording) The NCWS program commits to full implementation of the lead consumer notification of tap results requirement, to begin in CY 2016. Region 5 will assist in a notification outreach effort in late FY 2015 to remaining 698 NTNCWSs that are not schools/daycares, to begin providing lead consumer notice in CY 2016. NCWS program commits to include information on providing lead consumer notice in the annual monitoring letter sent to all NTNCWSs for CY 2016.

STATE: The State found this change in the wording acceptable.

Enforcement/Investigatory / Ex. 7A

STATE: The State found this change in the wording acceptable.

c. Follow-up Actions for NTNCWSs that sample outside of June-September 2015 timeframe

Enforcement/Investigatory / Ex. 7A

Enforcement/Investigatory / Ex. 7A

d. Submittal of the lead and copper reporting form

Enforcement/Investigatory / Ex. 7A

Enforcement/Investigatory / Ex. 7A

Enforcement/Investigatory / Ex. 7A

Enforcement/Investigatory / Ex. 7A

ACTION: The Region will discuss Dan's response internally, and get back to the State with any issues/concerns.

Enforcement/Investigatory / Ex. 7A

ACTION: Kris Philip will research with the District Offices to determine the current submittal rate of the lead and copper reporting form from CWSs; and report back to the Region.

2. Enforcement Update with Heather

Enforcement/Investigatory / Ex. 7A

Enforcement/Investigatory / Ex. 7A

3. Status of Flint

a. TTHM levels for May—Due to MDEQ district engineer June 10-RECEIVED; see link to results

https://www.cityofflint.com/2015/06/01/may-water-testing-results-show-all-locations-are-within-acceptable-limits-for-tthm/

All samples below the TTHM MCL; one site still has an LRAA above the MCL but decreased from 105 ppb in Feb to 93.5 ppb in May.

Mike Prysby said he is getting ready to issue the construction permit to the City of Flint to install a GAC filter in July, that will remove more TOC to further reduce the potential of developing TTHMs. Mike said he has already issued a construction permit for a transmission line within the City that will help reduce water age.

b. Lead in Flint

Our discussions with MDEQ indicate that no phosphates/corrosion control has been added to the system since April 2014 when the source of drinking water changed to the Flint River. We understand that the City is just finishing up its second set of 6-month initial monitoring for lead; where the results will probably warrant a Corrosion Control Study to be conducted. Since Flint has lead service lines, we understand some citizen-requested lead sampling is exceeding the Action Level, and the source of drinking water will be changing again in 2016, so to start a Corrosion Control Study now doesn't make sense. The idea to ask Flint to simply add phosphate may be premature; there are many other issues and factors that must be taken into account which would require a comprehensive look at the water quality and the system before any treatment recommendations can/should be made. Miguel is recommending MDEQ and EPA? approach Flint about formally requesting EPA's Office of Research and Development in Cincinnati support on the lead in Flint drinking water issue, and request that Mike Schock, ORD, and possibly Darren Lytle, ORD, to participate in Flint's drinking water advisory committee so that a comprehensive evaluation on how to proceed can be discussed.

Miguel provided a brief summary of the high lead results found at the residence of Citizen name / Ex. 6 Citizen name / Ex. 6 in Flint. Miguel will follow up with a written summary of the work conducted, sample results, and conclusions.

Miguel believes that lead levels in Flint are being affected by the lack of Corrosion Control being conducted by the City, since the LCR requires 2 6-month initial monitoring for a new source. Steve Busch stated that in the Lead sampling pool, almost all of the lead sample sites are lead service lines, and the State is not seeing large increases in lead levels at the tap. Miguel suggested that EPA experts in Lead, Mike Schock; and in distribution systems, Darren Lytle, be added to the Flint drinking water advisory committee to assist the City/State in determining the best way to proceed to minimize lead in the City's drinking water during the interim use of the Flint River, and subsequent use of Lake Huron water.

Miguel said he will send Mike Schock and Darren Lytle's contact information to Steve and Mike. Steve pointed out that the City is following the LCR requirements, and completing the requirements in a timely manner. Miguel's point is that since the LCR was promulgated 20+ years ago, that research and different situations, like Washington D.C., have educated scientists, experts, and regulators that the existing requirements in the LCR may not be as protective as previously thought. Thus, he can only make recommendations as to how to revise sampling protocols. And Miguel acknowledges that it may be another year before these regulation changes are promulgated in the Long-Term Lead and Copper Rule. In December 2015, the NDWAC recommendation is expected.

The Region asked the State if the Flint River will be a permanent supplemental source of drinking water, once the City of Flint connects with the Karegdodi pipeline from Lake Huron. Mike Prysby said that the City is currently pumping 22MGD, but the City has 40-50 MG of storage. The City is currently working on reducing its unaccounted for water losses, and these water losses are dropping. The State, through the Governor's office, provided disadvantaged system funding, $2M which includes $900K for lead detection, and pipe inspection.

4. Update on WaterTrack to SDWIS-State: The migration of WaterTrack data to SDWIS-State was number 39 on the Dept of Technology Management and Budget's (DTMB) project list last year; this year it is

number 30. It doesn't appear this project has a high priority. Does the State have any new information on the progress of this project?

Nonresponsive

5. Consequences of cutting the State drinking water program to a "minimal program"

Jennifer had a discussion with Richard Benzie regarding the possibility of the Michigan State Legislature looking to have just a minimal drinking water program, meaning only a program with activities that are required by the Federal SDWA. Jennifer ultimately discussed this internally with Tom Poy. The minimal program suggested would cut out Operator Certification, Capacity Development, Plan Review, Cross Connection Control, Source Water Protection, among other programs that are State required. Operator Certification and Capacity Development, while not required by the Federal regulations, do have financial strings attached. And Plan review/construction permits are required by the SRF program for a loan. Any recent communication with the State Legislature that they might proceed and make this possibility a reality?

Richard and Liane said there is no current threat from the State Legislature to cut the State-funded PWSS program activities. But there is a State-wide impetus to delete old programs and regulations, so this could lead to questioning the purpose of State-funded PWSS program activities. Richard is just being proactive in preparing a justification. Richard remembers a discussion many years ago about what constitutes a "comprehensive drinking water program". Tom Poy and Jennifer commented in a previous communication with Richard that the EPA PWSS primacy program and the State-funded activities in the drinking water program were meant to complement each other. To support this statement, Jennifer sent Richard some PWSS Priority guidance from the 90's, some preamble language from the 1976 SDWA found by our attorney, and language from Section 142 of the SDWA regulations from 1976 that might assist him in his justification.

Nonresponsive

Nonresponsive

Thank you!

Jennifer

shekterl@michigan.gov; 'Richard Benzie' <benzier@michigan.gov>; 'kris philip' <philipk@michigan.gov>; 'Monosmith, Carrie (DNRE)' <MONOSMITHC@michigan.gov>;

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To: Poy, Thomas[poy.thomas@epa.gov]
From: Hyde, Tinka
Sent: Fri 9/11/2015 2:31:56 PM
Subject: FW: Slightly revised responses to 2 follow-up questions re: Flint drinking water

This may be helpful as well

From: Hedman, Susan
Sent: Tuesday, July 14, 2015 3:30 PM
To: Rowan, Anne
Cc: Hyde, Tinka; Kelley, Jeff; Cannon, Phillippa; Cassell, Peter
Subject: Slightly revised responses to 2 follow-up questions re: Flint drinking water

Q. Mr. Del Toral asserts that a city the size of Flint is required to use a corrosion control treatment such as phosphate in their drinking water. Is Mr. Del Toral correct?

Flint and other large drinking water systems are required to evaluate and optimize pipe corrosion control treatment to protect water from contaminants such as lead. When the City started sourcing drinking water from the Flint River in April 2014, the Michigan Department of Environmental Quality determined that Flint should follow the protocol for new systems -- which requires two new rounds of water sampling to determine whether corrosion control treatment is needed. The City has submitted sampling results for the six-month periods from July-December 2014, and from January-June 2015. MDEQ is currently analyzing the sampling data to determine whether corrosion control treatment is needed.

Q. Also, both Mr. Del Toral, and Marc Edwards, an expert on the issue at Virginia Tech, both say that the manner in which Flint conducts its tests is almost certain to minimize the risk and miss worst-case scenarios. What is the EPA's opinion regarding that?

Michigan complies with the Federal Safe Drinking Water Act's protocol which requires that the tap remain unused for at least 6 hours before taking a sample. EPA is currently revising the federal lead and copper rule to address several issues including sampling protocols.

In addition, EPA notes that the water samples taken from the Citizen name / Ex. 6 residence were atypical in two ways:

- the tap had not been run for over three weeks before the samples were taken. Stagnation can cause higher lead levels, and

- the home's long service line is configured in an unusual way.

From: Rowan, Anne
Sent: Tuesday, July 14, 2015 2:29 PM
To: Hedman, Susan
Cc: Hyde, Tinka; Kelley, Jeff; Cannon, Phillippa; Cassell, Peter
Subject: For Review: Draft responses to 2 follow-up questions re: Flint drinking water - deadline today
Importance: High

Susan, attached below are WD- approved proposed responses to the follow-up questions from Curt Guyette, the ACLU's investigative reporter. Please advise. Thanks.

Q. Mr. Del Toral asserts that a city the size of Flint is required to use a corrosion control treatment such as phosphate in their drinking water. Is Mr. Del Toral correct?

Flint and other large drinking water systems are required to evaluate and optimize corrosion control treatment of pipes to protect water from contaminants such as lead. Because the City started sourcing drinking water from the Flint River in April 2014, the Michigan Department of Environmental Quality determined that Flint should follow the protocol for new systems which requires two new rounds of water sampling. The City has submitted sampling results for the six-month periods from July-December 2014, and from January-June 2015. MDEQ is currently analyzing the sampling data to determine whether corrosion control treatment is needed.

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- the tap had not been run for over three weeks before the samples were taken. Stagnation can be expected to cause higher lead levels, and

- the home's long service line is configured in an unusual way.

To: Deltoral, Miguel[deltoral.miguel@epa.gov]; Poy, Thomas[poy.thomas@epa.gov]; Bair, Rita[bair.rita@epa.gov]; Damato, Nicholas[damato.nicholas@epa.gov]
Cc: Porter, Andrea[porter.andrea@epa.gov]; Crooks, Jennifer[crooks.jennifer@epa.gov]
From: Shoven, Heather
Sent: Mon 9/14/2015 1:46:10 PM
Subject: VT receives $50,000 grant from the National Science Foundation to study Flint water

http://flintwaterstudy.org/

Our VT Research Team wins $50,000 grant from the National Science Foundation to study Flint water

September 14, 2015

We are really excited and proud to announce that our research team just won a $50k Rapid Response Research (or RAPID) grant from the National Science Foundation (NSF). The grant proposal titled "Synergistic Impacts of Corrosive Water and Interrupted Corrosion Control on Chemical/Microbiological Water Quality: Flint, MI." was submitted to NSF in late July.

RAPID grants are ***"used for proposals having a severe urgency…., including quick-response research on natural or anthropogenic disasters and similar unanticipated events."***

Read the Virginia Tech press release here.

To: Hyde, Tinka[hyde.tinka@epa.gov]; Henry, Timothy[henry.timothy@epa.gov]
From: Poy, Thomas
Sent: Mon 9/14/2015 2:39:03 PM
Subject: FW: VT receives $50,000 grant from the National Science Foundation to study Flint water

FYI…press release from Virginia Tech/Marc Edwards.

Tom Poy

Chief, Ground Water and Drinking Water Branch

USEPA - Region 5

(312) 886-5991

From: Shoven, Heather
Sent: Monday, September 14, 2015 8:46 AM
To: Deltoral, Miguel; Poy, Thomas; Bair, Rita; Damato, Nicholas
Cc: Porter, Andrea; Crooks, Jennifer
Subject: VT receives $50,000 grant from the National Science Foundation to study Flint water

http://flintwaterstudy.org/

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Read the Virginia Tech press release here.

To: Thomas Poy[Poy.Thomas@epa.gov]
From: Henry, Timothy
Sent: Mon 9/14/2015 3:36:38 PM
Subject: FW: Draft of Rep. Kildee Response Letter re: Flint Drinking Water

We will be talking about the response at 1100. One question I have looking at the orange folder is who from ORC are we working with?

Tim Henry
Deputy Director, Water Division
U.S. EPA (W-15J)
77 W. Jackson Blvd., Chicago, IL 60604-3590
Phone: 312.886.6107 Fax: 312.692.2578

From: Hyde, Tinka
Sent: Monday, September 14, 2015 7:13 AM
To: Henry, Timothy
Subject: Fwd: Draft of Rep. Kildee Response Letter re: Flint Drinking Water

Sent from my iPhone

Begin forwarded message:

> **From:** "Hedman, Susan" <hedman.susan@epa.gov>
> **Date:** September 11, 2015 at 9:51:38 PM CDT
> **To:** "Deamer, Eileen" <deamer.eileen@epa.gov>
> **Cc:** "Kaplan, Robert" <kaplan.robert@epa.gov>, "Hyde, Tinka" <hyde.tinka@epa.gov>, "Kelley, Jeff" <kelley.jeff@epa.gov>, "Fortin, Denise" <Fortin.Denise@epa.gov>
> **Subject: Re: Draft of Rep. Kildee Response Letter re: Flint Drinking Water**
>
> Let's discuss at the Monday morning meeting.
>
> Sent from my iPhone
>
> On Sep 11, 2015, at 4:10 PM, Deamer, Eileen <deamer.eileen@epa.gov> wrote:
>
>> Hi Susan and Bob –

Please find attached a draft response to the Rep. Kildee letter regarding the drinking water lead levels in Flint. I thought you might want to review over the weekend, so I'm sending electronically.

Thanks,

Eileen

<AL-15-001-3725 (Kildee Flint) 9-11-15 v5 clean.docx>

To: Henry, Timothy[henry.timothy@epa.gov]
From: Poy, Thomas
Sent: Mon 9/14/2015 3:44:03 PM
Subject: RE: Draft of Rep. Kildee Response Letter re: Flint Drinking Water

I'm sending it to Joanna Glowacki and Jane Lupton.

Tom Poy

Chief, Ground Water and Drinking Water Branch

USEPA - Region 5

(312) 886-5991

From: Henry, Timothy
Sent: Monday, September 14, 2015 10:37 AM
To: Poy, Thomas
Subject: FW: Draft of Rep. Kildee Response Letter re: Flint Drinking Water

We will be talking about the response at 1100. One question I have looking at the orange folder is who from ORC are we working with?

Tim Henry
Deputy Director, Water Division
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Phone: 312.886.6107 Fax: 312.692.2578

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To: Henry, Timothy
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> **Cc:** "Kaplan, Robert" <kaplan.robert@epa.gov>, "Hyde, Tinka" <hyde.tinka@epa.gov>, "Kelley, Jeff" <kelley.jeff@epa.gov>, "Fortin, Denise" <Fortin.Denise@epa.gov>
> **Subject: Re: Draft of Rep. Kildee Response Letter re: Flint Drinking Water**
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>>
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>>
>> Eileen
>>
>> <AL-15-001-3725 (Kildee Flint) 9-11-15 v5 clean.docx>

To: Henry, Timothy[henry.timothy@epa.gov]
From: Damato, Nicholas
Sent: Tue 9/15/2015 7:33:27 PM
Subject: FW: Interim Report on High Lead Levels in Flint
Flint Michigan Interim Report Final 06-24-2015.pdf
Flint Michigan Interim Report Final with bcc INTERNAL COPY 06-24-2015.pdf
Timeline of Events Final 06-24-2015.pdf

Tim – Per your request.

Nick

From: Deltoral, Miguel
Sent: Wednesday, June 24, 2015 2:05 PM
To: Poy, Thomas; Bair, Rita; Damato, Nicholas
Cc: Shoven, Heather; Porter, Andrea; Crooks, Jennifer
Subject: Interim Report on High Lead Levels in Flint
Importance: High

Attached is the interim report on the high lead levels in Flint, Michigan. Sorry to take so long on this. I am working as fast as I can on the final report. I am waiting on some additional information from Marc Edwards before I can finish the final report. The first doc is the signed memo with the external 'cc' folks. The second is the internal copy with the 'bcc' list and the third doc is the timeline of events up to date on the Flint water quality.

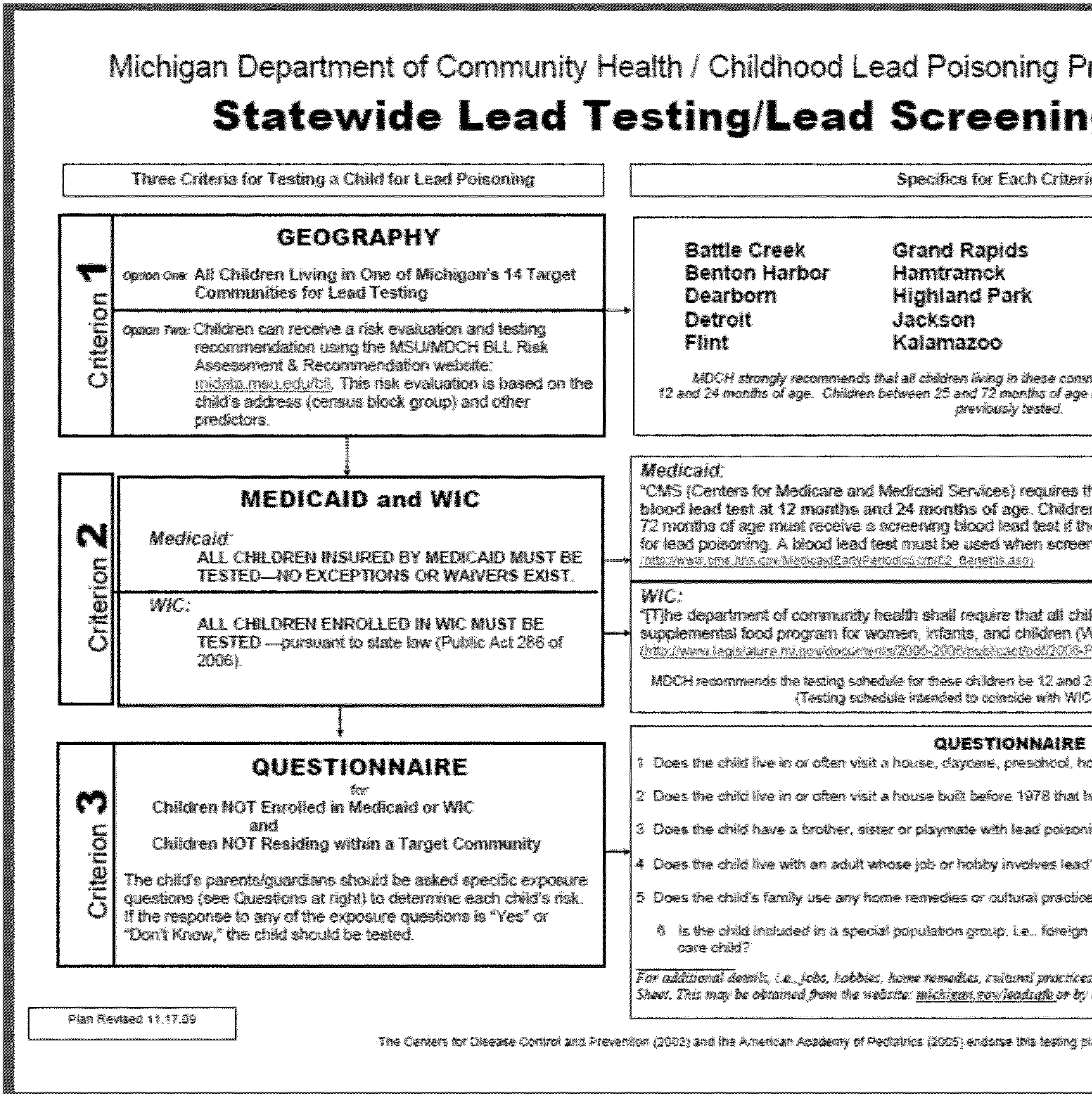
Miguel A. Del Toral

Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

To: Deltoral, Miguel[deltoral.miguel@epa.gov]; Crooks, Jennifer[crooks.jennifer@epa.gov]
From: Porter, Andrea
Sent: Tue 9/15/2015 9:30:01 PM
Subject: blood lead levels --> mi considers flint a target community, requires children be tested

Hi Miguel and Jen,

It looks like there should be existing blood lead data for children in Flint. Michigan requires childhood blood lead testing in particular communities (Flint is one of them), as well as for all children on Medicaid and WIC (source: http://www.michigan.gov/documents/mdch/testing-screening071009_287511_7.pdf):



Michigan Department of Community Health / Childhood Lead Poisoning Pr

Statewide Lead Testing/Lead Screenin

Three Criteria for Testing a Child for Lead Poisoning

Specifics for Each Criteri

Criterion 1

GEOGRAPHY

Option One: All Children Living in One of Michigan's 14 Target Communities for Lead Testing

Option Two: Children can receive a risk evaluation and testing recommendation using the MSU/MDCH BLL Risk Assessment & Recommendation website: midata.msu.edu/bll. This risk evaluation is based on the child's address (census block group) and other predictors.

Battle Creek
Benton Harbor
Dearborn
Detroit
Flint

Grand Rapids
Hamtramck
Highland Park
Jackson
Kalamazoo

MDCH strongly recommends that all children living in these comm 12 and 24 months of age. Children between 25 and 72 months of age previously tested.

Criterion 2

MEDICAID and WIC

Medicaid:
ALL CHILDREN INSURED BY MEDICAID MUST BE TESTED—NO EXCEPTIONS OR WAIVERS EXIST.

WIC:
ALL CHILDREN ENROLLED IN WIC MUST BE TESTED —pursuant to state law (Public Act 286 of 2006).

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MDCH recommends the testing schedule for these children be 12 and 2 (Testing schedule intended to coincide with WIC

Criterion 3

QUESTIONNAIRE
for
Children NOT Enrolled in Medicaid or WIC
and
Children NOT Residing within a Target Community

The child's parents/guardians should be asked specific exposure questions (see Questions at right) to determine each child's risk. If the response to any of the exposure questions is "Yes" or "Don't Know," the child should be tested.

QUESTIONNAIRE

1 Does the child live in or often visit a house, daycare, preschool, ho

2 Does the child live in or often visit a house built before 1978 that h

3 Does the child have a brother, sister or playmate with lead poisoni

4 Does the child live with an adult whose job or hobby involves lead

5 Does the child's family use any home remedies or cultural practice

6 Is the child included in a special population group, i.e., foreign care child?

For additional details, i.e., jobs, hobbies, home remedies, cultural practices Sheet. This may be obtained from the website: michigan.gov/leadsafe or by

Plan Revised 11.17.09

The Centers for Disease Control and Prevention (2002) and the American Academy of Pediatrics (2005) endorse this testing pl

It seems like there should be a good data set available that could be used to see if childhood blood lead levels are correlated with the switch in water source.

Thanks,

Andrea Porter

Environmental Engineer

Ground Water & Drinking Water Branch

U.S. EPA, Region 5 (WG-15J)

77 W. Jackson Blvd.

Chicago, IL 60604

Phone: 312-886-4427

Fax: 312-697-2656

To: Porter, Andrea[porter.andrea@epa.gov]; Deltoral, Miguel[deltoral.miguel@epa.gov]
From: Crooks, Jennifer
Sent: Tue 9/15/2015 9:51:53 PM
Subject: RE: blood lead levels --> mi considers flint a target community, requires children be tested

So it sounds like MI Dept of Community Health would have these lead results?

Jen

From: Porter, Andrea
Sent: Tuesday, September 15, 2015 4:30 PM
To: Deltoral, Miguel; Crooks, Jennifer
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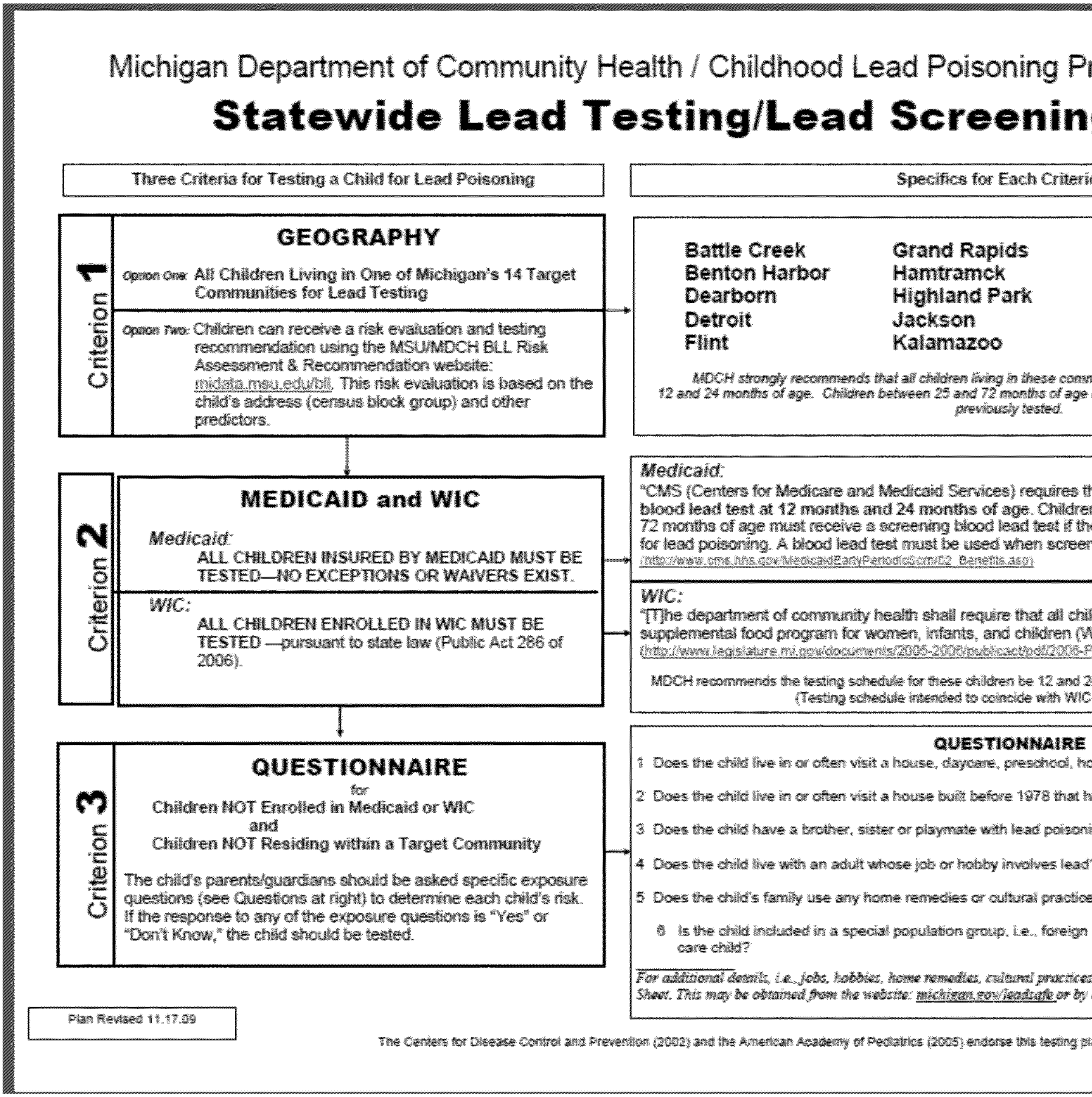

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U.S. EPA, Region 5 (WG-15J)

77 W. Jackson Blvd.

Chicago, IL 60604

Phone: 312-886-4427

Fax: 312-697-2656

To: Crooks, Jennifer[crooks.jennifer@epa.gov]; Porter, Andrea[porter.andrea@epa.gov]
From: Deltoral, Miguel
Sent: Wed 9/16/2015 12:35:07 PM
Subject: Re: blood lead levels --> mi considers flint a target community, requires children be tested

I am sure there are ways to look at the data, but because the high lead period is relatively short and the water quality is so bad, I suspect lots of folks stopped drinking the water like the Walters. Also, I don't think we know how quickly the lead levels went up, so periods of lower lead and higher lead are mixed in over the past year as well as LSL and non-LSL areas. Still, it doesn't hurt to look.

Miguel A. Del Toral
Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

From: Crooks, Jennifer
Sent: Tuesday, September 15, 2015 04:51 PM
To: Porter, Andrea; Deltoral, Miguel
Subject: RE: blood lead levels --> mi considers flint a target community, requires children be tested

So it sounds like MI Dept of Community Health would have these lead results?

Jen

From: Porter, Andrea
Sent: Tuesday, September 15, 2015 4:30 PM
To: Deltoral, Miguel; Crooks, Jennifer
Subject: blood lead levels --> mi considers flint a target community, requires children be tested

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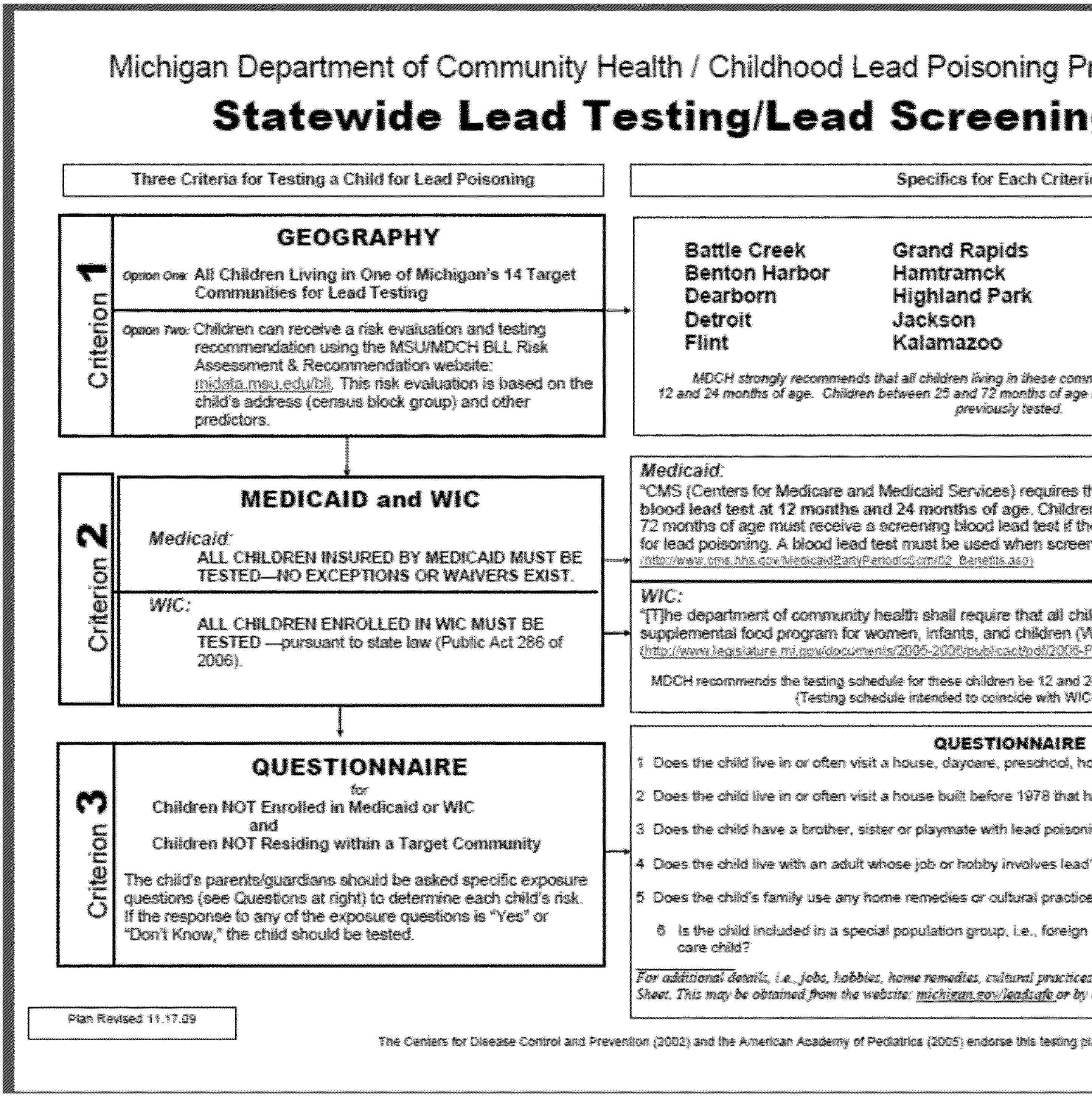

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From: Deltoral, Miguel
Sent: Wed 9/16/2015 12:41:01 PM
Subject: New Flint Articles and more...

The VT website now has maps on the lead testing.

http://flintwaterstudy.org/

The Flint mayor has asked the Governor for $30M for infrastructure improvements, including $10M to replace lead service lines.

Flint asks Gov. Snyder for $30M to upgrade water system

http://www.freep.com/story/news/local/michigan/2015/09/15/flint-governor-snyder-upgrade-water-system/72300244/

Did Flint Officials Rig the Water Testing Results?

https://www.youtube.com/watch?v=-8Qjz5bF690

Virginia Tech professor says Flint's tests for lead in water can't be trusted

http://www.mlive.com/news/flint/index.ssf/2015/09/virginia_tech_researcher_says.html

Lead Astray: An ACLU of Michigan Investigation Has Found a Stream of Irregularities in Flint's Water Tests

http://www.aclumich.org/democracywatch/

Expert Says Flint is Misleading People About Water Safety

https://www.youtube.com/watch?v=S-Q8L0CoxRc

Researchers present findings of high lead levels in Flint water

http://www.abc12.com/home/headlines/Water-researchers-visit-Flint-homes-with-high-Lead-levels-327523751.html

Protestors discuss new research on Flint water

http://nbc25news.com/news/local/protestors-discuss-new-research-on-flint-water

Miguel A. Del Toral
Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

To: Fortin, Denise[Fortin.Denise@epa.gov]
From: Hedman, Susan
Sent: Wed 9/16/2015 2:23:37 PM
Subject: Re: Recent Flint Journal clips regarding drinking water

Thanks.

Sent from my iPhone

On Sep 16, 2015, at 8:45 AM, Fortin, Denise <Fortin.Denise@epa.gov> wrote:

> Just a quick note from Rep. Kildee's staffer:
>
> "Hi Denise - Thank you for the response. We are looking forward to an informative and productive conversation next week."
>
> As discussed, I also shared our letter with MDEQ's legislative liaison.
>
> Denise Fortin
>
> Congressional Liaison
>
> Office of Regional Administrator
>
> U.S. Environmental Protection Agency
>
> 312-886-9859
>
> **From:** Hedman, Susan
> **Sent:** Wednesday, September 16, 2015 8:33 AM
> **To:** Kelley, Jeff
> **Cc:** Kaplan, Robert; Hyde, Tinka; Deamer, Eileen; Cassell, Peter; Peterson, John; Fortin, Denise
> **Subject:** Re: Recent Flint Journal clips regarding drinking water

Thanks -- looping in Tim.

Denise -- Any reaction to the letter that we sent yesterday to Rep. Kildee?

Sent from my iPhone

On Sep 16, 2015, at 8:17 AM, Kelley, Jeff <kelley.jeff@epa.gov> wrote:

> Below are the several stories the Flint Journal has run the last couple days:
>
> - □□□□□□□□ Virginia Tech professor says Flint's tests for lead in water can't be trusted
> - □□□□□□□□ Activists urge residents to keep voices heard in Flint water issue
> - □□□□□□□□ Lawsuit aimed at forcing Flint to end use of Flint River dismissed
> - □□□□□□□□ Flint mayor asks governor for $10 million to replace lead water pipes
> - □□□□□□□□ Flint council meeting today will include special water presentation
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> I've seen a couple AP stories as well, but they seem to be summarizing the Flint Journal coverage.
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> http://www.mlive.com/news/flint/index.ssf/2015/09/virginia_tech_researcher_says.html
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> **Virginia Tech professor says Flint's tests for lead in water can't be trusted**
>
> By Ron Fonger | rfonger1@mlive.com The Flint Journal

September 15, 2015 at 5:03 PM, updated September 15, 2015 at 6:04 PM

(This story has been updated with a statement issued by Flint Administrator Natasha Henderson.)

FLINT, MI -- A Virginia Tech University professor overseeing research on lead in Flint's drinking water says the results of the city's own testing for lead cannot be trusted.

Professor Marc Edwards, who was scheduled to speak in Flint Tuesday night, Sept. 15, on water sampling by Virginia Tech students and faculty, said water flowing into homes and businesses in Flint is so corrosive that it's eating into lead and lead solder in pipes.

Virginia Tech researchers have said their testing shows a serious problem with lead in Flint water including 10 percent of homes that had 25 parts per billion of lead or more -- far more than the allowable level -- 15 ppb -- set in federal guidelines.

City and state Department of Environmental Quality officials have said those numbers are far higher than Flint's own testing shows, which are lead levels that are within allowable levels.

Edwards said Tuesday that the city's results amount to "smoke and mirrors."

Among the problems Edwards claimed: The city never tested in areas known to be susceptible to high lead levels, never re-sampled homes in 2015 that were found to have high levels in 2014, and failed to notify residents when they did find problems with lead in the water of their homes.

City Administrator Natasha Henderson released a statement today in response to questions based on comments made by Edwards and others.

"Testing was performed by the city of Flint using (U.S. Environmental Protection Agency) and (Michigan Department of Environmental Quality) approved procedures according to regulatory statute," Henderson's statement says.

"In both (two) rounds of testing, over 175 homes were solicited for voluntary participation. Each testing bottle given to residents for sampling contains MDEQ approved instructions for collection. We are currently working with the MDEQ to implement our water optimization plan to add corrosion control to our water and still encourage anyone who would like a free and independent in-home lead test to be performed to schedule one by calling 810-787-6537 or by emailing flintwater@cityofflint.com."

Edwards was joined in a news conference at City Hall with water activists who have advocated that the city end its use of the Flint River as a water source and return to purchasing Lake Huron water from the city of Detroit.

The professor said a return to less-corrosive Lake Huron water would drastically reduce lead levels in tap water within two weeks and nearly eliminate high lead readings after a month.

"This (problem with lead) is occurring because the water is too corrosive," he said. "It has too much salt in it, and there was no plan to control the corrosion" when the city began using the river in April 2014.

"Flint is the only city in American that I'm aware of that does not have a corrosion-control plan in place to stop this kind of problem."

Just this month, as the results of the Virginia Tech water study began to be released, Flint Mayor Dayne Walling said in a news release that the city -- acting on advice from the state Department of Environmental Quality -- would speed up the development of a plan for corrosion control.

The Flint Journal-MLive could not reach Walling for comment on Edwards' remarks Tuesday.

On Monday, Sept 14, the mayor called on Gov. Rick Snyder to supply Flint with $30 million for Flint's infrastructure, including $10 million to replace lead service lines to water customers' homes.

Edwards, who Time Magazine dubbed "The Plumbing Professor" in 2004 and which listed him among the four most important innovators in water from around the world, is among those scheduled to speak during a town hall meeting from 6-8 p.m. Tuesday at Saints of God Church, 2200 Forest Hill Ave.

Among other comments and information released during Tuesdays news conference:

The city's east-west midsection had the highest percentage of water samples that registered more than 15 parts per billion of lead in at least one sample. Thirty percent of 84 test sites registered at least one sample of 15 ppb or more of lead in Wards 5, 6 and 7.

Virginia Tech researchers said the National Science Foundation has agreed to spend $50,000 to fund their one-year study into what they called a "perfect storm" of water distribution system corrosion problems in Flint.

Kettering University Professor Laura Sullivan, a member of Flint's Technical Advisory Committee for water, called on the city to replace all service lines containing lead at no cost to residents and to provide information by the end of this month on where service lines containing lead are located.

Nayyirah Shariff, a representative of the Flint Democracy Defense League, called on the city to distribute free filters to all water customers, saying lead in water here amounts to a "public health crisis."

Flint and Michigan Department of Environmental Quality officials have said lead has not tested above allowable levels in Flint since the city began using the Flint River for drinking water in April 2014.

Brad Wurfel, director of communications for the DEQ, said there is lead in all water where lead service lines and plumbing with lead solder exist.

"The problem isn't new," Wurfel said Tuesday. "It's just news (now, and) a knee-jerk reaction would be an irresponsible response."

The DEQ is preparing a briefing for state and federal officials regarding Flint's lead-in-water issues, the director said.

Jason Lorenz, a spokesman for the city, was not immediately available for comment on Edwards' remarks today or his findings.

Edwards used two water bottles and two iron nails to demonstrate what he said was the corrosiveness of Flint water, showing how the sample of treated river water was far more discolored by a nail than water from the city of Detroit.

"The (Flint) water looks bad, it smells bad, and it tastes bad, and this is part of what people have been complaining about," Edwards said. "If you don't have this problem in Flint, it's because you're lucky."

Lead is a toxic metal that was used for many years in products found in and around homes, according to the U.S. Environmental Protection Agency

"Even at low levels, lead may cause a range of health effects, including behavioral problems and learning disabilities," EPA's website says. "Children 6 years old and under are most at risk because this is when the brain is developing."

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http://www.mlive.com/news/flint/index.ssf/2015/09/activists_urge_residents_to_ke.html

Activists urge residents to keep voices heard in Flint water issue

By Roberto Acosta | racosta1@mlive.com The Flint Journal
September 15, 2015 at 10:16 PM, updated September 15, 2015 at 11:01 PM

FLINT, MI – If they want change, Flint resident Melissa Mays said those gathered in the crowd at Saints of God Church in Flint they need to have their voices heard from the city all the way to Lansing and in Washington, D.C.

More than 100 people filled pews inside the church off Forest Hill Avenue on the city's north side to hear Virginia Tech professor Marc Edwards speak about the study conducted by himself and a group of students.

"I'm telling you this was an epically bad decision," said Edwards of the switch from Detroit water to Flint river water, while going over information he discussed during a news conference Tuesday at Flint City Hall.

Research done at Virginia Tech concluded there was a serious problem with lead in Flint water, including 10 percent of homes that had 25 parts per billion of lead or more -- far more than the allowable level -- 15 ppb -- set in federal guidelines, but the city and state Department of Environmental Quality have said water sampling by the city shows lead levels are within state and federal standards.

The testing of samples from more than 200 Flint homes was helped by $50,000 in funding from the National Science Foundation as part of their one-year study being conducted on the city's water system.

He added the Flint water system does not include an inhibitor that would cut down on wear and tear that rust and lead can cause on pipes in the network for city residents, claiming it has caused the system to age more than a decade in less than two years' time.

Edwards was joined by Siddhartha Roy, a civil and environmental engineering doctoral student at Virginia Tech, Curt Guyette, an investigative reporter for the ACLU of Michigan during the town hall meeting organized by Water You Fighting For, the Coalition for Clean Water, and Concerned Pastors for Social Action.

A lawsuit filed by the Coalition for Clean Water that sought to force the city to stop the use of Flint River water for drinking was dismissed earlier in the day by Genesee Circuit Judge Archie L. Hayman.

Trachelle Young, the attorney representing the Coalition for Clean Water, said her clients are considering whether to amend their complaint or to refer the request to the U.S. Attorney's Office.

"My position remains the water is not safe," she said Tuesday.

Edwards has said he would not use the water for drinking or cooking unless it was tested for lead, but he did note there was no evidence to show it could not be used for other duties, such as taking a shower, brushing teeth, watering plants and flushing toilets.

He did share some deep concern for those using the water to mix with formula for babies, stating "No one should be making up formula from flint tap water at this time."

City Administrator Natasha Henderson released a statement today in response to questions based on comments made by Edwards and others.

"Testing was performed by the city of Flint using (U.S. Environmental Protection Agency) and (Michigan Department of Environmental Quality) approved procedures according to regulatory statute," Henderson's statement says.

"In both (two) rounds of testing, over 175 homes were solicited for voluntary participation. Each testing bottle given to residents for sampling contains MDEQ approved instructions for collection. We are currently working with the MDEQ to implement our water optimization plan to add corrosion control to our water and still encourage anyone who would like a free and independent in-home lead test to be performed to schedule one by calling 810-787-6537 or by emailingflintwater@cityofflint.com."

Several in the crowd at Saints of God Church, including LeAnne Walters, questioned testing methods used by the city that included pre-flushing at homes for several minutes that may have led to differing results.

"One of the biggest problems we're having with this is how the state allows lead and copper samples to take place," said Walters, whose been working with Edwards since April after high lead levels in the water at her home, with claims incorrect bottle sizes are being used for testing.

"I wanted to get to the science, because you can't argue with science," she said. Walters and Mays called for residents to keep showing up at meetings and get in touch with local, state and federal legislators about the issue.

"We have made a difference. I've heard so many times that people feel hopeless in this situation, that nobody's listening, that nobody takes us seriously," said Walters. "We are being taken seriously."

Mays said those in attendance need to contact others and come to meetings and gatherings like the one Tuesday evening and contact legislators to show their concerns and voice will not go away, while listing off demands from the Coalition for Clean Water that include a federal investigation into testing, water switched back to Detroit, replacement of lead service lines, the Michigan Department of Environmental Quality provide lead certified filters in each home and the Environmental Protection Agency step in and audit DEQ sampling.

Flint Mayor Dayne Walling has asked for $30 million from the state for the city's water infrastructure, including $10 million for a new program aimed at replacing lead service lines in the city.

"Flood them flood them flood them, make them hear you," said Mays.

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http://www.mlive.com/news/flint/index.ssf/2015/09/lawsuit_aimed_at_forcing_flint.html

Lawsuit aimed at forcing Flint to end use of Flint River dismissed

By Ron Fonger | rfonger1@mlive.com The Flint Journal on
September 15, 2015 at 11:22 AM, updated September 15, 2015 at 4:58 PM

FLINT, MI — A lawsuit that sought to force the city to end its use of the Flint River for drinking water has been dismissed by Genesee Circuit Judge Archie Hayman.

Filed by the Coalition for Clean Water, which includes the Concerned Pastors for Social Action, the lawsuit alleged the city "recklessly endangered" the health and safety of residents by ending purchases of treated Lake Huron water from the city of Detroit and by using the Flint River instead as its water source since April 2014.

The coalition lawsuit is not related to a class action lawsuit pending against the city. An injunction issued in that case required the city to lower water rates. The class action suit claims the city improperly raised rates and charges to water customers dating to 2011.

The city issued a news release on the dismissal Tuesday, Sept. 15, saying that, in this case, Hayman determined "that he did not have jurisdiction to provide the relief sought by the plaintiff. All counts of the Coalition's amended complaint were therefore dismissed."

Trachelle Young, the attorney representing the Coalition for Clean Water, said her clients are considering whether to amend their complaint or to refer the request to the U.S. Attorney's Office.

"My position remains the water is not safe," Young said Tuesday, Sept. 15.

Hayman's ruling comes after the city successfully filed to move the water case to federal court, and a judge there denied Young's motion for a preliminary injunction.

The coalition later dropped its federal claim and sought to pursue the case in Genesee County.

After eight months in violation of the Safe Drinking Water Act because of high levels of total trihalomethanes, Flint was recently notified that the violation has been lifted because of lower TTHM readings during testing in 2015.

Mayor Dayne Walling this week asked Gov. Rick Snyder for $30 million for Flint's water infrastructure, including $10 million for a new program aimed at replacing lead service lines in the city.

Researchers from Virginia Tech University have said their testing of homes in Flint shows high levels of lead, but the city and state Department of Environmental Quality have said water sampling by the city shows lead levels are within state and federal standards.

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http://www.mlive.com/news/flint/index.ssf/2015/09/flint_mayor_asks_governor_for_1.html

Flint mayor asks governor for $10 million to replace lead water pipes

By Ron Fonger | rfonger1@mlive.com The Flint Journal
September 14, 2015 at 8:07 PM, updated September 14, 2015 at 10:45 PM

FLINT, MI — Mayor Dayne Walling is asking Gov. Rick Snyder for $30 million to upgrade Flint's water system, including $10 million to remove lead service pipes and plumbing susceptible to leaching lead.

Walling, speaking to the City Council on Monday, Sept. 14, announced the request, made in a letter to the governor the same day.

"We need every available expert and resource to address Flint's water problems," Walling's letter says.

"Flint's safety is my top priority. Just as the city and state have worked together on public safety, we need additional support for fixing the water problems. We need $30 million in new funds to repair and update the city-wide infrastructure and to assist households in becoming lead-free."

Walling's letter comes the day before a professor from Virginia Tech University is scheduled to speak at a town hall meeting in Flint about the results of a study of lead in the city's drinking water.

The meeting is from 6-8 p.m. Tuesday, Sept. 15, in Saints of God Church, 2200 Forest Hill Ave.

Researchers from Virginia Tech last week advised Flint residents not to drink or cook with tap water here without flushing lines before each use or using a filter to remove lead.

Virginia Tech students and faculty have posted the results of 252 water tests from Flint online, concluding the city has "a very serious lead-in-water problem."

Testing so far has shown 10 percent of the water samples from across the city have 25 parts per billion of lead or more — far more than the allowable level, 15 ppb, set in federal guidelines.

City and state officials have said they have not seen such high lead levels in their own tests of more than 150 homes in the city since April 2014.

Walling spoke about his letter to Snyder as part of a water presentation that included City Administrator Natasha Henderson and Department of Public Works Director Howard Croft.

Croft said the city has made important upgrades to its water treatment and transmission systems in the short time since it began using the Flint River as its water source in April 2014.

The DPW director said the city has a draft copy of a plan for making Flint water less corrosive and less likely to result in high amounts of lead in the water supply.

Walling has been successful in securing state money for Flint's water system previously.

In February, Snyder awarded Flint $2 million to find leaks in city water lines and to replace a wastewater incinerator — moves officials said would free up money for improving the quality of city water.

Walling's request and remarks did not impress Flint Councilman Eric Mays, who left the council table and did not vote to endorse the mayor's letter to the governor.

The council voted 8-0, with Mays absent, to endorse the letter.

Mays called Walling's comments and letter "nothing more than a media show ... a horse and pony show."

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http://www.mlive.com/news/flint/index.ssf/2015/09/flint_council_meeting_today_wi.html

Flint council meeting today will include special water presentation

By Ron Fonger | rfonger1@mlive.com The Flint Journal
September 14, 2015 at 12:32 PM, updated September 14, 2015 at 1:56 PM

FLINT, MI -- A special presentation on water will be a part of a City Council meeting at 6 p.m. today, Sept. 14, in the third-floor council chambers in City Hall, 1101 S. Saginaw St.

"The presentation will include the steps taken thus far to address the quality, safety and affordability of the water as well as upcoming plans to make improvements to the water system," the city says in a news release. "This is a public meeting and residents are encouraged to attend."

Flint recently emerged from having been in violation of the Safe Drinking Water Act because of high levels of total trihalomethanes, a byproduct of chlorinating water.

City officials credit changes in the water treatment and distribution systems, including the addition of a $1.6-million granulated carbon filter media, for the improvement.

New questions about lead in drinking water have also been raised recently by a Virginia Tech University study of 277 water samples taken in Flint.

The Virginia Tech testing so far has shown 10 percent of water samples from across the city tested at 25 parts per billion of lead or more -- far more than the allowable level -- 15 ppb -- set in federal guidelines.

City and state officials have said their own tests since April 2014 show the city is in compliance with all regulations on lead and said high readings in some homes are tied to lead or lead solder in service lines and plumbing inside homes.

Flint changed its drinking water source from Lake Huron water supplied by the city of Detroit to the Flint River in April 2014.

Jeff Kelley
Director, Office of External Communications
U.S. EPA Region 5
ph: 312-353-1159

To: Henry, Timothy[henry.timothy@epa.gov]
From: Damato, Nicholas
Sent: Wed 9/16/2015 2:44:33 PM
Subject: FW: New Flint Articles and more...

Tim,

Some additional info on Flint. A couple of the links are duplicates from yesterday and several are new. Some info from the Town Hall meeting.

Nick

From: Deltoral, Miguel
Sent: Wednesday, September 16, 2015 7:41 AM
To: Poy, Thomas; Bair, Rita; Damato, Nicholas
Cc: Shoven, Heather; Porter, Andrea; Crooks, Jennifer; Moriarty, Edward; Kempic, Jeffrey; King, Carol
Subject: New Flint Articles and more...

The VT website now has maps on the lead testing.

http://flintwaterstudy.org/

The Flint mayor has asked the Governor for $30M for infrastructure improvements, including $10M to replace lead service lines.

Flint asks Gov. Snyder for $30M to upgrade water system

http://www.freep.com/story/news/local/michigan/2015/09/15/flint-governor-snyder-upgrade-water-system/72300244/

Did Flint Officials Rig the Water Testing Results?

https://www.youtube.com/watch?v=-8Qjz5bF690

Virginia Tech professor says Flint's tests for lead in water can't be trusted

http://www.mlive.com/news/flint/index.ssf/2015/09/virginia_tech_researcher_says.html

Lead Astray: An ACLU of Michigan Investigation Has Found a Stream of Irregularities in Flint's Water Tests

http://www.aclumich.org/democracywatch/

Expert Says Flint is Misleading People About Water Safety

https://www.youtube.com/watch?v=S-Q8L0CoxRc

Researchers present findings of high lead levels in Flint water

http://www.abc12.com/home/headlines/Water-researchers-visit-Flint-homes-with-high-Lead-levels-327523751.html

Protestors discuss new research on Flint water

http://nbc25news.com/news/local/protestors-discuss-new-research-on-flint-water

Miguel A. Del Toral

Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

To: Darman, Leslie[Darman.Leslie@epa.gov]; Glowacki, Joanna[glowacki.joanna@epa.gov]
From: Deltoral, Miguel
Sent: Thur 9/17/2015 11:41:19 AM
Subject: Fw: New Flint Articles and more...

Sorry, I forgot to copy you folks on this...flying too fast...

Miguel A. Del Toral
Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

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Protestors discuss new research on Flint water

http://nbc25news.com/news/local/protestors-discuss-new-research-on-flint-water

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To: Schock, Michael[Schock.Michael@epa.gov]; Lytle, Darren[Lytle.Darren@epa.gov]; kempic.jeffrey@epa.gove[kempic.jeffrey@epa.gove]; Burneson, Eric[Burneson.Eric@epa.gov]; demarco.carol@epa.gov[demarco.carol@epa.gov]; Murphy, Thomas[murphy.thomas@epa.gov]; Shoven, Heather[shoven.heather@epa.gov]; Deltoral, Miguel[deltoral.miguel@epa.gov]
From: Marc Edwards
Sent: Mon 9/21/2015 2:29:41 AM
Subject: Flint MI: LCR Enforcement Issues
Flint LCR for FOIA 6429-15 (5).pdf
FOIA 15-585 Part 2 55pgs (12).pdf

Mike, Darren, Jeff, Eric, Carol and Miguel and R5 MI/Enforcement personnel (as listed on the R5 webpage).

In this e-mail, I am making you aware of what we know regarding the Flint lead situation.

1) They do not have an approved lead sampling pool. Only 13 of the lowest lead sampled homes from 2014, were resampled in 2015.

The homes sampling high in 2014, were not asked to be resampled.

At best, their program is sending out sampling bottles at random across the city.

2) This message exemplifies the type of site selection, that they are doing to satisfy their high risk LCR monitoring pool site.

That is, none. They are not even hiding it.

http://www.flintneighborhoodsunited.org/drinking-water-testing/.

3) Furthermore, in a video now on the ACLU website, at the end of the interview, Mike Glasgow (Flint LCR program) notes what is perfectly obvious from looking at the MDEQ FOIA materials.

"we threw out bottles everywhere just to collect as many as we can, just to hit our number, and we just turn in every result we get in."

Moreover, they do not have the records to show the homes have lead pipe. ***"we are still looking for the records"***

See video here. Start at 4 minutes and 13 seconds to see the admission.

https://vimeo.com/139882021

4) On top of that, according to my count, MDEQ covered up no fewer than 5 violations in the 2015 sample round. These include:

a) Technical violation in that what they now stamp as the "draft" report (attached) is late (the signed date is 7/28/2015).

It was due 7/10/2015. The final "revised" report is dated 8/20/2015 (also attached), which is 40 days late.

b) Although 87 sites from 2014 were not resampled, no written justification for the site changes was provided in the FOIA materials, and this is required by law.

The statement given today by Flint, that residents were not resampled because they did not want to participate, is contradicted by my conversations with residents.

c) In the original 71 samples Flint submitted late, the lead 90%ile action level was exceeded. MDEQ took the initiative to invalidate 2 samples, dropping Flint below the Action Level.

Flint never requested in writing that any of the samples be invalidated (see the comments written in the box of page 1, FOIA 15-585).

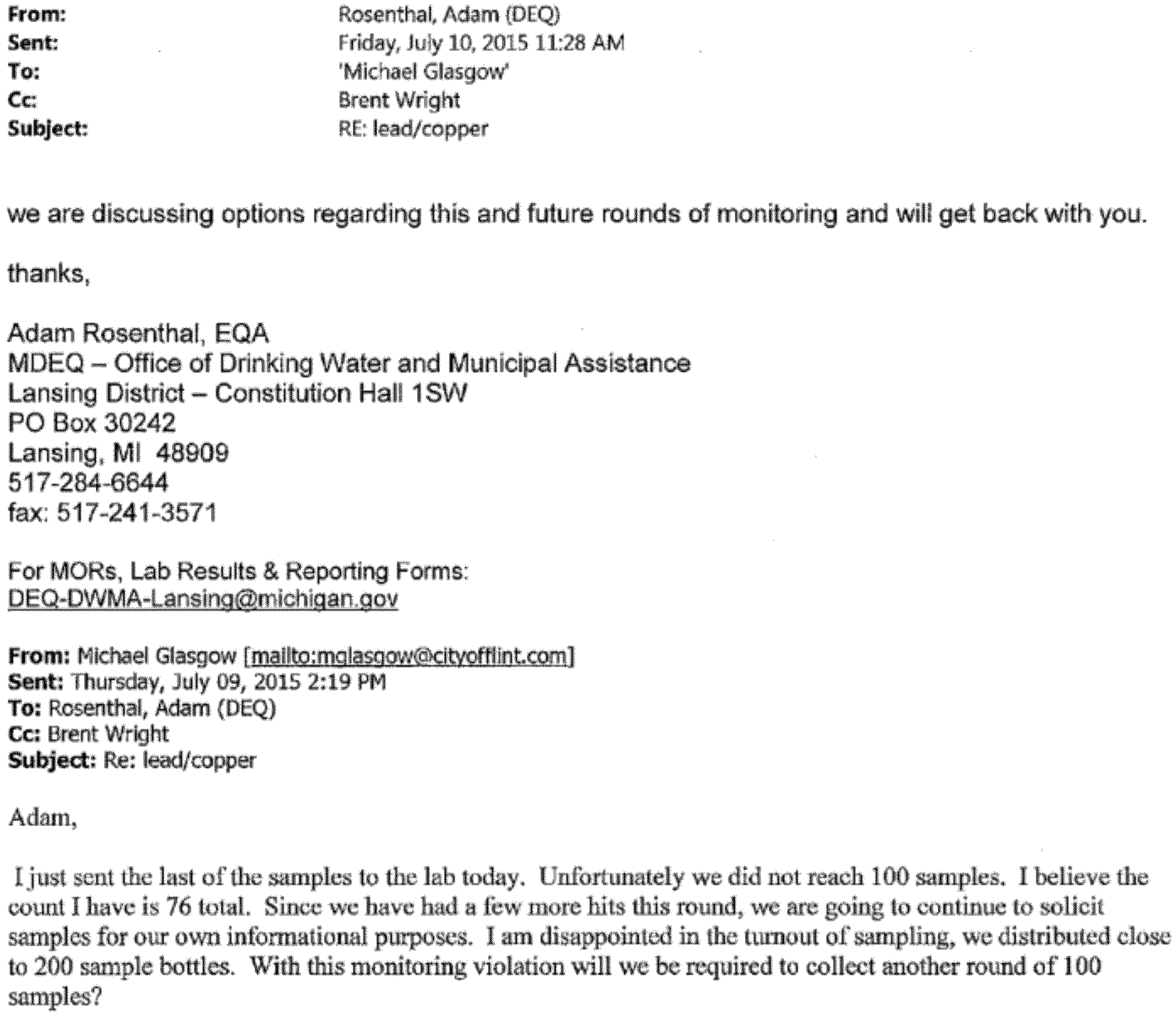
Mike Glasgow says that the 2 high samples were deleted based on the conference call. Only the high samples were scrutinized for meeting the sample pool criteria.

No low samples were investigated. I have the e-mails.

4) The "Draft 7/28/2015" and "revised 8/20/2015" LCR reports, on page 1, check boxes that note Tier 1 sites are not used. MDEQ asks no questions about that. In video Mike admits he has no knowledge of what sites actually have lead pipe or not.

5) Flint did not achieve the minimum number of samples as determined before the sampling round. In his e-mail Mike Glasgow (see below, and see FLINT LCR FOR FOIA…pdf)

acknowledges this will be a technical violation. The draft LCR clearly indicates that the minimum was not achieved. MDEQ responds “we are discussing options” to handle this technical violation. In the August 20th revised final report, even this technical violation magically disappears (see comments box on page 1….).



From: Rosenthal, Adam (DEQ)
Sent: Friday, July 10, 2015 11:28 AM
To: 'Michael Glasgow'
Cc: Brent Wright
Subject: RE: lead/copper

we are discussing options regarding this and future rounds of monitoring and will get back with you.

thanks,

Adam Rosenthal, EQA
MDEQ – Office of Drinking Water and Municipal Assistance
Lansing District – Constitution Hall 1SW
PO Box 30242
Lansing, MI 48909
517-284-6644
fax: 517-241-3571

For MORs, Lab Results & Reporting Forms:
DEQ-DWMA-Lansing@michigan.gov

From: Michael Glasgow [mailto:mglasgow@cityofflint.com]
Sent: Thursday, July 09, 2015 2:19 PM
To: Rosenthal, Adam (DEQ)
Cc: Brent Wright
Subject: Re: lead/copper

Adam,

I just sent the last of the samples to the lab today. Unfortunately we did not reach 100 samples. I believe the count I have is 76 total. Since we have had a few more hits this round, we are going to continue to solicit samples for our own informational purposes. I am disappointed in the turnout of sampling, we distributed close to 200 sample bottles. With this monitoring violation will we be required to collect another round of 100 samples?

KEY POINTS:

1) FLINT HAS LOTS OF LEAD PIPE, NO CORROSION CONTROL

TREATMENT, AND HAS HAD NO LEGITIMATE LCR TESTING FOR AT LEAST A YEAR.

2) AMONGST LOW INCOME INFANTS, BREAST FEEDING RATES ARE LOWER, AND FORMULA USE IS HIGHER. MANY FLINTS RESIDENTS CANNOT AFFORD TO FLUSH DUE TO HIGH WATER RATES. THEY CANNOT AFFORD BOTTLED WATER. THIS IS AN UNPRECEDENTED SITUATION AND EPA NEEDS TO TAKE THIS SERIOUSLY. NOW.

3) WE HAVE ONE CHILD WITH ELEVATED BLOOD LEAD ALREADY…IN FACT, THAT IS THE ONLY REASON WE KNOW ABOUT ANY OF THE ABOVE.

4) MDEQ IS STILL PUBLICLY INSISTING FLINT WATER HAS TESTED SAFE, IS SAFE, AND THAT FLINT HAS **NO VIOLATIONS** of any sort.

I believe that someone at HQ or in R5 should immediately take decisive action on this issue to protect the public.

Marc

To: Darman, Leslie[Darman.Leslie@epa.gov]; Glowacki, Joanna[glowacki.joanna@epa.gov]
Cc: Moriarty, Edward[Moriarty.EdwardJ@epa.gov]
From: Deltoral, Miguel
Sent: Mon 9/21/2015 11:51:01 AM
Subject: Fw: Flint MI: LCR Enforcement Issues
Flint LCR for FOIA 6429-15 (5).pdf
FOIA 15-585 Part 2 55pgs (12).pdf

URGENT...see email below. I watched the video and I couldn't believe it. It seems the water department admitted they did not and do not know if the compliance sites they reported to MDEQ as having lead service lines actually have lead service lines.

Miguel A. Del Toral

Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

From: Marc Edwards <edwardsm@vt.edu>
Sent: Sunday, September 20, 2015 09:29 PM
To: Schock, Michael; Lytle, Darren; kempic.jeffrey@epa.gove; Burneson, Eric; demarco.carol@epa.gov; Murphy, Thomas; Shoven, Heather; Deltoral, Miguel
Subject: Flint MI: LCR Enforcement Issues

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From: Rosenthal, Adam (DEQ)
Sent: Friday, July 10, 2015 11:28 AM
To: 'Michael Glasgow'
Cc: Brent Wright
Subject: RE: lead/copper

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thanks,

Adam Rosenthal, EQA
MDEQ – Office of Drinking Water and Municipal Assistance
Lansing District – Constitution Hall 1SW
PO Box 30242
Lansing, MI 48909
517-284-6644
fax: 517-241-3571

For MORs, Lab Results & Reporting Forms:
DEQ-DWMA-Lansing@michigan.gov

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To: Rosenthal, Adam (DEQ)
Cc: Brent Wright
Subject: Re: lead/copper

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Marc

To: Darman, Leslie[Darman.Leslie@epa.gov]; Glowacki, Joanna[glowacki.joanna@epa.gov]
Cc: Moriarty, Edward[Moriarty.EdwardJ@epa.gov]
From: Deltoral, Miguel
Sent: Mon 9/21/2015 11:51:01 AM
Subject: Fw: Flint MI: LCR Enforcement Issues
Flint LCR for FOIA 6429-15 (5).pdf
FOIA 15-585 Part 2 55pgs (12).pdf

……
,,,,,,
URGENT...see email below. I watched the video and I couldn't believe it. It seems the water department admitted they did not and do not know if the compliance sites they reported to MDEQ as having lead service lines actually have lead service lines.

Miguel A. Del Toral

Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

From: Marc Edwards
Sent: Sunday, September 20, 2015 09:29 PM
To: Schock, Michael; Lytle, Darren; kempic.jeffrey@epa.gove; Burneson, Eric; demarco.carol@epa.gov; Murphy, Thomas; Shoven, Heather; Deltoral, Miguel
Subject: Flint MI: LCR Enforcement Issues
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To: Damato, Nicholas[damato.nicholas@epa.gov]
From: Deltoral, Miguel
Sent: Mon 9/21/2015 11:52:18 AM
Subject: Fw: Flint MI: LCR Enforcement Issues
Flint LCR for FOIA 6429-15 (5).pdf
FOIA 15-585 Part 2 55pgs (12).pdf

Just noticed you weren't copied on this...

Miguel A. Del Toral
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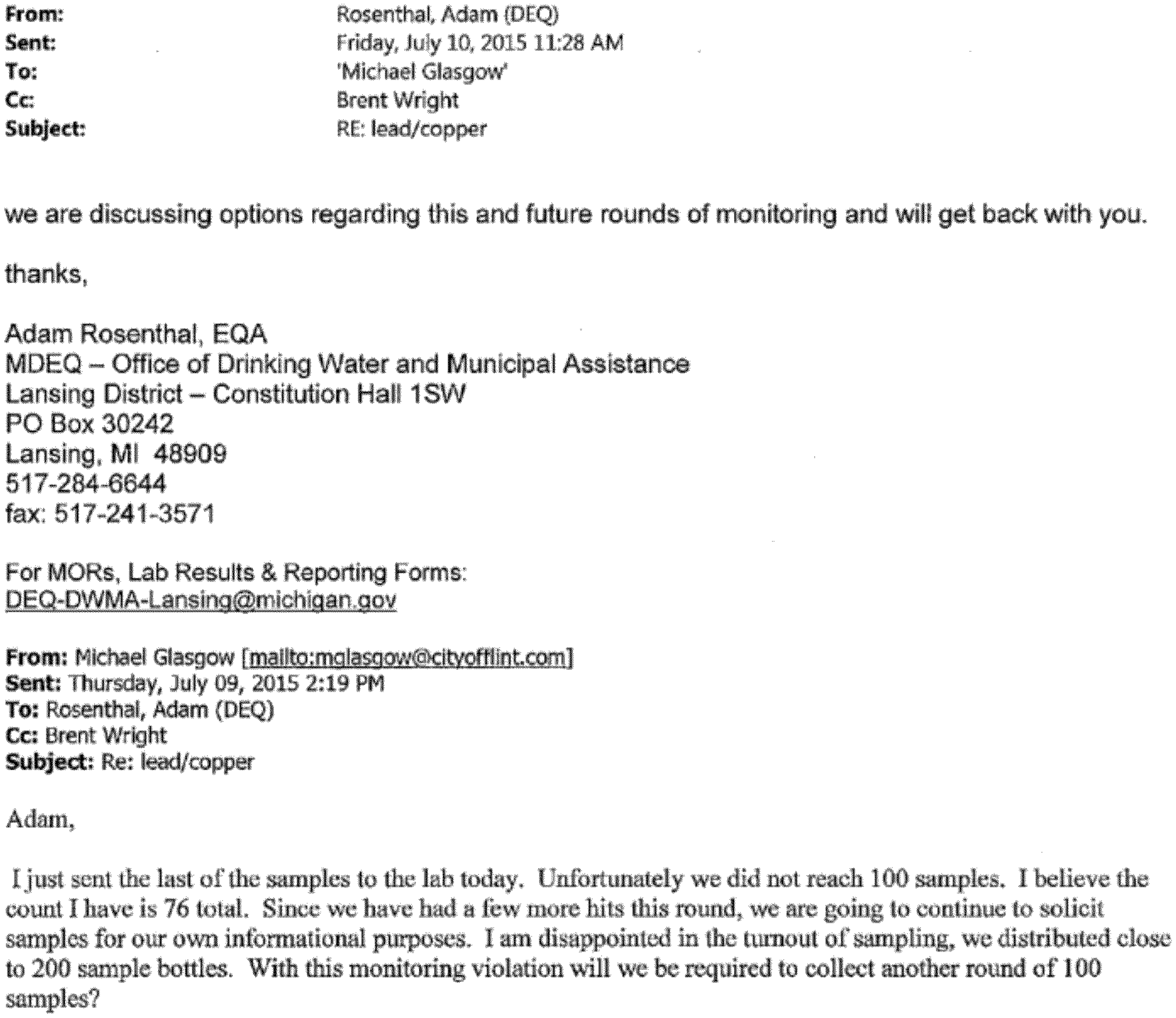

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Cc: Deltoral, Miguel[deltoral.miguel@epa.gov]
From: Shoven, Heather
Sent: Mon 9/21/2015 12:33:19 PM
Subject: FW: Flint MI: LCR Enforcement Issues
Flint LCR for FOIA 6429-15 (5).pdf
FOIA 15-585 Part 2 55pgs (12).pdf

Hi Tom, Nick, and Rita --

I will set up a meeting to discuss this email. Let me know if you would like me to include HQ. Thanks!

Best wishes,

Heather

Heather A. Shoven | Enforcement Team Leader | U.S. Environmental Protection Agency, Region 5

Ground Water and Drinking Water Branch | 77 W. Jackson Blvd (WG-15J) | Chicago, IL 60604 | 312-886-0153

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To: Schock, Michael; Lytle, Darren; kempic.jeffrey@epa.gove; Burneson, Eric; demarco.carol@epa.gov; Murphy, Thomas; Shoven, Heather; Deltoral, Miguel
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To: Hedman, Susan[hedman.susan@epa.gov]; Kaplan, Robert[kaplan.robert@epa.gov]; Hyde, Tinka[hyde.tinka@epa.gov]
Cc: Deamer, Eileen[deamer.eileen@epa.gov]; Cassell, Peter[cassell.peter@epa.gov]; Peterson, John[peterson.john@epa.gov]; Fortin, Denise[Fortin.Denise@epa.gov]
From: Kelley, Jeff
Sent: Mon 9/21/2015 12:45:15 PM
Subject: From the Flint Journal: Lead levels in Flint water spiked after switch to river, state records show

http://www.mlive.com/news/flint/index.ssf/2015/09/flint_water_lead_levels_spiked.html

Lead levels in Flint water spiked after switch to river, state records show

By Ron Fonger | rfonger1@mlive.com
The Flint Journal on September 19, 2015 at 5:50 AM, updated September 19, 2015 at 7:59 AM

FLINT, MI -- City officials insist their own testing shows Flint water is safe and within federal guidelines for lead.

But those same tests also show lead levels have been rising since the city began using the Flint River for water 16 months ago.

The results of Flint's testing for lead since 1992, released by the state Department of Environmental Quality to The Flint Journal-MLive, show 10 percent of homes sampled in the city's most recent testing contained 11 parts per billion or more of lead, with six of 69 samples exceeding the federal lead limit of 15 ppb.

Those are the highest lead levels measured in Flint by the city in more than 20 years, the state data shows.

In contrast, the city's tests of Lake Huron water from Detroit for one 10-year period -- from June 2001 until September 2011 -- resulted in just one of 155 samples registering higher than 15 ppb of lead.

Flint began treating river water in April 2014 after Detroit terminated an expired contract for selling water to the city. The cutoff came after Flint joined Genesee County to form the Karegnondi Water Authority, which is building a new pipeline to Lake Huron, a project that's expected to be completed sometime next year.

City and state officials have pointed to their own testing as evidence that Flint water is safe and under the 15 ppb limit, but have said little about the lead level drifting up.

Marc Edwards, who is supervising separate water testing in Flint by Virginia Tech University, said there's no mistaking the pattern.

"The Flint River -- based on the chemistry -- has an obvious propensity for lead to be released to water," Edwards said. "There should have been red lights flashing (when the city began using the river in April 2014) -- knowing that if you put that water into Flint's system without corrosion control, you're going to see a massive lead release."

That release is what Edwards' testing has shown as 10 percent of homes sampled by students and faculty from Virginia Tech have had lead levels of at least 25 ppb.

Since the testing started, Mayor Dayne Walling announced Flint would speed up development of a plan for reducing corrosiveness of city water and called for $10 million in state funds to begin replacing lead and lead solder in water service lines and plumbing.

Flint Department of Public Works Director Howard Croft would not attribute higher lead levels to the river alone, but said the source of the water is one variable as is the amount of time water is stagnant in pipes.

"Lead is in there. It's always been there," Croft said. "We would like there to be no lead, (but) I'm happy how aggressively we are responding" to what the city has.

Steve Busch, Lansing and Jackson district supervisor in the DEQ's office of drinking water and municipal assistance, said lead testing results vary in many areas and a shift doesn't necessarily show Flint River water is more susceptible to higher lead levels than lake water.

"We see numbers fluctuate with the same treatment and the same water," Busch said. "We have levels go up and down from monitoring round to monitoring round."

Lead is a toxic metal that was used for many year in products found in and around homes, according to the U.S. Environmental Protection Agency. Even at low levels, lead may cause health effects such as behavioral problems and learning disabilities.

Current regulations for lead in water began in 1992 and require a limited amount of testing to measure the degree to which lead leaches into tap water after flowing through lead service lines and lead solder in home plumbing.

If more than 10 percent of tap water samples from water systems exceed 15 ppb, the water system can be required to take steps like making water less corrosive or replacing lead service lines.

Since the EPA announced its lead and copper rule in 1991, Flint has collected 33 samples every six to 36 months but the number of tests increased after the city changed its water source to the river, according to state data.

State records show 100 samples were collected from Flint in the last six months of 2014, showing two sites with readings of more than 15 ppb of lead and 10 percent of homes registering at 6 ppb or more.

From January until June this year, the city collected just 69 samples, a reduction that was allowed because Flint's population had dropped below 100,000, Busch said.

The last time testing by the city showed a higher percentage of water samples above 11 parts per billion was 1992, immediately after new lead and copper rules went into effect.

In that case, the city of Detroit took five years to develop a plan to better control corrosion and lead levels and brought lead levels down from a high of 15 ppb in 10 percent of samples taken in Flint.

---
Jeff Kelley
Director, Office of External Communications
U.S. EPA Region 5
ph: 312-353-1159

To: Henry, Timothy[henry.timothy@epa.gov]; Hyde, Tinka[hyde.tinka@epa.gov]
From: Damato, Nicholas
Sent: Mon 9/21/2015 12:55:51 PM
Subject: FW: Flint MI: LCR Enforcement Issues
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Tim & Tinka,

Miguel forwarded the email below from Marc Edwards. Miguel then called because he wanted Tinka to have a heads up especially on the info in the ACLU video and didn't want her blindsided with the content – it should be reviewed carefully. Tom, Rita, Heather, Jennifer, MIguel & I will be having a call with ORC & OECA this morning on Marc's email.

Nick

From: Deltoral, Miguel
Sent: Monday, September 21, 2015 6:52 AM
To: Damato, Nicholas
Subject: Fw: Flint MI: LCR Enforcement Issues
Importance: High

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Miguel A. Del Toral

Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

From: Marc Edwards <edwardsm@vt.edu>
Sent: Sunday, September 20, 2015 09:29 PM
To: Schock, Michael; Lytle, Darren; kempic.jeffrey@epa.gove; Burneson, Eric; demarco.carol@epa.gov; Murphy, Thomas; Shoven, Heather; Deltoral, Miguel

Subject: Flint MI: LCR Enforcement Issues

Mike, Darren, Jeff, Eric, Carol and Miguel and R5 MI/Enforcement personnel (as listed on the R5 webpage).

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To: 'Michael Glasgow'
Cc: Brent Wright
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517-284-6644
fax: 517-241-3571

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Marc

To: Grevatt, Peter[Grevatt.Peter@epa.gov]; Bergman, Ronald[Bergman.Ronald@epa.gov]; Lopez-Carbo, Maria[Lopez-Carbo.Maria@epa.gov]
From: Poy, Thomas
Sent: Mon 9/21/2015 1:28:19 PM
Subject: FW: Flint MI: LCR Enforcement Issues
Flint LCR for FOIA 6429-15 (5).pdf
FOIA 15-585 Part 2 55pgs (12).pdf

Marc Edwards sent the email below with allegations about Flint and MDEQ regarding LCR compliance. We are meeting this morning on this.

Tom

Tom Poy

Chief, Ground Water and Drinking Water Branch

USEPA - Region 5

(312) 886-5991

From: Shoven, Heather
Sent: Monday, September 21, 2015 7:33 AM
To: Bair, Rita; Damato, Nicholas; Poy, Thomas
Cc: Deltoral, Miguel
Subject: FW: Flint MI: LCR Enforcement Issues

Hi Tom, Nick, and Rita --

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Heather A. Shoven | Enforcement Team Leader | U.S. Environmental Protection Agency, Region 5

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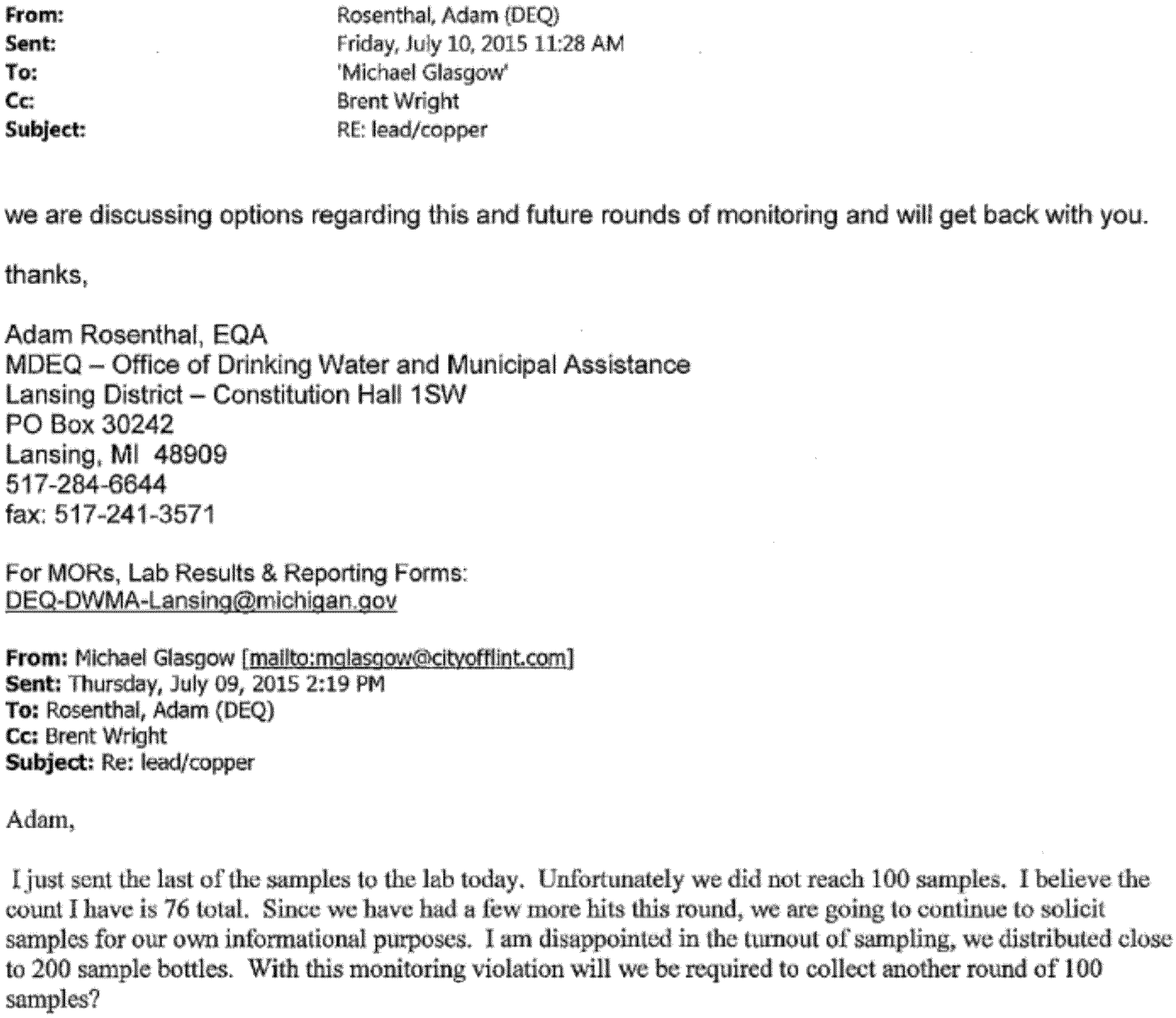

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To: Poy, Thomas[poy.thomas@epa.gov]
From: Bergman, Ronald
Sent: Mon 9/21/2015 1:35:07 PM
Subject: Re: Flint MI: LCR Enforcement Issues

Thanks Tom. We'll be happy to talk when you are ready.

Sent from my iPhone

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Sent: Mon 9/21/2015 2:40:19 PM
Subject: FW: Flint MI: LCR Enforcement Issues
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Tim Henry
Deputy Director, Water Division
U.S. EPA (W-15J)
77 W. Jackson Blvd., Chicago, IL 60604-3590
Phone: 312.886.6107 Fax: 312.692.2578

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Importance: High

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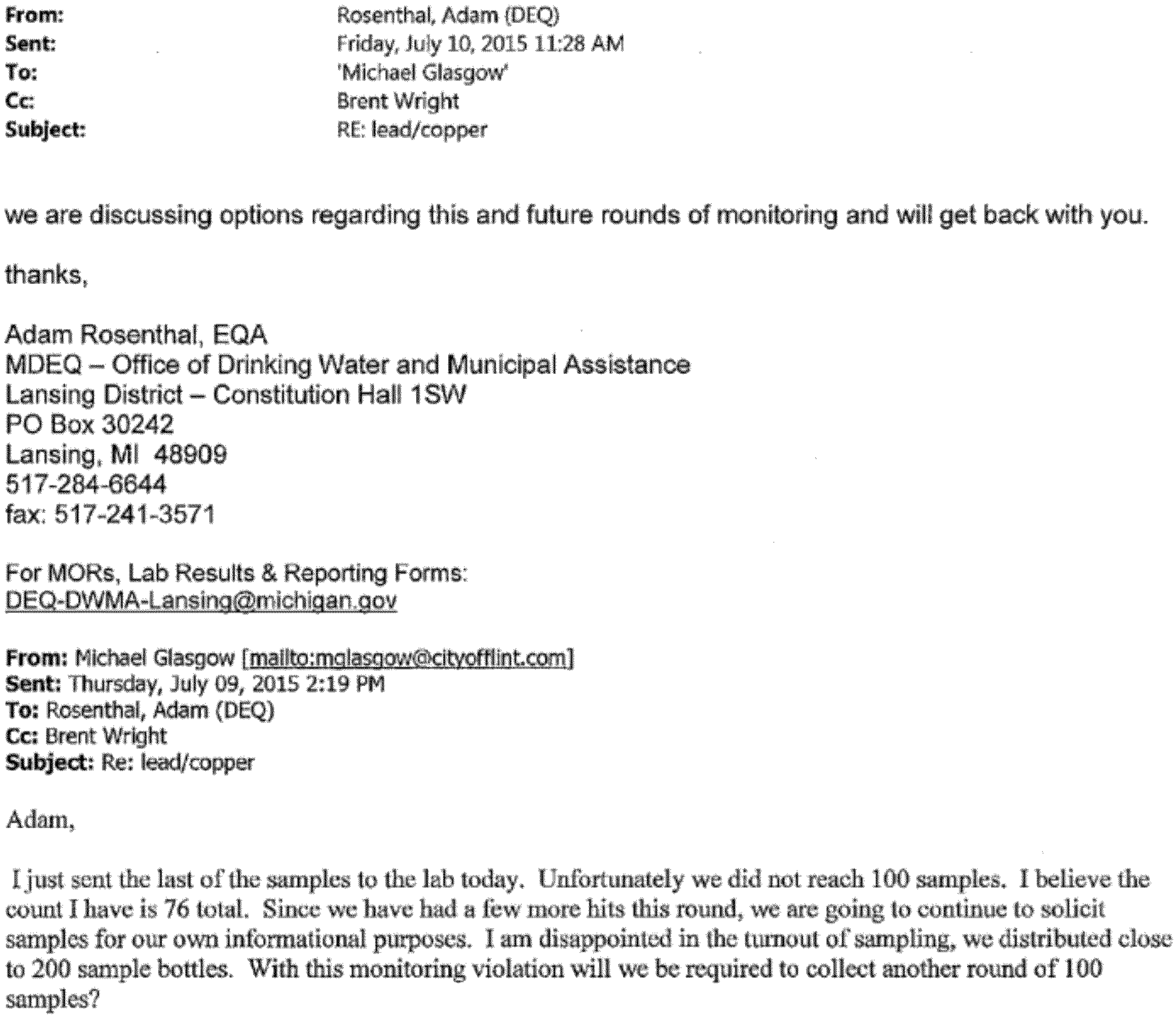

From: Rosenthal, Adam (DEQ)
Sent: Friday, July 10, 2015 11:28 AM
To: 'Michael Glasgow'
Cc: Brent Wright
Subject: RE: lead/copper

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thanks,

Adam Rosenthal, EQA
MDEQ – Office of Drinking Water and Municipal Assistance
Lansing District – Constitution Hall 1SW
PO Box 30242
Lansing, MI 48909
517-284-6644
fax: 517-241-3571

For MORs, Lab Results & Reporting Forms:
DEQ-DWMA-Lansing@michigan.gov

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Sent: Thursday, July 09, 2015 2:19 PM
To: Rosenthal, Adam (DEQ)
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Subject: Re: lead/copper

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I believe that someone at HQ or in R5 should immediately take decisive action on this issue to protect the public.

Marc

To: Bergman, Ronald[Bergman.Ronald@epa.gov]
From: Poy, Thomas
Sent: Mon 9/21/2015 4:32:39 PM
Subject: RE: Flint MI: LCR Enforcement Issues

Ron: I believe Flint's mayor will be at EPA-HQ tomorrow to talk to folks about Flint's lead issues. Don't know who he's meeting with but I can provide you and/or Eric with what I know about Flint.

Tom

Tom Poy

Chief, Ground Water and Drinking Water Branch

USEPA - Region 5

(312) 886-5991

From: Bergman, Ronald
Sent: Monday, September 21, 2015 8:35 AM
To: Poy, Thomas
Subject: Re: Flint MI: LCR Enforcement Issues

Thanks Tom. We'll be happy to talk when you are ready.

Sent from my iPhone

On Sep 21, 2015, at 9:28 AM, Poy, Thomas <poy.thomas@epa.gov> wrote:

Marc Edwards sent the email below with allegations about Flint and MDEQ regarding LCR compliance. We are meeting this morning on this.

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Sent: Monday, September 21, 2015 7:33 AM
To: Bair, Rita; Damato, Nicholas; Poy, Thomas
Cc: Deltoral, Miguel
Subject: FW: Flint MI: LCR Enforcement Issues

Hi Tom, Nick, and Rita --

I will set up a meeting to discuss this email. Let me know if you would like me to include HQ. Thanks!

Best wishes,

Heather

Heather A. Shoven | Enforcement Team Leader | U.S. Environmental Protection Agency, Region 5

Ground Water and Drinking Water Branch | 77 W. Jackson Blvd (WG-15J) | Chicago, IL 60604 | 312-886-0153

From: Marc Edwards [mailto:edwardsm@vt.edu]
Sent: Sunday, September 20, 2015 9:30 PM

To: Schock, Michael; Lytle, Darren; kempic.jeffrey@epa.gove; Burneson, Eric; demarco.carol@epa.gov; Murphy, Thomas; Shoven, Heather; Deltoral, Miguel
Subject: Flint MI: LCR Enforcement Issues

Mike, Darren, Jeff, Eric, Carol and Miguel and R5 MI/Enforcement personnel (as listed on the R5 webpage).

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<FOIA 15-585 Part 2 55pgs (12).pdf>

To: Poy, Thomas[poy.thomas@epa.gov]
From: Bergman, Ronald
Sent: Mon 9/21/2015 4:55:03 PM
Subject: Re: Flint MI: LCR Enforcement Issues

Thanks Tom. He is meeting with Peter. A few of us will also be attending. Any information you have will be helpful. It's unclear what he wants from us - money, technical assistance, enforcement flexibility, or something else.

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Cc: Glowacki, Joanna[glowacki.joanna@epa.gov]; Porter, Andrea[porter.andrea@epa.gov]; Shoven, Heather[shoven.heather@epa.gov]
From: Deltoral, Miguel
Sent: Tue 9/22/2015 12:06:37 PM
Subject: Fw: Pediatrician's blood lead study and City of Flint response. FYI

This is no surprise. lead lines + no treatment = high lead in water = lead poisoned children.

You have a city that has lead lines and no treatment that is collecting pre-flushing which we know can easily miss very high lead levels. We do nothing to stop that.

We have an independent group taking samples that show much higher lead levels and what do people do? They question the VT data, rather than saying anything about the City's data from sampling that we know can miss the lead and on top of that we just found out that the city may have lied on the reporting forms to DEQ in stating that all of the sites they used had lead service lines when they apparently do not have any information that they could possibly have used to make those determinations. To mean that means you have to throw out both rounds of data unless they can provide the supporting documentation. And since they admitted they do not have it, what do we do? Nothing again?

I can't recall what R5 decided on the MI disinvestments, but I very seriously hope that we did not allow MDEQ NOT to issue violations for failure to submit the LCR reporting forms. It is only by way of having these forms from Flint that we became aware that what they reported for each of the monitoring sites is not true. If I am a lawyer, and someone puts down on a form that every site is a lead line site, and they cannot produce a single piece of information that they used to make the determination that they are lead line sites...isn't that false reporting at a minimum? And when all of this results in a town full of lead-poisoned children, doesn't that mean anything to anyone?

Even worse, absent anything from EPA, MDEQ and the City, other than 'they are in full compliance' other folks have to alert the public to the risk. We now have data from yet another independent group that appears to show that the children are in fact, being poisoned.

At every stage of this process, it seems that we spend more time trying to maintain State/local relationships than we do trying to protect the children. I said this from the very beginning and I will say this again...you don't have to drop a bowling ball off of every building in every city to prove that gravity (and science) will work the same way everywhere. It's basic chemistry.

There is nothing that can be done in the immediate future with respect to treatment that can prevent more children from being further damaged. Someone needs to require that the residents of Flint be provided with water filters until they can fix the treatment.

Sorry for the rant, but I am very upset about this because I told people this was going to be the outcome. I watched this movie before in Washington, DC. and we are heading down the exact same path of denial and delay and meanwhile, the children are being irreparably damaged.

Miguel A. Del Toral
Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

From: Marc Edwards <edwardsm@vt.edu>
Sent: Monday, September 21, 2015 04:49 PM
To: Schock, Michael; Lytle, Darren; Burneson, Eric; demarco.carol@epa.gov; Murphy, Thomas; Shoven, Heather; Deltoral, Miguel
Subject: Pediatrician's blood lead study and City of Flint response. FYI

Pediatrician's from Hurley medical center gave a medical briefing to the mayor, Croft and the City administrator about their blood lead data today.

To summarize what they found, they compared incidence of EBL (> 5 ug/dL) in the time period before and after the switch using their in-house data. Basically repeating my DC Lead study from 2009 methods.

For infants < 15 months, here is what they found.

1) Non-flint residents no change (0.5% pre vs. 0.5% post).

2) The two zip codes where we found the highest lead in water, EBL rose from 1.5% pre-switch to 4.4% after the switch.

3) For the rest of Flint (lower risk zip codes) the EBL incidence rose from 0.6 to 1.1%.

4) For all children less than 5 years old, EBL rose from 2.1% switch to 4.0% post-switch ($p < 0.05$)

5) For all children less than 5 years old, EBL rose from 2.5% pre-switch to 6.3% post-switch in the zip codes with highest water lead risk ($p < 0.05$).

The person said I could tell you the following. What follows are her exact words, not mine. I did put the red underline emphasis in there.

"The meeting included the mayor, Croft, city administrator, sen ananich and doctors. The city folks had a meeting this am with DEQ and EPA who gave them a blessing that they were in compliance with everything - they said all the water experts this am said their is no "corrosivity" issue.

We pushed for a health advisory - even something saying "we are in compliance, but we don't know everything, we want to be safe, follow these precautions. "That would enable mobilization of additional resources. They seemed receptive to that. ?? I'm not sure what will happen - mayor is going to dc this week to see EPA? Croft said he has been sharing information with you. they are not blaming the water source, they are blaming sitting water and old pipes….they said population has decreased and more water is sitting."

The pediatrician's information is below. She said you could call her to verbally confirm what was said at the meeting.

Her cell phone is: [redacted] Personal Phone / Ex. 6

Mona Hanna-Attisha MD MPH

Director, Pediatric Residency Program

Hurley Children's Hospital at Hurley Medical Center

Assistant Professor, Department of Pediatrics and Human Development

Michigan State University College of Human Medicine

Office: 810-262-7257

mhanna1@hurleymc.com

To: Kempic, Jeffrey[Kempic.Jeffrey@epa.gov]; Moriarty, Edward[Moriarty.EdwardJ@epa.gov]; Darman, Leslie[Darman.Leslie@epa.gov]; King, Carol[King.Carol@epa.gov]
From: Deltoral, Miguel
Sent: Tue 9/22/2015 12:47:32 PM
Subject: More Flint Articles

http://www.mlive.com/news/flint/index.ssf/2015/09/kildee_says_independent_tests.html

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Read more...

http://michiganradio.org/post/critics-raise-questions-about-validity-past-tests-flints-drinking-water#stream/0

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To: Henry, Timothy[henry.timothy@epa.gov]; Grevatt, Peter[Grevatt.Peter@epa.gov]
Cc: Poy, Thomas[poy.thomas@epa.gov]
From: Hyde, Tinka
Sent: Tue 9/22/2015 1:40:09 PM
Subject: RE: Pediatrician's blood lead study and City of Flint response. FYI

Hi All – During our meeting yesterday with MDEQ, the Flint Mayor, State Senator &/or Reps and Rep Killdee and staffers from Sen. Peters and Stabenow's offices we discussed the issues at Flint.

Regarding compliance – the discussion focused on the fact that the 2-6month rounds of sampling did not exceed the action level of 15 ug/l. We also discussed the sampling protocols used by MDEQ & Flint which are compliant with the current LCR.

Regarding corrosivity – the discussion focused on the role of orthophosphate as a pipe coating – the statement below is correct in that we did make it clear that it isn't the source water it is the plumbing and the need for CCT. There was discussion about why they didn't do CCT when the switch – answer – conducted the sampling that then indicated the need to do CCT (but still not exceeding the AL of 15). MDEQ also stated that they will require CCT to continue when the switch to the new water source in a few months. (NOTE: a pipeline from Lk Huron is under construction and expected to be completed in the summer of 2016). There was no statement that indicated that corrosion control was not needed, so I'm not sure where folks got the impression that there was "no corrosion issue."

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To: Grevatt, Peter
Cc: Hyde, Tinka; Poy, Thomas
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312-296-0690 (cell)

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Office: 810-262-7257

mhanna1@hurleymc.com

To: Hyde, Tinka[hyde.tinka@epa.gov]; Henry, Timothy[henry.timothy@epa.gov]
Cc: Poy, Thomas[poy.thomas@epa.gov]; Burneson, Eric[Burneson.Eric@epa.gov]; Greene, Ashley[Greene.Ashley@epa.gov]
From: Grevatt, Peter
Sent: Tue 9/22/2015 5:18:03 PM
Subject: RE: Pediatrician's blood lead study and City of Flint response. FYI

Thanks for the helpful update Tinka and Tim!

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Sent: Tuesday, September 22, 2015 9:40 AM
To: Henry, Timothy; Grevatt, Peter
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To: Bair, Rita[bair.rita@epa.gov]; Damato, Nicholas[damato.nicholas@epa.gov]
From: Poy, Thomas
Sent: Tue 9/22/2015 5:31:33 PM
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Tom Poy

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(312) 886-5991

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To: Bergman, Ronald[Bergman.Ronald@epa.gov]; Lopez-Carbo, Maria[Lopez-Carbo.Maria@epa.gov]
From: Poy, Thomas
Sent: Tue 9/22/2015 5:43:11 PM
Subject: FW: Pediatrician's blood lead study and City of Flint response. FYI

Ron/Maria: FYI…Tinka's summary on yesterday's meeting with Rep Kildee, MDEQ and Flint's mayor.

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From: Poy, Thomas
Sent: Tue 9/22/2015 8:15:13 PM
Subject: RE: Pediatrician's blood lead study and City of Flint response. FYI

Mike: I don't know why someone would make the statement that there is no corrosion issue in Flint. Our Division Director was at the meeting and no one said that there wasn't a corrosion issue. Why are they planning to implement corrosion control if there isn't an issue???

Tom Poy

Chief, Ground Water and Drinking Water Branch

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(312) 886-5991

From: Shoven, Heather
Sent: Tuesday, September 22, 2015 2:41 PM
To: Damato, Nicholas; Bair, Rita; Poy, Thomas
Subject: FYI: Pediatrician's blood lead study and City of Flint response. FYI

From: Schock, Michael
Sent: Tuesday, September 22, 2015 1:10 PM
To: Marc Edwards; Lytle, Darren; Burneson, Eric; demarco.carol@epa.gov; Murphy, Thomas; Shoven, Heather; Deltoral, Miguel
Subject: RE: Pediatrician's blood lead study and City of Flint response. FYI

I don't know who in EPA is saying that, we know a lot about lead corrosion/solubility and there is no way a mid-7's pH water will NOT have a soluble lead problem (without adding a lot of orthophosphate and controlling particulate release), unless they have a PbO2 scale. And they don't have that, because they can't even keep a chlorine residual in parts of the system, and the phosphate they got from Detroit water may (probably) inhibited it before. The sampling results were not taken in a way that either reflects human exposure (which the LCR doesn't) or sampled in a way to characterize what contribution the different plumbing components make to the overall lead risk.

From: Marc Edwards [mailto:edwardsm@vt.edu]
Sent: Tuesday, September 22, 2015 12:40 PM
To: Schock, Michael; Lytle, Darren; Burneson, Eric; demarco.carol@epa.gov; Murphy, Thomas; Shoven, Heather; Deltoral, Miguel
Subject: RE: Pediatrician's blood lead study and City of Flint response. FYI

MDEQ will go to their grave insisting Flint has met all Federal LCR standards….higher numbers of EBL kids be damned.

They are also telling people that EPA has said there is no absolutely no corrosion problem in Flint water.

Marc

To: Poy, Thomas[poy.thomas@epa.gov]
Cc: Shoven, Heather[shoven.heather@epa.gov]; Damato, Nicholas[damato.nicholas@epa.gov]; Bair, Rita[bair.rita@epa.gov]
From: Schock, Michael
Sent: Tue 9/22/2015 8:46:54 PM
Subject: RE: Pediatrician's blood lead study and City of Flint response. FYI

I know there is a lot of misinformation about the LCR sampling—what the sampling is and isn't. I suspect the health department or medical center people are really confused about the mixed messaging, and of course, the media really complicates things.

Something I would really like, and I don't know if it can be worked out, would be if we (you folks, Darren and I) could have some conversations directly with the health department people and try to give them clear scientific answers about corrosion control, plumbing materials, POU options, lead pipes, sampling (what each kind of sampling means versus another), and help them with the message they need to get to consumers. I'm also very concerned that we find a way to be able to actually inspect and characterize the plumbing layout in a number of homes from which new, controlled water samples can be taken.

People genuinely are confused about sampling, and they don't have a feel for why one set of data differs from another, unless someone can explain it to them. But once that happens, usually they finally get it. I honestly start every talk I give at conferences on sampling with the statement that I can get you any result you want from sampling—missing a problem entirely to finding a problem and making it look worse than even it is, purely by the way I can set up a fairly scientifically defensible sampling scheme. It's all about specifically defining the question you want and need answered. Many of the statements that have come out in the media are true in one context, but misleading in another. That's feeding the confusion. People don't have the objective knowledge to sort out what's relevant and what isn't. The LCR has never been applicable to characterize the risk of any individual home or homes in a water system, but I even know senior folks in CDC who literally think that if a system meets the 90th percentile action level, nobody needs to worry. Even if some guy with a jackhammer is digging up the street right by their LSL, or if a house has been vacant for 4 months and a family with little kids is about to move in…

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99.9% of normal people don't have any idea about the lead pipes or where it is in the plumbing material, and why it's a risk as long as lead pipes there. But that said, the performance of the water treatment needs the right kind of sampling to characterize its effectiveness, and the residents need to be able to evaluate their own risk and what they can do (if anything) to reduce it. Unfortunately, the regulatory sampling framework is not really set up to do that, as we all have become painfully aware. And if the lead pipes are almost all on the utility side of the curb stop, then they are even more out of the control of the resident, and the residents are even less capable of controlling their own exposure.

--Mike

From: Poy, Thomas
Sent: Tuesday, September 22, 2015 4:15 PM
To: Schock, Michael
Cc: Shoven, Heather; Damato, Nicholas; Bair, Rita
Subject: RE: Pediatrician's blood lead study and City of Flint response. FYI

Mike: I don't know why someone would make the statement that there is no corrosion issue in Flint. Our Division Director was at the meeting and no one said that there wasn't a corrosion issue. Why are they planning to implement corrosion control if there isn't an issue???

Tom Poy

Chief, Ground Water and Drinking Water Branch

USEPA - Region 5

(312) 886-5991

From: Shoven, Heather
Sent: Tuesday, September 22, 2015 2:41 PM
To: Damato, Nicholas; Bair, Rita; Poy, Thomas
Subject: FYI: Pediatrician's blood lead study and City of Flint response. FYI

From: Schock, Michael
Sent: Tuesday, September 22, 2015 1:10 PM
To: Marc Edwards; Lytle, Darren; Burneson, Eric; demarco.carol@epa.gov; Murphy, Thomas; Shoven, Heather; Deltoral, Miguel
Subject: RE: Pediatrician's blood lead study and City of Flint response. FYI

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From: Marc Edwards [mailto:edwardsm@vt.edu]
Sent: Tuesday, September 22, 2015 12:40 PM
To: Schock, Michael; Lytle, Darren; Burneson, Eric; demarco.carol@epa.gov; Murphy, Thomas; Shoven, Heather; Deltoral, Miguel
Subject: RE: Pediatrician's blood lead study and City of Flint response. FYI

MDEQ will go to their grave insisting Flint has met all Federal LCR standards….higher numbers of EBL kids be damned.

They are also telling people that EPA has said there is no absolutely no corrosion problem in Flint water.

Marc

To: Deltoral, Miguel[deltoral.miguel@epa.gov]
From: Shoven, Heather
Sent: Wed 9/23/2015 12:48:54 PM
Subject: FYI: Pediatrician's blood lead study and City of Flint response. FYI

FYI based on your email to Tom Poy this morning. I would like to provide Marc with an accurate EPA response.

From: Schock, Michael
Sent: Tuesday, September 22, 2015 3:47 PM
To: Poy, Thomas
Cc: Shoven, Heather; Damato, Nicholas; Bair, Rita
Subject: RE: Pediatrician's blood lead study and City of Flint response. FYI

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Tom Poy

Chief, Ground Water and Drinking Water Branch

USEPA - Region 5

(312) 886-5991

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From: Marc Edwards [mailto:edwardsm@vt.edu]
Sent: Tuesday, September 22, 2015 12:40 PM
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Subject: RE: Pediatrician's blood lead study and City of Flint response. FYI

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Marc

To: Deltoral, Miguel[deltoral.miguel@epa.gov]
From: Poy, Thomas
Sent: Wed 9/23/2015 1:04:48 PM
Subject: RE: Pediatrician's blood lead study and City of Flint response. FYI

Miguel: Tinka doesn't know how someone could come up with that conclusion. She said that no one at the meeting said there wasn't a corrosion problem in Flint. She said it was explained to Congressman Kildee that lead is not in the source water but coming from pipes and fixtures. I don't know how that could be translated into no corrosion issue. Plus, if there weren't a corrosion issue, how would they explain the letter from MDEQ saying their corrosion control is not optimized and why would Flint be planning implementation of phosphate treatment?

Tom

Tom Poy

Chief, Ground Water and Drinking Water Branch

USEPA - Region 5

(312) 886-5991

From: Deltoral, Miguel
Sent: Wednesday, September 23, 2015 7:37 AM
To: Poy, Thomas; Bair, Rita; Damato, Nicholas
Cc: Porter, Andrea; Glowacki, Joanna; Shoven, Heather
Subject: Fw: Pediatrician's blood lead study and City of Flint response. FYI
Importance: High

Tom - Read Marc's email below. I suggest that someone check with Tinka before this gets out of hand to see what she said, since things often get jumbled in translation or mischaracterized. Obviously, we would not be able to defend a statement that there is not a corrosion problem in Flint.

Miguel A. Del Toral

Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

From: Schock, Michael
Sent: Tuesday, September 22, 2015 01:09 PM
To: Marc Edwards; Lytle, Darren; Burneson, Eric; demarco.carol@epa.gov; Murphy, Thomas; Shoven, Heather; Deltoral, Miguel
Subject: RE: Pediatrician's blood lead study and City of Flint response. FYI

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Marc

To: Glowacki, Joanna[glowacki.joanna@epa.gov]
From: Deltoral, Miguel
Sent: Wed 9/23/2015 1:52:30 PM
Subject: Fw: Pediatrician's blood lead study and City of Flint response. FYI

fyi

Miguel A. Del Toral
Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

From: Poy, Thomas
Sent: Wednesday, September 23, 2015 08:04 AM
To: Deltoral, Miguel
Subject: RE: Pediatrician's blood lead study and City of Flint response. FYI

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Tom Poy

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USEPA - Region 5

(312) 886-5991

From: Deltoral, Miguel

Sent: Wednesday, September 23, 2015 7:37 AM
To: Poy, Thomas; Bair, Rita; Damato, Nicholas
Cc: Porter, Andrea; Glowacki, Joanna; Shoven, Heather
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Marc

To: Hyde, Tinka[hyde.tinka@epa.gov]; Henry, Timothy[henry.timothy@epa.gov]
Cc: Bair, Rita[bair.rita@epa.gov]; Damato, Nicholas[damato.nicholas@epa.gov]
From: Poy, Thomas
Sent: Wed 9/23/2015 8:14:57 PM
Subject: FW: Technical Advisory Meeting

Tinka: Flint has scheduled the next meeting of the Technical Advisory Committee – Oct 7th. Unfortunately, Mike Schock can't make it. Don't know about Darren. Flint is also inviting Marc Edwards to be part of the group – a good sign.

Tom

Tom Poy

Chief, Ground Water and Drinking Water Branch

USEPA - Region 5

(312) 886-5991

From: Schock, Michael
Sent: Wednesday, September 23, 2015 3:08 PM
To: Deltoral, Miguel; Poy, Thomas
Subject: FW: Technical Advisory Meeting

Just as I feared, the set the date and time with zero consultation. I cannot possibly make this date. I am out of the office from Oct. 1 – 13. I know they didn't ask Darren.

From: Howard Croft [mailto:hcroft@cityofflint.com]
Sent: Wednesday, September 23, 2015 3:52 PM
To: Brent Wright; Dayne Walling; donna. cole; edwardsm; Gerald (Jed) Natzke; Howard Croft; James Henry; Jason Lorenz; jmikewright; JoAnne Herman; John O'Brien; Kirk Smith; larry.koehler@mcc.edu; Laura Sullivan; lytle.darrin@epa.gov; Michael Glasgow; Wright, Michael; Mike Lane; Mike Prysby (DEQ); Natasha Henderson; Norb Birchmeier; Pete Levine; Robert Bincsik; rosejo@msu.edu; Russell Hudson; Samir Matta; Schock, Michael; Sean Kammer; Warren Green; Busch, Stephen (DEQ)
Subject: Technical Advisory Meeting

Technical Advisory Team,

I am writing to inform everyone that we have scheduled the next Technical Advisory Committee meeting to be Wednesday October 7th, 2015 from 2:00 – 4:30 pm. We are extending invitations to Marc Edwards of Virginia Tech along with two lead experts from the EPA (Darren Lytle & Michael Schock) to become a part of the technical team and we are hopeful that they will all be present at the upcoming meeting.

At the meeting we will discuss an overview of the City water system, compliance with the Safe Drinking Water Act, lead concerns, corrosion control, water testing, public education, capital improvement plans, the KWA pipeline, and next steps.

I will forward a specific location and agenda in the near future but we are firmly committing to the time and date. As with previous meetings we look forward to this group having positive dialogue that will benefit the community.

Thank you,

--

Howard Croft

Public Works Director

City of Flint

1101 S. Saginaw Street

Flint, MI 48502

PH# 810.766.7135 Ext.2043

hcroft@cityofflint.com

To: Poy, Thomas[poy.thomas@epa.gov]
Cc: Henry, Timothy[henry.timothy@epa.gov]; Bair, Rita[bair.rita@epa.gov]; Damato, Nicholas[damato.nicholas@epa.gov]
From: Hyde, Tinka
Sent: Thur 9/24/2015 3:02:26 PM
Subject: Re: Technical Advisory Meeting

Great. Thanks for the update.

Sent from my iPhone

On Sep 23, 2015, at 4:15 PM, Poy, Thomas <poy.thomas@epa.gov> wrote:

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To: Suero, Maryann[suero.maryann@epa.gov]; Poy, Thomas[poy.thomas@epa.gov]; Bair, Rita[bair.rita@epa.gov]; Damato, Nicholas[damato.nicholas@epa.gov]; Shoven, Heather[shoven.heather@epa.gov]; Porter, Andrea[porter.andrea@epa.gov]; Crooks, Jennifer[crooks.jennifer@epa.gov]
Cc: Darman, Leslie[Darman.Leslie@epa.gov]; King, Carol[King.Carol@epa.gov]; Kempic, Jeffrey[Kempic.Jeffrey@epa.gov]; Moriarty, Edward[Moriarty.EdwardJ@epa.gov]; Schock, Michael[Schock.Michael@epa.gov]; Lytle, Darren[Lytle.Darren@epa.gov]; Glowacki, Joanna[glowacki.joanna@epa.gov]
From: Deltoral, Miguel
Sent: Thur 9/24/2015 6:09:56 PM
Subject: Website link for news conference on EBLLs in Flint

http://www.mlive.com/news/flint/index.ssf/2015/09/doctors_health_officials_to_sp.html#incart_river

Watch live
in Flint wa
Representatives
Center and Mott

Read more...

Miguel A. Del Toral
Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

To: Crooks, Jennifer[crooks.jennifer@epa.gov]
From: Porter, Andrea
Sent: Thur 9/24/2015 6:39:53 PM
Subject: FW: Pediatrician's blood lead study and City of Flint response. FYI

FYI

From: Deltoral, Miguel
Sent: Tuesday, September 22, 2015 7:07 AM
To: Poy, Thomas; Bair, Rita; Damato, Nicholas
Cc: Glowacki, Joanna; Porter, Andrea; Shoven, Heather
Subject: Fw: Pediatrician's blood lead study and City of Flint response. FYI

This is no surprise. lead lines + no treatment = high lead in water = lead poisoned children.

You have a city that has lead lines and no treatment that is collecting pre-flushing which we know can easily miss very high lead levels. We do nothing to stop that.

We have an independent group taking samples that show much higher lead levels and what do people do? They question the VT data, rather than saying anything about the City's data from sampling that we know can miss the lead and on top of that we just found out that the city may have lied on the reporting forms to DEQ in stating that all of the sites they used had lead service lines when they apparently do not have any information that they could possibly have used to make those determinations. To mean that means you have to throw out both rounds of data unless they can provide the supporting documentation. And since they admitted they do not have it, what do we do? Nothing again?

I can't recall what R5 decided on the MI disinvestments, but I very seriously hope that we did not allow MDEQ NOT to issue violations for failure to submit the LCR reporting forms. It is only by way of having these forms from Flint that we became aware that what they reported for each of the monitoring sites is not true. If I am a lawyer, and someone puts down on a form that every site is a lead line site, and they cannot produce a single piece of information that they used to make the determination that they are lead line sites...isn't that false reporting at a minimum? And when all of this results in a town full of lead-poisoned children, doesn't that mean anything to anyone?

Even worse, absent anything from EPA, MDEQ and the City, other than 'they are in full compliance' other folks have to alert the public to the risk. We now have data from yet another independent group that appears to show that the children are in fact, being poisoned.

At every stage of this process, it seems that we spend more time trying to maintain State/local relationships than we do trying to protect the children. I said this from the very beginning and I will say this again...you don't have to drop a bowling ball off of every building in every city to prove that gravity (and science) will work the same way everywhere. It's basic chemistry.

There is nothing that can be done in the immediate future with respect to treatment that can prevent more children from being further damaged. Someone needs to require that the residents of Flint be provided with water filters until they can fix the treatment.

Sorry for the rant, but I am very upset about this because I told people this was going to be the outcome. I watched this movie before in Washington, DC. and we are heading down the exact same path of denial and delay and meanwhile, the children are being irreparably damaged.

Miguel A. Del Toral

Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

From: Marc Edwards <edwardsm@vt.edu>
Sent: Monday, September 21, 2015 04:49 PM
To: Schock, Michael; Lytle, Darren; Burneson, Eric; demarco.carol@epa.gov; Murphy, Thomas; Shoven, Heather; Deltoral, Miguel
Subject: Pediatrician's blood lead study and City of Flint response. FYI

Pediatrician's from Hurley medical center gave a medical briefing to the mayor, Croft and the City administrator about their blood lead data today.

To summarize what they found, they compared incidence of EBL (> 5 ug/dL) in the time period before and after the switch using their in-house data. Basically repeating my DC Lead study from 2009 methods.

For infants < 15 months, here is what they found.

1) Non-flint residents no change (0.5% pre vs. 0.5% post).

2) The two zip codes where we found the highest lead in water, EBL rose from 1.5% pre-switch to 4.4% after the switch.

3) For the rest of Flint (lower risk zip codes) the EBL incidence rose from 0.6 to 1.1%.

4) For all children less than 5 years old, EBL rose from 2.1% switch to 4.0% post-switch (p < 0.05)

5) For all children less than 5 years old, EBL rose from 2.5% pre-switch to 6.3% post-switch in the zip codes with highest water lead risk (p < 0.05).

The person said I could tell you the following. What follows are her exact words, not mine. I did put the red underline emphasis in there.

"The meeting included the mayor, Croft, city administrator, sen ananich and doctors. The city folks had a meeting this am with DEQ and EPA who gave them a blessing that they were in compliance with everything - they said all the water experts this am said their is no "corrosivity" issue.

We pushed for a health advisory - even something saying "we are in compliance, but we don't know everything, we want to be safe, follow these precautions. "That would enable mobilization of additional resources. They seemed receptive to that. ?? I'm not sure what will happen - mayor is going to dc this week to see EPA? Croft said he has been sharing information with you. they are not blaming the water source, they are blaming sitting water and old pipes….they said population has decreased and more water is sitting."

The pediatrician's information is below. She said you could call her to verbally confirm what was said at the meeting.

Her cell phone is: **Personal Phone / Ex. 6**

Mona Hanna-Attisha MD MPH

Director, Pediatric Residency Program

Hurley Children's Hospital at Hurley Medical Center

Assistant Professor, Department of Pediatrics and Human Development

Michigan State University College of Human Medicine

Office: 810-262-7257

mhanna1@hurleymc.com

To: Henry, Timothy[henry.timothy@epa.gov]; Hyde, Tinka[hyde.tinka@epa.gov]
Cc: Bair, Rita[bair.rita@epa.gov]; Damato, Nicholas[damato.nicholas@epa.gov]; Deltoral, Miguel[deltoral.miguel@epa.gov]; Crooks, Jennifer[crooks.jennifer@epa.gov]; Shoven, Heather[shoven.heather@epa.gov]
From: Poy, Thomas
Sent: Thur 9/24/2015 6:43:08 PM
Subject: FW: Technical Advisory Meeting

FYI...

Tom Poy

Chief, Ground Water and Drinking Water Branch

USEPA - Region 5

(312) 886-5991

From: Schock, Michael
Sent: Thursday, September 24, 2015 12:17 PM
To: Howard Croft; Brent Wright; Dayne Walling; donna. cole; edwardsm; Gerald (Jed) Natzke; James Henry; Jason Lorenz; jmikewright; JoAnne Herman; John O'Brien; Kirk Smith; larry.koehler@mcc.edu; Laura Sullivan; lytle.darrin@epa.gov; Michael Glasgow; Wright, Michael; Mike Lane; Mike Prysby (DEQ); Natasha Henderson; Norb Birchmeier; Pete Levine; Robert Bincsik; rosejo@msu.edu; Russell Hudson; Samir Matta; Sean Kammer; Warren Green; Busch, Stephen (DEQ)
Cc: Lytle, Darren
Subject: RE: Technical Advisory Meeting

Howard;

Thank you for the meeting invitation. However, I am not available to attend the meeting that week. I wish there had been some consultation with Dr. Lytle and myself about our other commitments and our travel availability, before scheduling the meeting. I still will be available to participate overall the advisory process.

I noticed also that the email address for Dr. Lytle appears to have a typographical error in it, but you may have spoken to him on the phone about the meeting. The correct email address is: lytle.darren@epa.gov.

Thank you, again, for the opportunity to participate.

Regards,

Mike

Michael R. Schock

U.S. Environmental Protection Agency

ORD, NRMRL, WSWRD, TTEB

26 West Martin Luther King Drive

Cincinnati, OH 45220

Phone: 513.569.7412

schock.michael@epa.gov

From: Howard Croft [mailto:hcroft@cityofflint.com]
Sent: Wednesday, September 23, 2015 3:52 PM
To: Brent Wright; Dayne Walling; donna. cole; edwardsm; Gerald (Jed) Natzke; Howard Croft; James Henry; Jason Lorenz; jmikewright; JoAnne Herman; John O'Brien; Kirk Smith; larry.koehler@mcc.edu; Laura Sullivan; lytle.darrin@epa.gov; Michael Glasgow; Wright, Michael; Mike Lane; Mike Prysby (DEQ); Natasha Henderson; Norb Birchmeier; Pete Levine; Robert Bincsik; rosejo@msu.edu; Russell Hudson; Samir Matta; Schock, Michael; Sean Kammer; Warren Green; Busch, Stephen (DEQ)
Subject: Technical Advisory Meeting

Technical Advisory Team,

I am writing to inform everyone that we have scheduled the next Technical Advisory Committee meeting to be Wednesday October 7th, 2015 from 2:00 – 4:30 pm. We are extending invitations to Marc Edwards of Virginia Tech along with two lead experts from the EPA (Darren Lytle & Michael Schock) to become a part of the technical team and we are hopeful that they will all be present at the upcoming meeting.

At the meeting we will discuss an overview of the City water system, compliance with the Safe Drinking Water Act, lead concerns, corrosion control, water testing, public education, capital improvement plans, the KWA pipeline, and next steps.

I will forward a specific location and agenda in the near future but we are firmly committing to the time and date. As with previous meetings we look forward to this group having positive dialogue that will benefit the community.

Thank you,

--

Howard Croft

Public Works Director

City of Flint

1101 S. Saginaw Street

Flint, MI 48502

PH# 810.766.7135 Ext.2043

hcroft@cityofflint.com

To: Hyde, Tinka[hyde.tinka@epa.gov]; Henry, Timothy[henry.timothy@epa.gov]
From: Poy, Thomas
Sent: Thur 9/24/2015 6:44:04 PM
Subject: FW: Website link for news conference on EBLLs in Flint

FYI…

Tom Poy

Chief, Ground Water and Drinking Water Branch

USEPA - Region 5

(312) 886-5991

From: Deltoral, Miguel
Sent: Thursday, September 24, 2015 1:10 PM
To: Suero, Maryann; Poy, Thomas; Bair, Rita; Damato, Nicholas; Shoven, Heather; Porter, Andrea; Crooks, Jennifer
Cc: Darman, Leslie; King, Carol; Kempic, Jeffrey; Moriarty, Edward; Schock, Michael; Lytle, Darren; Glowacki, Joanna
Subject: Website link for news conference on EBLLs in Flint

http://www.mlive.com/news/flint/index.ssf/2015/09/doctors_health_officials_to_sp.html#incart_river

Watch live: Doctors to speak out today on lead in Flint water | MLive.com

Representatives of several Flint medical institutions, including Hurley Medical Center and Mott Children's Health Center, say they will discuss their concerns regarding lead levels in the city's drinking water at a news conference today, Sept. 24.

Read more...

Miguel A. Del Toral

Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

To: Henry, Timothy[henry.timothy@epa.gov]
From: Poy, Thomas
Sent: Thur 9/24/2015 9:13:06 PM
Subject: FW: Pediatrician's blood lead study and City of Flint response. FYI

Tim: The pediatrician's statement that she heard Flint officials say the water experts say there's no corrosivity issue is after the blood lead level numbers (in red).

Tom

Tom Poy

Chief, Ground Water and Drinking Water Branch

USEPA - Region 5

(312) 886-5991

From: Deltoral, Miguel
Sent: Tuesday, September 22, 2015 7:59 AM
To: Poy, Thomas; Bair, Rita; Damato, Nicholas
Cc: Glowacki, Joanna; Shoven, Heather; Porter, Andrea; Harris, Kimberly
Subject: Fw: Pediatrician's blood lead study and City of Flint response. FYI

I think we should alert the Childrens Health folks (Maryann).

Miguel A. Del Toral

Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

From: Marc Edwards <edwardsm@vt.edu>
Sent: Monday, September 21, 2015 04:49 PM
To: Schock, Michael; Lytle, Darren; Burneson, Eric; demarco.carol@epa.gov; Murphy, Thomas; Shoven, Heather; Deltoral, Miguel
Subject: Pediatrician's blood lead study and City of Flint response. FYI

Pediatrician's from Hurley medical center gave a medical briefing to the mayor, Croft and the City administrator about their blood lead data today.

To summarize what they found, they compared incidence of EBL (> 5 ug/dL) in the time period before and after the switch using their in-house data. Basically repeating my DC Lead study from 2009 methods.

For infants < 15 months, here is what they found.

1) Non-flint residents no change (0.5% pre vs. 0.5% post).

2) The two zip codes where we found the highest lead in water, EBL rose from 1.5% pre-switch to 4.4% after the switch.

3) For the rest of Flint (lower risk zip codes) the EBL incidence rose from 0.6 to 1.1%.

4) For all children less than 5 years old, EBL rose from 2.1% switch to 4.0% post-switch ($p < 0.05$)

5) For all children less than 5 years old, EBL rose from 2.5% pre-switch to 6.3% post-switch in the zip codes with highest water lead risk ($p < 0.05$).

The person said I could tell you the following. What follows are her exact words, not mine. I did put the red underline emphasis in there.

"The meeting included the mayor, Croft, city administrator, sen ananich and doctors. The city folks had a meeting this am with DEQ and EPA who gave them a blessing that they were in compliance with everything - they said all the water experts this am said their is no "corrosivity" issue.

We pushed for a health advisory - even something saying "we are in compliance, but we don't know everything, we want to be safe, follow these precautions. "That would enable mobilization of additional resources. They seemed receptive to that. ?? I'm not sure what will happen - mayor is going to dc this week to see EPA? Croft said he has been sharing information with you. they are not blaming the water source, they are blaming sitting water and old pipes….they said population has decreased and more water is sitting."

The pediatrician's information is below. She said you could call her to verbally confirm what was said at the meeting.

Her cell phone is: **Personal Phone / Ex. 6**

Mona Hanna-Attisha MD MPH

Director, Pediatric Residency Program

Hurley Children's Hospital at Hurley Medical Center

Assistant Professor, Department of Pediatrics and Human Development

Michigan State University College of Human Medicine

Office: 810-262-7257

mhanna1@hurleymc.com

To: Hedman, Susan[hedman.susan@epa.gov]; Kaplan, Robert[kaplan.robert@epa.gov]; Hyde, Tinka[hyde.tinka@epa.gov]
Cc: Poy, Thomas[poy.thomas@epa.gov]; Fortin, Denise[Fortin.Denise@epa.gov]; Cassell, Peter[cassell.peter@epa.gov]; Beckmann, Ronna Erin[beckmann.ronna@epa.gov]; Deamer, Eileen[deamer.eileen@epa.gov]
From: Kelley, Jeff
Sent: Thur 9/24/2015 9:36:55 PM
Subject: Several new articles from the Flint Journal

A bunch of clips from the Flint Journal … all apparently posted today:

- □□□□□□□□ City must abandon Flint River as drinking water source amid lead crisis
- □□□□□□□□ Elevated lead found in more Flint kids after water switch, study finds
- □□□□□□□□ Doctors to speak out today on lead in Flint water
- □□□□□□□□ Flint to issue lead in water warning after push from doctors, health officials
- □□□□□□□□ GoFundMe page created by Virginia Tech researcher to buy filters for Flint residents

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http://www.mlive.com/opinion/flint/index.ssf/2015/09/abandon_flint_river_for_drinki.html

City must abandon Flint River as drinking water source amid lead crisis

The following is an opinion of The Flint Journal Editorial Board.

It's time to abandon the Flint River and go back to Lake Huron for Flint's drinking water.

And it's up to Gov. Rick Snyder to do it.

Flint residents were told they wouldn't notice any difference when officials made the switch April 25, 2014, after nearly 50 years of getting water from the Detroit pipeline.

"The water quality speaks for itself," Flint Mayor Dayne Walling said the day of the switch.

Today, that quality is still speaking and it's sounding worse by the day.

A switch that was made to save the cash-strapped city money has turned into a dangerous waiting game while crews build a new pipeline to Lake Huron.

But with the new pipeline still a year away from completion, Flint residents can no longer be asked to drink water that's safety cannot be guaranteed.

Elevated levels of the chemical TTHM in the water have segued into reports of elevated lead in the water. More Flint infants and children are being found with elevated levels of lead in their blood since the city switched to using the Flint River as its water source, according to a study from a Hurley Children's Hospital doctor.

While scientists debate test results, residents in one of the poorest cities in America are forced to either buy bottled water or take their chances with a system they're no longer confident is even safe.

This switch was made while Flint was under control of a state-appointed emergency manager, and we call upon the governor to make this right for Flint citizens by brokering a return to Detroit water that won't bankrupt the city of Flint.

Flint is in a crisis that was created in no small part by Snyder's hand-picked emergency manager and it is Snyder's job to fix this mess.

Officials have said that returning to Detroit water for the short term is not fiscally sound but that is not enough to justify staying with Flint River water. Flint is in the midst of a full-blown water emergency right now and it is incomprehensible that a solution cannot be found with our fellow Michiganders to deliver healthy water.

There is a lake full of healthy drinking water just an hour away and the pipes already in place to bring it here.

Clean water can be ours again.

Make the switch — now — before it's too late.

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http://www.mlive.com/news/flint/index.ssf/2015/09/study_shows_twice_as_many_flin.html

Elevated lead found in more Flint kids after water switch, study finds

By Ron Fonger | rfonger1@mlive.com
The Flint Journal on September 24, 2015 at 2:09 PM, updated September 24, 2015 at 4:31 PM

FLINT, MI -- More Flint infants and children are being found with elevated levels of lead in their blood since the city switched to using the Flint River as its water source, according to a new study by a Hurley Medical Center doctor.

The data show that the percentage of Flint infants and children with above average lead levels has nearly doubled citywide, and has nearly tripled among children in "high risk" areas of lead exposure, according to the study.

The research was based on blood samples from more than 1,700 children living in the city, and underscores Flint's struggles with water quality since switching from Lake Huron water in April 2014. Results of the study were delivered to Flint Mayor Dayne Walling and City Administrator Natasha Henderson this week.

The study includes a recommendation that the city end its use of the Flint River as its drinking water source "as soon as possible."

Among its key findings and recommendations:

•□□□□□□□□ The percentage of children 5 years old and younger with more than 5 micrograms per deciliter of lead in their blood increased from 2.1 percent while Flint purchased Lake Huron water from the city of Detroit to 4 percent after the switch to the Flint River.

•□□□□□□□□ The report also recommends that infant formula not be mixed with Flint tap water, that pregnant mothers not use city water, and that lead-clearing filters be distributed here.

•□□□□□□□□ Areas of Flint with the highest lead levels, according to testing by Virginia Tech University, also showed the most drastic increases in elevated lead levels in children, rising from 2.5 percent to 6.3 percent.

•□□□□□□□□ The study recommends the city declare a health advisory that could trigger additional resources from the federal government.

Findings from the study are expected to be discussed at a news conference scheduled for 3 p.m. today, Sept. 24, at Hurley.

In addition to lead researcher Dr. Mona Hanna-Attisha, representatives of the Greater Flint Health Coalition, Mott Children's Health Center, Hamilton Community Health Network and Genesee County Medical Society are also expected to speak about their concerns about the safety of Flint water.

The data from Flint children reveals an alarming increase in lead poisoning, said Hanna-Attisha, director of Hurley's pediatric residency program and an assistant professor in the Department of Pediatrics & Human Development at Michigan State University's College of Human Medicine.

The study used a database, built from blood tests collected from about 150 doctors and health care providers. It compares the lead levels in the blood of children from Jan. 1, 2013, until Sept. 15, 2013, to levels in samples collected from Jan. 1, 2015, until Sept. 15, 2015.

The city began using the Flint River as its drinking water source in April 2014, and testing by both the city and Virginia Tech have shown that lead is increasingly leaching into the city's water system.

City and state officials have said their own testing inside 169 homes in the city since the switch to river water have registered lead levels below the federal threshold of 15 parts per billion of lead.

Treated river water is 19 times more corrosive than Lake Huron water, according to Professor Marc Edwards of Virginia Tech, causing lead and lead solder in water transmission pipes and home plumbing to seep into the water supply.

Although there are measures that can be taken to reduce corrosiveness in water, including the use of phosphates, Flint had no such plan in place.

"This (higher blood lead levels in children) is exactly what you would expect to see when you put highly corrosive water into a city with so much lead plumbing and pipes," Edwards said today.

"If you look at the level of lead in Flint water, (the study is) perfectly consistent with (my) expectations."

Walling announced earlier this month that the city would speed up efforts to develop a corrosion control plan by the end of the year and has asked Gov. Rick Snyder for $10 million to replace water service lines with lead or lead solder in them.

City and state officials have estimated 15,000 homes in Flint have service lines made with lead.

The Flint Journal-MLive could not reach Walling or Henderson for comment on the new study this morning.

On Wednesday, Sept. 23, the mayor said he would issue an advisory and promote ways to minimize residents' exposure to lead such as flushing pipes before drinking city water.

Hanna-Attisha and Dr. Lawrence Reynolds, president and chief executive officer of Mott Children's Health Center, said they met Walling, Henderson and Department of Public Works Director Howard Croft Monday, Sept. 21, and were told that a return to purchasing water from Detroit would bankrupt the city.

The doctors said they are issuing their recommendations, including an end to use of the Flint River as a water source, because the city has so far failed to act.

"It's our professional obligation to care for the children of Flint (and to tell parents) if we know something," Hanna-Attisha said. "Lead poisoning is irreversible. This is not what our community needs. You have to err on the side of caution (and) educate the public."

State Senate Minority Leader Jim Ananich, D-Flint, issued a statement today, calling the findings of the lead study "alarming."

"Our top priority has to be doing everything we can and finding every available resource to ensure access to safe water for Flint residents," Ananich's statement says. "I will be leading an effort to raise state, private and philanthropic resources to deliver filters and clean water into the community as quickly as possible."

Blood lead levels above 5 micrograms per deciliter are considered elevated by the Center for Disease Control and Prevention and the new study says increasing evidence shows no safe blood lead level.

Lead is a toxic metal that was used for many years in products found in and around homes and may cause health effects such as behavioral problems and learning disabilities, according to the U.S. Environmental Protection Agency.

Reynolds said today in addition to the cost of reconnecting Flint to Detroit water, city and state officials must consider the cost of distributing water with higher lead levels than necessary, including the potential for additional attention deficit hyperactivity disorder, lower IQs, and delinquent behavior.

"No amount of lead is good for human beings," he said. "We cannot predict which child will be affected by high lead levels (and) we have a ... risk we can prevent ...

"you can pay now or pay later," he said.

The city began using the Flint River as a water source for the first time in more than 50 years in April 2014 -- a decision made by state-appointed emergency manager Darnell Earley.

Former emergency manager Jerry Ambrose, who replaced Earley, has said returning Flint to the Detroit-supplied Lake Huron water would be cost-prohibitive, resulting in an increase of about 30 percent in water rates.

Walling has also opposed a short-term contract to buy water from Detroit.

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http://www.mlive.com/news/flint/index.ssf/2015/09/doctors_health_officials_to_sp.html

Doctors to speak out today on lead in Flint water

By Ron Fonger | rfonger1@mlive.com

The Flint Journal on September 24, 2015 at 12:40 PM, updated September 24, 2015 at 3:24 PM

FLINT, MI -- Representatives of several Flint medical institutions, including Hurley Medical Center and Mott Children's Health Center, say they will discuss their concerns regarding lead levels in the city's drinking water at a news conference today, Sept. 24.

Hurley said in a news release that it will host the groups at the 3 p.m. news conference and that the meeting will also include representatives of the Flint Health Coalition, Hamilton Community Health Network and Genesee County Medical Society.

The news conference comes one day after Mayor Dayne Walling told The Flint Journal-MLive that the city would issue a lead advisory in the wake of the Greater Flint Health Coalition urgently asking the city to take that step.

The Journal could not reach Walling or City Administrator Natasha Henderson for comment today.

Walling and other city officials met with representatives of the coalition this week, hearing their concerns about the safety of Flint water.

The coalition issued a statement saying "not enough was being done to alert the public to potential risks of consuming Flint city water that could lead to elevated levels of lead."

Researchers from Virginia Tech University reported this month that their testing of Flint water in homes shows a far-reaching problem with lead.

Ten percent of Flint homes tested by Virginia Tech had 25 parts per billion of lead or more, far more than the allowable level -- 15 ppb -- set in federal guidelines, according to the university researchers.

City and state officials have said their testing shows Flint's water supply meets all health and safety regulations, never rising above 11 ppb in more than 10 percent of homes during the last 16 months.

Data from the state Department of Environment Quality shows lead levels have spiked since the city began using the Flint River as its water source in April 2014 but remained within federal thresholds for lead.

http://www.mlive.com/news/flint/index.ssf/2015/09/flint_will_issue_lead_advisory.html

Flint to issue lead in water warning after push from doctors, health officials

By Ron Fonger | rfonger1@mlive.com

The Flint Journal on September 24, 2015 at 5:50 AM, updated September 24, 2015 at 9:59 AM

FLINT, MI -- The city of Flint is expected to advise its water customers on ways to minimize exposure to lead in its tap water -- particularly for children -- after a group that includes doctors and health officials strongly suggested the step.

Flint Mayor Dayne Walling confirmed the move on Wednesday, Sept. 23, after The Flint Journal-MLive learned the Greater Flint Health Coalition approved a resolution two days prior urgently asking the city to issue the advisory.

Representatives of the coalition met privately with Walling and other city officials to express their concerns about the safety of Flint water, and issued a statement saying "not enough was being done to alert the public to potential risks of consuming Flint city water that could lead to elevated levels of lead."

Walling's statement said the city "will be issuing an advisory" on the matter "in cooperation with health partners promoting ways to minimize the exposure to lead such as flushing pipes when the water has been sitting." He did not specify when the advisory would be issued.

Walling, who earlier this month asked Gov. Rick Snyder for $30 million for Flint's infrastructure, including $10 million to replace lead service lines to homes, said in an email that he "will continue to pursue funding for a comprehensive healthy homes initiative that addresses lead in paint and pipes."

"We have to get the lead out of our community to eliminate the threat of childhood lead poisoning," the statement says. "I am extremely concerned to hear from doctors about any elevated blood lead levels in Flint's children."

The Journal could not immediately reach Walling for more information on the concerns expressed to him by doctors about lead.

Kirk D. Smith, president and chief executive officer of the Greater Flint Health Coalition, and state Senate Minority Leader Jim Ananich, the chairman of the group's board of directors, issued a statement to The Journal about the coalition's recommendation on issuing precautions.

"As a coalition of concerned physicians, health care professionals and county leaders, we are compelled to inform the public when there is a possible threat to their health so they can take appropriate precautions and actions to protect themselves and their families," the joint statement says.

"At our last meeting and in recent days we have heard from numerous physicians who shared strong concerns that not enough was being done to alert the public to potential risks of consuming Flint city water that could lead to elevated levels of lead."

A resolution approved by the nonprofit coalition's board of directors, which includes representatives of Flint area hospitals, universities, physicians and unions, comes after researchers from Virginia Tech University reported their testing here shows a far-reaching problem with lead in water.

Ten percent of Flint homes tested by Virginia Tech had 25 parts per billion of lead or more, far more than the allowable level -- 15 ppb -- set in federal guidelines, according to the university researchers.

City and state officials have said their testing shows Flint's water supply meets all health and safety regulations, never rising above 11 ppb in more than 10 percent of homes during the last 16 months, but data from the state Department of Environment Quality shows lead levels have spiked since the city began using the Flint River as its water source in April 2014.

At the urging of state and federal officials, the city announced three weeks ago that it would speed up the development of plans aimed at making Flint water less corrosive.

Professor Marc Edwards of Virginia Tech has said treated river water is currently far more corrosive than water the city had used for decades -- Lake Huron water that was treated and piped here by the city of Detroit.

Edwards has criticized the city and the state for not having developed a plan for reducing the corrosiveness of Flint's water because an estimated 15,000 homes in the city have lead or lead solder in service lines and plumbing, making the homes much more susceptible to lead leaching into water.

City Councilman Scott Kincaid, also a member of the GFHC, said he supported the organization's request for further action -- particularly after physicians raised concerns about how high lead levels could affect infants and young children.

"I'm supporting the resolution. I think we need to advise people that there is a potential concern," Kincaid said. "Lead isn't good for anybody, but the effect on infants" is especially disturbing.

Although the city has yet to issue its lead advisory, Walling's mention of allowing water to flush through pipes is the same advice given by Virginia Tech earlier this month.

Researchers at the university have also recommended that infants not be fed formula made with unfiltered Flint tap water and that residents who are not flushing water for five minutes before using it for drinking or cooking should use a filter certified to remove lead.

The Journal could not reach Dr. Lawrence Reynolds, president and CEO of Mott Children's Health Center, for comment Wednesday. Other coalition members said Reynolds led the push for additional, quick action by the city.

Lead is a toxic metal that was used for many years in products found in and around homes, according to the U.S. Environmental Protection Agency. Even at low levels, lead may cause health effects such as behavioral problems and learning disabilities.

Current regulations for lead in water began in 1992 and require a limited amount of testing to measure the degree to which lead leaches into tap water after flowing through lead service lines and lead solder in home plumbing.

Flint has struggled with its water quality since switching to the Flint River as its primary water source in April 2014. Previously, the city had purchased water through the city of Detroit, which got its water from Lake Huron.

Flint was required to step up its testing of water in homes after it shifted to the Flint River, which is intended to be a temporary move as the city and Genesee County are partners in building a new water pipeline to Lake Huron through a partnership called the Karegnondi Water Authority.

The city has been using -- and Walling and state emergency managers have supported continuing to use -- the Flint River as a stopgap water source until the KWA pipeline is expected to be completed in 2016.

In state testing of city water samples, Flint has stayed below the federal threshold for lead, with less than 10 percent of tap water samples exceeding 15 ppb.

Water systems can be required to take steps like making water less corrosive or replacing lead service lines if sampling shows such elevated lead levels.

But after the Virginia Tech testing showed lead was much more prevalent than Flint's testing showed, Edwards and U.S. Rep. Dan Kildee each raised doubts about the water testing by the city and DEQ.

Kildee said in a news release Sept. 21 that "the city, DEQ and (U.S. Environmental Protection Agency) have not adequately answered my questions on their testing methods to ensure the safety of Flint's water."

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http://www.mlive.com/news/flint/index.ssf/2015/09/gofundme_page_created_by_virgi.html

GoFundMe page created by Virginia Tech researcher to buy filters for Flint residents

By Amanda Emery | aemery@mlive.com

The Flint Journal Follow on Twitter on September 23, 2015 at 5:00 AM, updated September 23, 2015 at 5:03 AM

FLINT, MI -- A Virginia Tech University researcher has started a GoFundMe campaign in an effort to purchase lead filters for Flint water customers in need.

Anurag Mantha, a graduate student at Virginia Tech, said he has been in charge of the Flint Water Study Group and the community outreach for the group. Mantha said his job has been to analyze water samples and call people with high levels of lead to tell them their water is unsafe to drink.

"So I have been calling people and they have been telling me that they couldn't afford to buy filters." Mantha said. "That's one of the options we give to the people who have high amounts of lead. We tell them to buy NSF (National Sanitation Foundation) certified filters and they said they couldn't afford to buy them because their water bills were so high already and it was just a financial burden on them."

Virginia Tech researchers have said their testing shows a serious problem with lead in Flint water including 10 percent of homes that had 25 parts per billion of lead or more -- far more than the allowable level -- 15 ppb -- set in federal guidelines.

Mantha said he approached Professor Marc Edwards, who is heading up the study in Flint, and said he wanted to start a GoFundMe campaign to purchase filters for Flint residents in need. He said the campaign's goal is set at $25,000, but he isn't waiting to hit the goal to start helping residents out.

"Once we get things finalized we'll use the first $1,000 that we raise and kick the campaign off in Flint." Mantha said. "So that hopefully people will see that the money they are donating is doing some good."

The first priority in the giveaway will be single mothers, Manth said. He then plans to contact the Concerned Pastors for Social Action to determine the residents who are most in need.

Mantha said the cost of one filter is roughly $40 and he is working with companies to purchase the filters. The NSF filters will remove lead from the water, he said.

As of Tuesday, Sept. 23, the campaign had already raised $985. One-hundred percent of the funds raised will be used to buy the NSF filters.

For more information on the GoFundMe campaign, click here.

Jeff Kelley
Director, Office of External Communications
U.S. EPA Region 5
ph: 312-353-1159

To: Suero, Maryann[suero.maryann@epa.gov]
Cc: Poy, Thomas[poy.thomas@epa.gov]; Damato, Nicholas[damato.nicholas@epa.gov]; Bair, Rita[bair.rita@epa.gov]; Shoven, Heather[shoven.heather@epa.gov]; Porter, Andrea[porter.andrea@epa.gov]; Crooks, Jennifer[crooks.jennifer@epa.gov]; Glowacki, Joanna[glowacki.joanna@epa.gov]
From: Deltoral, Miguel
Sent: Fri 9/25/2015 11:56:05 AM
Subject: State says data shows no link to Flint River, elevated lead in blood

Greetings!

Just saw the article below, which has the following:

"Angela Minicuci, a spokeswoman for the Michigan Department of Health and Human Services, said blood lead levels in Flint have remained fairly steady for children under 16 years old since the city switched from Lake Huron water to the river."

I am not a statistician, but it struck me as odd that the State is using BLL data from people up to the age of 16 years old to compare to BLL data collected from children up to 5 years old. Doesn't the use of older children and young adults skew those numbers way down (apples to oranges)?

Maybe there's a reason they used the 16 year old cut-off, but most studies and reports that I have read focus on children under 5 or 6 years old, because this is where you find the vast majority of the EBLLs.

http://www.mlive.com/news/flint/index.ssf/2015/09/state_says_its_data_shows_no_c.html

State sa
elevatec
FLINT, MI --
use of the Fli

Read more...

Miguel A. Del Toral
Regulations Manager
U.S. EPA R5 GWDWB
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To: Hedman, Susan[hedman.susan@epa.gov]; Kaplan, Robert[kaplan.robert@epa.gov]; Hyde, Tinka[hyde.tinka@epa.gov]
Cc: Poy, Thomas[poy.thomas@epa.gov]; Fortin, Denise[Fortin.Denise@epa.gov]; Cassell, Peter[cassell.peter@epa.gov]; Beckmann, Ronna Erin[beckmann.ronna@epa.gov]; Deamer, Eileen[deamer.eileen@epa.gov]; Kelley, Jeff[kelley.jeff@epa.gov]
From: Bassler, Rachel
Sent: Fri 9/25/2015 4:31:43 PM
Subject: New Articles about Flint

Hi,

Filling in for Jeff. Below are clips from Flint:

●□□□□□□□□ Kids In Michigan May Be Drinking Water That's Tainted With Lead (Think Progress)

●□□□□□□□□ Area doctors urge seniors, children, pregnant women to stop drinking Flint water now (NBC 25 News)

●□□□□□□□□ Did Flint, Michigan, Just Lead Poison Its Children? Doctors Think So. (Daily Beast)

http://thinkprogress.org/health/2015/09/25/3705650/flint-drinking-water-lead/

Kids In Michigan May Be Drinking Water That's Tainted With Lead (Think Progress)

BY **SAM P.K. COLLINS** SEP 25, 2015 10:59AM

When Flint, Michigan officials changed the source of drinking water from Lake Huron to Lake Flint last spring, they assured residents that safety wouldn't be a concern, even as stories about changes in color, smell of chemicals, and sicknesses circulated through the state and national media outlets.

New research, however, has confirmed the worst, linking the switch in drinking water to a significant increase in the levels of lead found in children's bloodstream. The study, conducted by Dr. Mona Hanna-Attisha of the Pediatric Residency Program Hurley Medical Center, found elevated lead blood levels — surpassing 5 micrograms per deciliter — in 4 percent of Flint youngsters, which is 2 percentage points higher than what they recorded last year.

Researchers drew blood samples from more than 1,700 children five years of age and younger and analyzed two groups of samples: those taken before and after the switch. They also collected data from children living in the neighboring Genesee County, which still gets its water from the Detroit water system. Those test results found no changes in lead/blood levels among children living in the Genesee area.

Representatives of the Greater Flint Health Coalition, a group dedicated to improving the quality of the community health care system, released a statement calling on local lawmakers to issue an official warning to residents about the dangers of the drinking water.

"The findings released today are alarming. Our top priority has to be doing everything we can and finding every available resource to ensure access to safe water for Flint residents," Michigan State Senate Minority Leader Jim Ananich (D-Flint) said in a statement. "I will be leading an effort to raise state, private and philanthropic resources to deliver filters and clean water into the community as quickly as possible. We must act with urgency to protect Flint residents, especially those most vulnerable to the negative health impacts of lead: children," Ananich, also chair of the Greater Flint Health Coalition, added.

State regulators quickly decried the study, calling concerns about Flint's drinking water "near hysteria." Though Brad Wurfel, spokesperson at the Department of Environmental Quality, told U.S. News the drinking water met state and federal standards, he acknowledged that the aging water pipes haven't been maintained in more than 40 years.

The recent findings build on research previously conducted by scientists at Virginia Tech (VT) in August during which they collected and analyzed lead levels in 300 Flint homes. The researchers said the water in that area was five times more corrosive than other liquid sources in surrounding areas. VT Civil and environmental engineering professor Marc Edwards cited the study at a press conference earlier this month where he warned Flint residents that the water posed a significant danger to public health, unless it's properly filtered.

"This [problem with lead] is occurring because the water is too corrosive," Edwards said. "It has too much salt in it, and there was no plan to control the corrosion when the city began using the river in April 2014. Flint is the only city in American that I'm aware of that does not have a corrosion-control plan in place to stop this kind of problem."

Once lead enters the bloodstream via inhalation of dust, ingestion of food, drinking of water that flows through lead pipes, or hand to mouth activity, it travels to the nerves, kidneys, brain, muscles, and heart. In children and adults, the lead can be stored in the bones and teeth for decades before flowing into the bloodstream again and further damaging organs.

Long-term exposure to lead can cause blood anemia, colic, kidney damage, muscle weakness, brain damage, and death. Left unabated, lead in the bloodstream also affects reaction time, memory, and retention of new information. Hanna-Atisha's report said evidence supported the likelihood of decreased IQ among youngsters with lead/blood levels as low as 4 micrograms per deciliter.

The media shed light on the perils of lead exposure earlier this year in the days after Freddie Gray died under mysterious circumstances while in police custody. In 2008, Gray's family filed a lawsuit against Stanley Rochkind, the owner of a home they rented for four years, arguing that the children's exposure to the substance played a significant part in their educational, behavioral and medical problems — including attention-deficit hyperactivity disorder. The residence in question didn't undergo renovations when Baltimore City officials banned the use of lead-based paint in the 1970s.

On Friday, Hanna-Attisha made an appeal to Michigan lawmakers to prevent similar folly, pointing to the long-term public health effects of lead exposure. She said the issue could no longer be ignored. "It's our professional obligation to care for the children of Flint if we know something," Hanna-Attisha told the Associated Press. "Lead poisoning is irreversible. This is not what our community needs. You have to err on the side of caution [and] educate the public."

http://nbc25news.com/news/local/area-doctors-send-out-warning-about-drinking-flint-water/

Area doctors urge seniors, children, pregnant women to stop drinking Flint water now

BY NICKY ZIZAZA THURSDAY, SEPTEMBER 24TH 2015

FLINT — Today at Hurley Medical Center, doctors warned the public that lead levels in Flint water are too high and many residents should stop drinking it immediately.

Hurley did their own study of Flint water. They have advised senior citizens, children, and pregnant women to stop drinking Flint water right now or they could face irreversible damage. This damage could include memory loss or lowered IQ.

They found double the acceptable amount of lead in Flint water. They tested the specific zip codes done in the recent Virginia Tech study and found excessive blood lead levels in children and babies.

This will affect them not only now, but for decades to come, doctors say. They are advising people to use lead filters.

The head of the Genesee County Health Department, Mark Valacak, said that just looking at children won't identify any of the issues. A blood test is the only way to know for certain.

Dr. Mona Hanna-Attisha, who ran the study, says, "This is not what our community needs."

The Virginia Tech study showed that Flint River water was specifically causing lead in old pipes to be released.

A gofundme account was recently set up by the Virginia Tech group, with the intent of buying the citizens of Flint filters that can remove the lead from the water.

Congressman Dan Kildee issued the following statement:

"Immediate action needs to be taken by the State of Michigan to ensure that relief is provided to people who are concerned about lead levels in their water. Today as part of my ongoing efforts, I talked with the EPA Region 5 Administrator about the State of Michigan providing emergency assistance, including lead-clearing filters and bottled water, until a more permanent solution can be determined.

"This new study by the medical community also raises additional doubts about prior water testing done by the DEQ and EPA that stated the water was in compliance with federal law. I have been completely unsatisfied with their answers to my questions regarding their testing methodology, which is why I have called for additional immediate independent and scientific testing to be done."

Senate Minority Leader Jim Ananich issued the following statement:

"The findings released today are alarming. Our top priority has to be doing everything we can and finding every available resource to ensure access to safe water for Flint residents. I will be leading an effort to raise state, private and philanthropic resources to deliver filters and clean water into the community as quickly as possible.

We must act with urgency to protect Flint residents, especially those most vulnerable to the negative health impacts of lead: children. Anyone with concerns about their water should visit flintwaterinfo.com and contact their physician or the Genesee County Health Department immediately."

http://www.thedailybeast.com/articles/2015/09/24/did-flint-michigan-just-lead-poison-its-children-doctors-think-so.html

Did Flint, Michigan, Just Lead Poison Its Children? Doctors Think So.

By: Russell Saunders 09.24.156:10 PM ET

Since the city switched from Lake Huron to the Flint River as a water source, its children's lead levels have doubled.

According to researchers in Flint, Michigan, blood tests have revealed a distressing conclusion—the tap water residents are drinking is causing elevated lead levels in the city's children.

A new study headed by Dr. Mona Hanna-Attisha, a researcher and director of the pediatric residency program at Hurley Medical Center, compared blood tests taken over a span of months in 2013 with samples taken over a similar span this year. During the time between, the city of Flint changed the source of its drinking water from Lake Huron to treated water from the Flint River.

What they found by comparing the samples is that the percentage of children with lead levels over the acceptable limit nearly doubled after the change. In 2013, about 2 percent of tests had results over 5 micrograms per deciliter (the current "safe" cut-off level, above which steps to identify and mitigate the source of lead exposure are recommended). About 4 percent of the later samples revealed elevated levels. Areas that yielded the highest blood levels had an increase in abnormal samples from 2.5 percent to 6.3 percent.

The consequences of increased lead exposure, especially for younger children, can be dire. Symptoms can include developmental delays, irritability and sluggishness, as well as gastrointestinal problems like poor appetite, abdominal pain, and vomiting. Newborns can experience not only slowed development, but slowed growth.

The new study recommends that Flint city water not be used to mix infant formula, or consumed by pregnant women.

The reason the new water source may be contributing to these elevated lead levels does not have to do with the lead content of the river water itself, but rather its effects on the lead pipes that approximately 15,000 homes in the city are reported to have.

A group of volunteer researchers from Virginia Tech University have been doing ongoing work on the safety of Flint drinking water. Their lead investigator, 2007 MacArthur fellow Dr. Marc Edwards, has noted that treated Flint River water is 19 times as corrosive as water from Lake Huron. This causes the treated water to leach lead from pipes and soldering.

In a separate report, the Virginia Tech team analyzed Flint city water directly and found that 42 percent of the 120 samples collected had lead levels greater than 5 parts per billion, and 20 percent had levels about 15 ppd, the cut-off at which the Environmental Protection Agency requires action.

What is to be done about this problem remains to be seen. Dr. Hanna-Attisha has said that city officials told her a return to Lake Huron water is not financially feasible for Flint. The mayor is asking the state for $10 million in funds to replace lead water service lines.

From: Kelley, Jeff
Sent: Thursday, September 24, 2015 4:39 PM
To: Bassler, Rachel
Subject: Fwd: Several new articles from the Flint Journal

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Jeff Kelley
Director, Office of External Communications
U.S. EPA Region 5
ph: 312-353-1159

---------- Forwarded message ----------
From: "**Kelley, Jeff**" <kelley.jeff@epa.gov>
Date: Thu, Sep 24, 2015 at 2:36 PM -0700
Subject: Several new articles from the Flint Journal
To: "Susan Hedman" <Hedman.Susan@epa.gov>, "Robert Kaplan (kaplan.robert@epa.gov)" <kaplan.robert@epa.gov>, "Hyde, Tinka" <hyde.tinka@epa.gov>
Cc: "Poy, Thomas" <poy.thomas@epa.gov>, "Fortin, Denise" <Fortin.Denise@epa.gov>, "Cassell, Peter" <cassell.peter@epa.gov>, "Ronna Beckmann" <Beckmann.Ronna@epa.gov>, "Eileen Deamer" <Deamer.Eileen@epa.gov>

A bunch of clips from the Flint Journal … all apparently posted today:

- City must abandon Flint River as drinking water source amid lead crisis
- Elevated lead found in more Flint kids after water switch, study finds
- Doctors to speak out today on lead in Flint water
- Flint to issue lead in water warning after push from doctors, health officials
- GoFundMe page created by Virginia Tech researcher to buy filters for Flint residents

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http://www.mlive.com/opinion/flint/index.ssf/2015/09/abandon_flint_river_for_drinki.html

City must abandon Flint River as drinking water source amid lead crisis

The following is an opinion of The Flint Journal Editorial Board.

It's time to abandon the Flint River and go back to Lake Huron for Flint's drinking water.

And it's up to Gov. Rick Snyder to do it.

Flint residents were told they wouldn't notice any difference when officials made the switch April 25, 2014, after nearly 50 years of getting water from the Detroit pipeline.

"The water quality speaks for itself," Flint Mayor Dayne Walling said the day of the switch.

Today, that quality is still speaking and it's sounding worse by the day.

A switch that was made to save the cash-strapped city money has turned into a dangerous waiting game while crews build a new pipeline to Lake Huron.

But with the new pipeline still a year away from completion, Flint residents can no longer be asked to drink water that's safety cannot be guaranteed.

Elevated levels of the chemical TTHM in the water have segued into reports of elevated lead in the water. More Flint infants and children are being found with elevated levels of lead in their blood since the city switched to using the Flint River as its water source, according to a study from a Hurley Children's Hospital doctor.

While scientists debate test results, residents in one of the poorest cities in America are forced to either buy bottled water or take their chances with a system they're no longer confident is even safe.

This switch was made while Flint was under control of a state-appointed emergency manager, and we call upon the governor to make this right for Flint citizens by brokering a return to Detroit water that won't bankrupt the city of Flint.

Flint is in a crisis that was created in no small part by Snyder's hand-picked emergency manager and it is Snyder's job to fix this mess.

Officials have said that returning to Detroit water for the short term is not fiscally sound but that is not enough to justify staying with Flint River water. Flint is in the midst of a full-blown water emergency right now and it is incomprehensible that a solution cannot be found with our fellow Michiganders to deliver healthy water.

There is a lake full of healthy drinking water just an hour away and the pipes already in place to bring it here.

Clean water can be ours again.

Make the switch — now — before it's too late.

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http://www.mlive.com/news/flint/index.ssf/2015/09/study_shows_twice_as_many_flin.html

Elevated lead found in more Flint kids after water switch, study finds

By Ron Fonger | rfonger1@mlive.com
The Flint Journal on September 24, 2015 at 2:09 PM, updated September 24, 2015 at 4:31 PM

FLINT, MI -- More Flint infants and children are being found with elevated levels of lead in their blood since the city switched to using the Flint River as its water source, according to a new study by a Hurley Medical Center doctor.

The data show that the percentage of Flint infants and children with above average lead levels has nearly doubled citywide, and has nearly tripled among children in "high risk" areas of lead exposure, according to the study.

The research was based on blood samples from more than 1,700 children living in the city, and underscores Flint's struggles with water quality since switching from Lake Huron water in April 2014. Results of the study were delivered to Flint Mayor Dayne Walling and City Administrator Natasha Henderson this week.

The study includes a recommendation that the city end its use of the Flint River as its drinking water source "as soon as possible."

Among its key findings and recommendations:

- The percentage of children 5 years old and younger with more than 5 micrograms per deciliter of lead in their blood increased from 2.1 percent while Flint purchased Lake Huron water from the city of Detroit to 4 percent after the switch to the Flint River.

- The report also recommends that infant formula not be mixed with Flint tap water, that pregnant mothers not use city water, and that lead-clearing filters be distributed here.

- Areas of Flint with the highest lead levels, according to testing by Virginia Tech University, also showed the most drastic increases in elevated lead levels in children, rising from 2.5 percent to 6.3 percent.

- The study recommends the city declare a health advisory that could trigger additional resources from the federal government.

Findings from the study are expected to be discussed at a news conference scheduled for 3 p.m. today, Sept. 24, at Hurley.

In addition to lead researcher Dr. Mona Hanna-Attisha, representatives of the Greater Flint Health Coalition, Mott Children's Health Center, Hamilton Community Health Network and Genesee County Medical Society are also expected to speak about their concerns about the safety of Flint water.

The data from Flint children reveals an alarming increase in lead poisoning, said Hanna-Attisha, director of Hurley's pediatric residency program and an assistant professor in the Department of Pediatrics & Human Development at Michigan State University's College of Human Medicine.

The study used a database, built from blood tests collected from about 150 doctors and health care providers. It compares the lead levels in the blood of children from Jan. 1, 2013, until Sept. 15, 2013, to levels in samples collected from Jan. 1, 2015, until Sept. 15, 2015.

The city began using the Flint River as its drinking water source in April 2014, and testing by both the city and Virginia Tech have shown that lead is increasingly leaching into the city's water system.

City and state officials have said their own testing inside 169 homes in the city since the switch to river water have registered lead levels below the federal threshold of 15 parts per billion of lead.

Treated river water is 19 times more corrosive than Lake Huron water, according to Professor Marc Edwards of Virginia Tech, causing lead and lead solder in water transmission pipes and home plumbing to seep into the water supply.

Although there are measures that can be taken to reduce corrosiveness in water, including the use of phosphates, Flint had no such plan in place.

"This (higher blood lead levels in children) is exactly what you would expect to see when you put highly corrosive water into a city with so much lead plumbing and pipes," Edwards said today.

"If you look at the level of lead in Flint water, (the study is) perfectly consistent with (my) expectations."

Walling announced earlier this month that the city would speed up efforts to develop a corrosion control plan by the end of the year and has asked Gov. Rick Snyder for $10 million to replace water service lines with lead or lead solder in them.

City and state officials have estimated 15,000 homes in Flint have service lines made with lead.

The Flint Journal-MLive could not reach Walling or Henderson for comment on the new study this morning.

On Wednesday, Sept. 23, the mayor said he would issue an advisory and promote ways to minimize residents' exposure to lead such as flushing pipes before drinking city water.

Hanna-Attisha and Dr. Lawrence Reynolds, president and chief executive officer of Mott Children's Health Center, said they met Walling, Henderson and Department of Public Works Director Howard Croft Monday, Sept. 21, and were told that a return to purchasing water from Detroit would bankrupt the city.

The doctors said they are issuing their recommendations, including an end to use of the Flint River as a water source, because the city has so far failed to act.

"It's our professional obligation to care for the children of Flint (and to tell parents) if we know something," Hanna-Attisha said. "Lead poisoning is irreversible. This is not what our community needs. You have to err on the side of caution (and) educate the public."

State Senate Minority Leader Jim Ananich, D-Flint, issued a statement today, calling the findings of the lead study "alarming."

"Our top priority has to be doing everything we can and finding every available resource to ensure access to safe water for Flint residents," Ananich's statement says. "I will be leading an effort to raise state, private and philanthropic resources to deliver filters and clean water into the community as quickly as possible."

Blood lead levels above 5 micrograms per deciliter are considered elevated by the Center for Disease Control and Prevention and the new study says increasing evidence shows no safe blood lead level.

Lead is a toxic metal that was used for many years in products found in and around homes and may cause health effects such as behavioral problems and learning disabilities, according to the U.S. Environmental Protection Agency.

Reynolds said today in addition to the cost of reconnecting Flint to Detroit water, city and state officials must consider the cost of distributing water with higher lead levels than necessary, including the potential for additional attention deficit hyperactivity disorder, lower IQs, and delinquent behavior.

"No amount of lead is good for human beings," he said. "We cannot predict which child will be affected by high lead levels (and) we have a ... risk we can prevent ...

"you can pay now or pay later," he said.

The city began using the Flint River as a water source for the first time in more than 50 years in April 2014 -- a decision made by state-appointed emergency manager Darnell Earley.

Former emergency manager Jerry Ambrose, who replaced Earley, has said returning Flint to the Detroit-supplied Lake Huron water would be cost-prohibitive, resulting in an increase of about 30 percent in water rates.

Walling has also opposed a short-term contract to buy water from Detroit.

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http://www.mlive.com/news/flint/index.ssf/2015/09/doctors_health_officials_to_sp.html

Doctors to speak out today on lead in Flint water

By Ron Fonger | rfonger1@mlive.com

The Flint Journal on September 24, 2015 at 12:40 PM, updated September 24, 2015 at 3:24 PM

FLINT, MI -- Representatives of several Flint medical institutions, including Hurley Medical Center and Mott Children's Health Center, say they will discuss their concerns regarding lead levels in the city's drinking water at a news conference today, Sept. 24.

Hurley said in a news release that it will host the groups at the 3 p.m. news conference and that the meeting will also include representatives of the Flint Health Coalition, Hamilton Community Health Network and Genesee County Medical Society.

The news conference comes one day after Mayor Dayne Walling told The Flint Journal-MLive that the city would issue a lead advisory in the wake of the Greater Flint Health Coalition urgently asking the city to take that step.

The Journal could not reach Walling or City Administrator Natasha Henderson for comment today.

Walling and other city officials met with representatives of the coalition this week, hearing their concerns about the safety of Flint water.

The coalition issued a statement saying "not enough was being done to alert the public to potential risks of consuming Flint city water that could lead to elevated levels of lead."

Researchers from Virginia Tech University reported this month that their testing of Flint water in homes shows a far-reaching problem with lead.

Ten percent of Flint homes tested by Virginia Tech had 25 parts per billion of lead or more, far more than the allowable level -- 15 ppb -- set in federal guidelines, according to the university researchers.

City and state officials have said their testing shows Flint's water supply meets all health and safety regulations, never rising above 11 ppb in more than 10 percent of homes during the last 16 months.

Data from the state Department of Environment Quality shows lead levels have spiked since the city began using the Flint River as its water source in April 2014 but remained within federal thresholds for lead.

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http://www.mlive.com/news/flint/index.ssf/2015/09/flint_will_issue_lead_advisory.html

Flint to issue lead in water warning after push from doctors, health officials

By Ron Fonger | rfonger1@mlive.com

The Flint Journal on September 24, 2015 at 5:50 AM, updated September 24, 2015 at 9:59 AM

FLINT, MI -- The city of Flint is expected to advise its water customers on ways to minimize exposure to lead in its tap water -- particularly for children -- after a group that includes doctors and health officials strongly suggested the step.

Flint Mayor Dayne Walling confirmed the move on Wednesday, Sept. 23, after The Flint Journal-MLive learned the Greater Flint Health Coalition approved a resolution two days prior urgently asking the city to issue the advisory.

Representatives of the coalition met privately with Walling and other city officials to express their concerns about the safety of Flint water, and issued a statement saying "not enough was being done to alert the public to potential risks of consuming Flint city water that could lead to elevated levels of lead."

Walling's statement said the city "will be issuing an advisory" on the matter "in cooperation with health partners promoting ways to minimize the exposure to lead such as flushing pipes when the water has been sitting." He did not specify when the advisory would be issued.

Walling, who earlier this month asked Gov. Rick Snyder for $30 million for Flint's infrastructure, including $10 million to replace lead service lines to homes, said in an email that he "will continue to pursue funding for a comprehensive healthy homes initiative that addresses lead in paint and pipes."

"We have to get the lead out of our community to eliminate the threat of childhood lead poisoning," the statement says. "I am extremely concerned to hear from doctors about any elevated blood lead levels in Flint's children."

The Journal could not immediately reach Walling for more information on the concerns expressed to him by doctors about lead.

Kirk D. Smith, president and chief executive officer of the Greater Flint Health Coalition, and state Senate Minority Leader Jim Ananich, the chairman of the group's board of directors, issued a statement to The Journal about the coalition's recommendation on issuing precautions.

"As a coalition of concerned physicians, health care professionals and county leaders, we are compelled to inform the public when there is a possible threat to their health so they can take appropriate precautions and actions to protect themselves and their families," the joint statement says.

"At our last meeting and in recent days we have heard from numerous physicians who shared strong concerns that not enough was being done to alert the public to potential risks of consuming Flint city water that could lead to elevated levels of lead."

A resolution approved by the nonprofit coalition's board of directors, which includes representatives of Flint area hospitals, universities, physicians and unions, comes after researchers from Virginia Tech University reported their testing here shows a far-reaching problem with lead in water.

Ten percent of Flint homes tested by Virginia Tech had 25 parts per billion of lead or more, far more than the allowable level -- 15 ppb -- set in federal guidelines, according to the university researchers.

City and state officials have said their testing shows Flint's water supply meets all health and safety regulations, never rising above 11 ppb in more than 10 percent of homes during the last 16 months, but data from the state Department of Environment Quality shows lead levels have spiked since the city began using the Flint River as its water source in April 2014.

At the urging of state and federal officials, the city announced three weeks ago that it would speed up the development of plans aimed at making Flint water less corrosive.

Professor Marc Edwards of Virginia Tech has said treated river water is currently far more corrosive than water the city had used for decades -- Lake Huron water that was treated and piped here by the city of Detroit.

Edwards has criticized the city and the state for not having developed a plan for reducing the corrosiveness of Flint's water because an estimated 15,000 homes in the city have lead or lead solder in service lines and plumbing, making the homes much more susceptible to lead leaching into water.

City Councilman Scott Kincaid, also a member of the GFHC, said he supported the organization's request for further action -- particularly after physicians raised concerns about how high lead levels could affect infants and young children.

"I'm supporting the resolution. I think we need to advise people that there is a potential concern," Kincaid said. "Lead isn't good for anybody, but the effect on infants" is especially disturbing.

Although the city has yet to issue its lead advisory, Walling's mention of allowing water to flush through pipes is the same advice given by Virginia Tech earlier this month.

Researchers at the university have also recommended that infants not be fed formula made with unfiltered Flint tap water and that residents who are not flushing water for five minutes before using it for drinking or cooking should use a filter certified to remove lead.

The Journal could not reach Dr. Lawrence Reynolds, president and CEO of Mott Children's Health Center, for comment Wednesday. Other coalition members said Reynolds led the push for additional, quick action by the city.

Lead is a toxic metal that was used for many years in products found in and around homes, according to the U.S. Environmental Protection Agency. Even at low levels, lead may cause health effects such as behavioral problems and learning disabilities.

Current regulations for lead in water began in 1992 and require a limited amount of testing to measure the degree to which lead leaches into tap water after flowing through lead service lines and lead solder in home plumbing.

Flint has struggled with its water quality since switching to the Flint River as its primary water source in April 2014. Previously, the city had purchased water through the city of Detroit, which got its water from Lake Huron.

Flint was required to step up its testing of water in homes after it shifted to the Flint River, which is intended to be a temporary move as the city and Genesee County are partners in building a new water pipeline to Lake Huron through a partnership called the Karegnondi Water Authority.

The city has been using -- and Walling and state emergency managers have supported continuing to use -- the Flint River as a stopgap water source until the KWA pipeline is expected to be completed in 2016.

In state testing of city water samples, Flint has stayed below the federal threshold for lead, with less than 10 percent of tap water samples exceeding 15 ppb.

Water systems can be required to take steps like making water less corrosive or replacing lead service lines if sampling shows such elevated lead levels.

But after the Virginia Tech testing showed lead was much more prevalent than Flint's testing showed, Edwards and U.S. Rep. Dan Kildee each raised doubts about the water testing by the city and DEQ.

Kildee said in a news release Sept. 21 that "the city, DEQ and (U.S. Environmental Protection Agency) have not adequately answered my questions on their testing methods to ensure the safety of Flint's water."

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http://www.mlive.com/news/flint/index.ssf/2015/09/gofundme_page_created_by_virgi.html

GoFundMe page created by Virginia Tech researcher to buy filters for Flint residents

By Amanda Emery | aemery@mlive.com

The Flint Journal Follow on Twitter on September 23, 2015 at 5:00 AM, updated September 23, 2015 at 5:03 AM

FLINT, MI -- A Virginia Tech University researcher has started a GoFundMe campaign in an effort to purchase lead filters for Flint water customers in need.

Anurag Mantha, a graduate student at Virginia Tech, said he has been in charge of the Flint Water Study Group and the community outreach for the group. Mantha said his job has been to analyze water samples and call people with high levels of lead to tell them their water is unsafe to drink.

"So I have been calling people and they have been telling me that they couldn't afford to buy filters." Mantha said. "That's one of the options we give to the people who have high amounts of lead. We tell them to buy NSF (National Sanitation Foundation) certified filters and they said they couldn't afford to buy them because their water bills were so high already and it was just a financial burden on them."

Virginia Tech researchers have said their testing shows a serious problem with lead in Flint water including 10 percent of homes that had 25 parts per billion of lead or more -- far more than the allowable level -- 15 ppb -- set in federal guidelines.

Mantha said he approached Professor Marc Edwards, who is heading up the study in Flint, and said he wanted to start a GoFundMe campaign to purchase filters for Flint residents in need. He said the campaign's goal is set at $25,000, but he isn't waiting to hit the goal to start helping residents out.

"Once we get things finalized we'll use the first $1,000 that we raise and kick the campaign off in Flint." Mantha said. "So that hopefully people will see that the money they are donating is doing some good."

The first priority in the giveaway will be single mothers, Manth said. He then plans to contact the Concerned Pastors for Social Action to determine the residents who are most in need.

Mantha said the cost of one filter is roughly $40 and he is working with companies to purchase the filters. The NSF filters will remove lead from the water, he said.

As of Tuesday, Sept. 23, the campaign had already raised $985. One-hundred percent of the funds raised will be used to buy the NSF filters.

For more information on the GoFundMe campaign, click here.

Jeff Kelley
Director, Office of External Communications
U.S. EPA Region 5
ph: 312-353-1159

To: Hedman, Susan[hedman.susan@epa.gov]; Kaplan, Robert[kaplan.robert@epa.gov]; Hyde, Tinka[hyde.tinka@epa.gov]
Cc: Poy, Thomas[poy.thomas@epa.gov]; Fortin, Denise[Fortin.Denise@epa.gov]; Cassell, Peter[cassell.peter@epa.gov]; Beckmann, Ronna Erin[beckmann.ronna@epa.gov]; Deamer, Eileen[deamer.eileen@epa.gov]; Kelley, Jeff[kelley.jeff@epa.gov]
From: Bassler, Rachel
Sent: Fri 9/25/2015 7:32:32 PM
Subject: RE: New Articles about Flint - Updated 2:32 PM

New articles on Flint drinking water:

•□□□□□□□□ Flint issues warning about lead in city's drinking water (Michigan Radio)

•□□□□□□□□ Area doctors urge seniors, children, pregnant women to stop drinking Flint (Dispatch Times)

•□□□□□□□□ Did This Michigan Town Poison Its Children? (US News and World Report)

•□□□□□□□□ Lead contamination in water like 'living in a third-world country' (Fox Carolina)

•□□□□□□□□ Flint officials issue lead advisory (Harold Current)

http://michiganradio.org/post/flint-issues-warning-about-lead-citys-drinking-water#stream/0

Flint issues warning about lead in city's drinking water

By STEVE CARMODY • 6 MINUTES AGO

Michigan Radio

The advisory comes a day after local hospital officials announced blood lead levels in young children in Flint have doubled, and in some cases tripled, since the city started getting its drinking water from the Flint River in April of 2014.

Mayor Dayne Walling says city residents should take steps to reduce their lead exposure.

The city is recommending Flint water users:

- Flush cold water pipes by running the water for approximately five minutes before use.
- Use only water from the cold water tap for drinking, cooking and especially for making baby formula
- Install a water filter that is NSF-certified for lead removal

The mayor says the city is also taking steps to address the problem, and plans to reduce corrosion in the city's drinking water.

Walling says the goal is to make Flint "lead-free."

"So that whatever our water source and situation is … that we are providing a safe environment for all of Flint's families … especially our children," says Walling.

But it is the source of the city's drinking water that many critics say is the source of the problem.

Curt Guyette, with the ACLU, says city leaders' insistence that Flint's water is "clean and safe" while blaming lead pipes for the lead in the water is "double talk." Guyette says it's clear the corrosiveness of the Flint River is causing the lead pipes to break down.

"They are doing everything they can to try to not admit that," says Guyette.

City, Genesee County and state officials say they are reviewing data collected by researchers from Virginia Tech.

The Virginia Tech researchers tested water samples collected from nearly 300 Flint homes. Many of the homes tested above the 15 parts per billion threshold.

Similar testing by the city and overseen by the state showed lower lead levels.

Officials says it's that disagreement that's causing some delay in coming up with a response.

"You need concrete data. And I'm going to be quite honest, there's some conflicting data right now, in terms of the results that have been presented," says Mark Valacak is the health officer with the Genesee County Health Department.

"As we move forward, we'll have more data and be able to justify … additional resources coming in to the community," says Valacak.

Mayor Walling has asked the governor's office for $30 million to fix the system and help replace lead pipes.

The lead pipe problem is not confined to individual homes. City officials say 15,000 transmission lines connecting homes to city water mains are made with lead pipes. That's about half of the city's customers.

You can read an FAQ from the state about water lead levels here.

http://www.dispatchtimes.com/area-doctors-urge-seniors-children-pregnant-women-to-stop-drinking-flint/103934/

Area doctors urge seniors, children, pregnant women to stop drinking Flint

BY **NEWSMEDIA**ON **SEPTEMBER 25, 2015**

Dispatch Times

They have advised senior citizens, children, and pregnant women to stop drinking *Flint* water right now or they could face irreversible damage.

Walling said the water source, whether the city continues to get water from the Flint River or go back to getting its water from Detroit, will continue to be a discussion.

The advisory was issued after researchers released findings of an increase of blood lead levels in Flint children.

But until the new system comes on-line in 2016, Flint is temporarily pulling water from the Flint River. This causes the treated water to leach lead from pipes and soldering. “We are very concerned and we will take steps to contain lead levels in the water”.

They said the levels of lead in certain neighborhoods have more than doubled since the city tapped its own water supply. About 4 percent of the later samples revealed elevated levels. In Flint’s highest risk ZIP codes, the change was even more surprising, she said – jumping from 2.5% of the children to 6.3%. Blood is drawn as part of routine lead-level testing, especially among children who are on Medicaid or are in high-risk areas. Newborns can experience not only slowed development, but slowed growth.

Residents said they are exhausted of hearing about what's wrong with the water, they want to know when it's going to be safe for everyone.

A group of volunteer researchers from Virginia Tech University have been doing ongoing work on the safety of Flint drinking water.

The city of Flint has issued a lead advisory for its residents.

State regulators quickly decried the study, calling concerns about Flint's drinking water "near hysteria".

What is to be done about this problem remains to be seen.

The Genesee County Medical Society Board of Directors approved a resolution Tuesday, September 25, encouraging breast feeding, advising no use of Flint tap water by infants who are fed formula, and encouraging the city to end its use of the Flint River as a water source "as soon as is practicable". The mayor is asking the state for $10 million in funds to replace lead water service lines.

http://www.usnews.com/news/articles/2015/09/25/flint-michigan-children-show-high-levels-of-lead-in-blood

US News and World Report

Did This Michigan Town Poison Its Children?

Children in Flint, Michigan are showing high levels of blood lead.

Associated Press Sept. 25, 2015 | 8:46 a.m. EDT

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FLINT, Mich. (AP) — Some doctors urged Flint on Thursday to stop using the Flint River for water after finding high levels of lead in the blood of children, an extraordinary health warning in an ongoing controversy over the city's water supply.

"It's our professional obligation to care for the children of Flint if we know something," said the lead researcher, Dr. Mona Hanna-Attisha of Hurley Medical Center in Flint. "Lead poisoning is irreversible. This is not what our community needs. You have to err on the side of caution (and) educate the public."

There is no dispute that water drawn from the Flint River since 2014 is agitating and releasing lead in old pipes and service lines in thousands of homes. State regulators insist the water is safe, although they're urging anyone with concerns to have their water tested for free.

Hanna-Attisha said she looked at 1,746 test results from Flint children this year, compared to earlier results when Flint used Lake Huron as its water source. The percentage of kids with above-average lead levels had nearly doubled, according to the study. In certain areas, it tripled.

The study said Flint should stop using the Flint River "as soon as possible." Flint plans to switch to Lake Huron water again in 2016 when a pipeline is completed.

"No amount of lead is good for human beings. ... You can pay now or pay later," said Dr. Lawrence Reynolds, president and chief executive officer of Mott Children's Health Center, who appeared at a news conference with Hanna-Attisha.

State regulators quickly responded. Brad Wurfel, spokesman at the Department of Environmental Quality, said the water controversy is becoming "near-hysteria."

"I wouldn't call them irresponsible. I would call them unfortunate," Wurfel said of the doctors' comments.

"Flint's drinking water is safe in that it's meeting state and federal standards," he said. "The system has an aging portion that needs to be addressed. They haven't had meaningful maintenance for four decades or more."

The state Department of Health and Human Services hasn't found the same results in its own work, spokeswoman Geralyn Lasher said.

"Our experts want a better sense of how they got there," she said. "The data that we have is a much larger set of data. ... We're not seeing what those numbers look like."

http://www.foxcarolina.com/story/30113032/lead-contamination-in-water-like-living-in-a-third-world-country

Lead contamination in water like 'living in a third-world country'

Posted: Sep 24, 2015 11:39 PM CDTUpdated: Sep 24, 2015 11:39 PM CDT

Posted By Lauren Chapman

By Gino Vicci, WNEM TV5 Reporter

Fox Carolina

FLINT, MI (WNEM) -

The lead in a city water supply is at levels so high, it's being called a crisis.

"It kind of makes me feel like I'm living in a third world country," said Flint resident Maggie Kagen.

People in Flint have complained about the taste of their water since the city stopped buying it from Detroit and tapped the Flint River instead.

"Medically... this is unacceptable," said Dr. Mona Hanna-Attisha, Hurley Medical Center.

To say the city of Flint has problems with its drinking water, according to residents, would be an understatement.

"It's getting ridiculous... I'm paying for something I can't use," Kagen said.

Kagen is a single mother of five who feels the state of Flint's water supply is a health crisis. And now a doctor from Hurley Medical Center is demanding it be addressed immediately.

"It's something that's needed to be said.. it's nothing new," Hanna-Attisha said.

What is new is the presence of lead in the city's drinking water.

"Because this is something that is preventable, and this is something that is causing lifelong problems," Hanna-Attisha said.

At a news conference on Thursday at Hurley Medical Center, doctors, the Genesee County Health Department and experts urged expectant mothers and new mothers of infants to not drink unfiltered tap water or use it to mix baby formula.

They said the levels of lead in certain neighborhoods have more than doubled since the city tapped its own water supply.

Residents said they are tired of hearing about what's wrong with the water, they want to know when it's going to be safe for everyone.

"You can keep saying it's a problem, it's a problem, but if you don't come up with a solution, it doesn't make sense," said Cynthia Howell, a community advocate.

Howell is one of those residents who says enough is enough – it's time for a solution. One proposed solution at Thursday's news conference: switch the water supply back to Detroit.

Flint Mayor Dayne Walling said switching the water supply still doesn't address the city's aging infrastructure.

"We have to work long term get those lines replaced and eliminate this threat to childhood lead poisoning," Walling said.

Residents said they don't want to ignore the long-term needs of the city, but they wonder if there will be any relief in the short term.

http://www.heraldcurrent.com/flint-officials-issue-lead-advisory/6056/

Flint officials issue lead advisory

Herald Current

SEPTEMBER 25, 2015 BY ROSALIND GILMORE IN HEALTH

This causes the treated water to leach lead from pipes and soldering. "It has too much salt in it, and there was no plan to control the corrosion when the city began using the river in April 2014 ″ . Until the latest review, state data show that the percent of children with elevated blood lead levels have been falling for years.

The action comes in the same week that several health groups and physicians urged families not to use Flint tap water for infant formula because of rising levels of lead and a Hurley Medical Center doctor released a study showing increasing incidents of elevated blood lead levels in *Flint* children. "We are very concerned and we will take steps to contain lead levels in the water".

It opted instead to pull from the Karegnondi Water Authority, which is building a system to supply Genesee County with water pulled from Lake Huron.

The consequences of increased lead exposure, especially for younger children, can be dire. Areas that yielded the highest blood levels had an increase in abnormal samples from 2.5 percent to 6.3 percent. Symptoms can include developmental delays, irritability and sluggishness, as well as gastrointestinal problems like poor appetite, abdominal pain, and vomiting.

Residents said they are exhausted of hearing about what's wrong with the water, they want to know when it's going to be safe for everyone.

Water service lines installed before 1986 are more prone to lead issue due to the materials used in homes during that time, the city said in a press release.

A group of volunteer researchers from Virginia Tech University have been doing ongoing work on the safety of Flint drinking water.

Walling said earlier this week that city officials have been developing an advisory about lead dangers.

What is to be done about this problem remains to be seen.

Walling requested $30 million in funding from the state for water infrastructure assistance.

The city administrator, Natasha Henderson, said city officials are working with the Department of Environmental Quality to get corrosion control in place in Flint's water system.

From: Bassler, Rachel
Sent: Friday, September 25, 2015 11:32 AM
To: Hedman, Susan; Kaplan, Robert; Hyde, Tinka
Cc: Poy, Thomas; Fortin, Denise; Cassell, Peter; Beckmann, Ronna Erin; Deamer, Eileen; Kelley, Jeff
Subject: New Articles about Flint

Hi,

Filling in for Jeff. Below are clips from Flint:

•□□□□□□□□ Kids In Michigan May Be Drinking Water That's Tainted With Lead (Think Progress)

•□□□□□□□□ Area doctors urge seniors, children, pregnant women to stop drinking Flint water now (NBC 25 News)

•□□□□□□□□ Did Flint, Michigan, Just Lead Poison Its Children? Doctors Think So. (Daily Beast)

http://thinkprogress.org/health/2015/09/25/3705650/flint-drinking-water-lead/

Kids In Michigan May Be Drinking Water That's Tainted With Lead (Think Progress)

BY SAM P.K. COLLINS SEP 25, 2015 10:59AM

When Flint, Michigan officials changed the source of drinking water from Lake Huron to Lake Flint last spring, they assured residents that safety wouldn't be a concern, even as stories about changes in color, smell of chemicals, and sicknesses circulated through the state and national media outlets.

New research, however, has confirmed the worst, linking the switch in drinking water to a significant increase in the levels of lead found in children's bloodstream. The study, conducted by Dr. Mona Hanna-Attisha of the Pediatric Residency Program Hurley Medical Center, found elevated lead blood levels — surpassing 5 micrograms per deciliter — in 4 percent of Flint youngsters, which is 2 percentage points higher than what they recorded last year.

Researchers drew blood samples from more than 1,700 children five years of age and younger and analyzed two groups of samples: those taken before and after the switch. They also collected data from children living in the neighboring Genesee County, which still gets its water from the Detroit water system. Those test results found no changes in lead/blood levels among children living in the Genesee area.

Representatives of the Greater Flint Health Coalition, a group dedicated to improving the quality of the community health care system, released a statement calling on local lawmakers to issue an official warning to residents about the dangers of the drinking water.

"The findings released today are alarming. Our top priority has to be doing everything we can and finding every available resource to ensure access to safe water for Flint residents," Michigan State Senate Minority Leader Jim Ananich (D-Flint) said in a statement. "I will be leading an effort to raise state, private and philanthropic resources to deliver filters and clean water into the community as quickly as possible. We must act with urgency to protect Flint residents, especially those most vulnerable to the negative health impacts of lead: children," Ananich, also chair of the Greater Flint Health Coalition, added.

State regulators quickly decried the study, calling concerns about Flint's drinking water "near hysteria." Though Brad Wurfel, spokesperson at the Department of Environmental Quality, told U.S. News the drinking water met state and federal standards, he acknowledged that the aging water pipes haven't been maintained in more than 40 years.

The recent findings build on research previously conducted by scientists at Virginia Tech (VT) in August during which they collected and analyzed lead levels in 300 Flint homes. The researchers said the water in that area was five times more corrosive than other liquid sources in surrounding areas. VT Civil and environmental engineering professor Marc Edwards cited the study at a press conference earlier this month where he warned Flint residents that the water posed a significant danger to public health, unless it's properly filtered.

"This [problem with lead] is occurring because the water is too corrosive," Edwards said. "It has too much salt in it, and there was no plan to control the corrosion when the city began using the river in April 2014. Flint is the only city in American that I'm aware of that does not have a corrosion-control plan in place to stop this kind of problem."

Once lead enters the bloodstream via inhalation of dust, ingestion of food, drinking of water that flows through lead pipes, or hand to mouth activity, it travels to the nerves, kidneys, brain, muscles, and heart. In children and adults, the lead can be stored in the bones and teeth for decades before flowing into the bloodstream again and further damaging organs.

Long-term exposure to lead can cause blood anemia, colic, kidney damage, muscle weakness, brain damage, and death. Left unabated, lead in the bloodstream also affects reaction time, memory, and retention of new information. Hanna-Atisha's report said evidence supported the likelihood of decreased IQ among youngsters with lead/blood levels as low as 4 micrograms per deciliter.

The media shed light on the perils of lead exposure earlier this year in the days after Freddie Gray died under mysterious circumstances while in police custody. In 2008, Gray's family filed a lawsuit against Stanley Rochkind, the owner of a home they rented for four years, arguing that the children's exposure to the substance played a significant part in their educational, behavioral and medical problems — including attention-deficit hyperactivity disorder. The residence in question didn't undergo renovations when Baltimore City officials banned the use of lead-based paint in the 1970s.

On Friday, Hanna-Attisha made an appeal to Michigan lawmakers to prevent similar folly, pointing to the long-term public health effects of lead exposure. She said the issue could no longer be ignored. "It's our professional obligation to care for the children of Flint if we know something," Hanna-Attisha told the Associated Press. "Lead poisoning is irreversible. This is not what our community needs. You have to err on the side of caution [and] educate the public."

http://nbc25news.com/news/local/area-doctors-send-out-warning-about-drinking-flint-water/

Area doctors urge seniors, children, pregnant women to stop drinking Flint water now

BY NICKY ZIZAZA THURSDAY, SEPTEMBER 24TH 2015

FLINT — Today at Hurley Medical Center, doctors warned the public that lead levels in Flint water are too high and many residents should stop drinking it immediately.

Hurley did their own study of Flint water. They have advised senior citizens, children, and pregnant women to stop drinking Flint water right now or they could face irreversible damage. This damage could include memory loss or lowered IQ.

They found double the acceptable amount of lead in Flint water. They tested the specific zip codes done in the recent Virginia Tech study and found excessive blood lead levels in children and babies.

This will affect them not only now, but for decades to come, doctors say. They are advising people to use lead filters.

The head of the Genesee County Health Department, Mark Valacak, said that just looking at children won't identify any of the issues. A blood test is the only way to know for certain.

Dr. Mona Hanna-Attisha, who ran the study, says, "This is not what our community needs."

The Virginia Tech study showed that Flint River water was specifically causing lead in old pipes to be released.

A gofundme account was recently set up by the Virginia Tech group, with the intent of buying the citizens of Flint filters that can remove the lead from the water.

Congressman Dan Kildee issued the following statement:

"Immediate action needs to be taken by the State of Michigan to ensure that relief is provided to people who are concerned about lead levels in their water. Today as part of my ongoing efforts, I talked with the EPA Region 5 Administrator about the State of Michigan providing emergency assistance, including lead-clearing filters and bottled water, until a more permanent solution can be determined.

"This new study by the medical community also raises additional doubts about prior water testing done by the DEQ and EPA that stated the water was in compliance with federal law. I have been completely unsatisfied with their answers to my questions regarding their testing methodology, which is why I have called for additional immediate independent and scientific testing to be done."

Senate Minority Leader Jim Ananich issued the following statement:

"The findings released today are alarming. Our top priority has to be doing everything we can and finding every available resource to ensure access to safe water for Flint residents. I will be leading an effort to raise state, private and philanthropic resources to deliver filters and clean water into the community as quickly as possible.

We must act with urgency to protect Flint residents, especially those most vulnerable to the negative health impacts of lead: children. Anyone with concerns about their water should visit flintwaterinfo.com and contact their physician or the Genesee County Health Department immediately."

http://www.thedailybeast.com/articles/2015/09/24/did-flint-michigan-just-lead-poison-its-children-doctors-think-so.html

Did Flint, Michigan, Just Lead Poison Its Children? Doctors Think So.

By: Russell Saunders 09.24.156:10 PM ET

Since the city switched from Lake Huron to the Flint River as a water source, its children's lead levels have doubled.

According to researchers in Flint, Michigan, blood tests have revealed a distressing conclusion—the tap water residents are drinking is causing elevated lead levels in the city's children.

A new study headed by Dr. Mona Hanna-Attisha, a researcher and director of the pediatric residency program at Hurley Medical Center, compared blood tests taken over a span of months in 2013 with samples taken over a similar span this year. During the time between, the city of Flint changed the source of its drinking water from Lake Huron to treated water from the Flint River.

What they found by comparing the samples is that the percentage of children with lead levels over the acceptable limit nearly doubled after the change. In 2013, about 2 percent of tests had results over 5 micrograms per deciliter (the current "safe" cut-off level, above which steps to identify and mitigate the source of lead exposure are recommended). About 4 percent of the later samples revealed elevated levels. Areas that yielded the highest blood levels had an increase in abnormal samples from 2.5 percent to 6.3 percent.

The consequences of increased lead exposure, especially for younger children, can be dire. Symptoms can include developmental delays, irritability and sluggishness, as well as gastrointestinal problems like poor appetite, abdominal pain, and vomiting. Newborns can experience not only slowed development, but slowed growth.

The new study recommends that Flint city water not be used to mix infant formula, or consumed by pregnant women.

The reason the new water source may be contributing to these elevated lead levels does not have to do with the lead content of the river water itself, but rather its effects on the lead pipes that approximately 15,000 homes in the city are reported to have.

A group of volunteer researchers from Virginia Tech University have been doing ongoing work on the safety of Flint drinking water. Their lead investigator, 2007 MacArthur fellow Dr. Marc Edwards, has noted that treated Flint River water is 19 times as corrosive as water from Lake Huron. This causes the treated water to leach lead from pipes and soldering.

In a separate report, the Virginia Tech team analyzed Flint city water directly and found that 42 percent of the 120 samples collected had lead levels greater than 5 parts per billion, and 20 percent had levels about 15 ppd, the cut-off at which the Environmental Protection Agency requires action.

What is to be done about this problem remains to be seen. Dr. Hanna-Attisha has said that city officials told her a return to Lake Huron water is not financially feasible for Flint. The mayor is asking the state for $10 million in funds to replace lead water service lines.

From: Kelley, Jeff
Sent: Thursday, September 24, 2015 4:39 PM
To: Bassler, Rachel
Subject: Fwd: Several new articles from the Flint Journal

Jeff Kelley
Director, Office of External Communications
U.S. EPA Region 5
ph: 312-353-1159

---------- Forwarded message ----------
From: "**Kelley, Jeff**" <kelley.jeff@epa.gov>
Date: Thu, Sep 24, 2015 at 2:36 PM -0700
Subject: Several new articles from the Flint Journal
To: "Susan Hedman" <Hedman.Susan@epa.gov>, "Robert Kaplan (kaplan.robert@epa.gov)" <kaplan.robert@epa.gov>, "Hyde, Tinka" <hyde.tinka@epa.gov>
Cc: "Poy, Thomas" <poy.thomas@epa.gov>, "Fortin, Denise" <Fortin.Denise@epa.gov>, "Cassell, Peter" <cassell.peter@epa.gov>, "Ronna Beckmann" <Beckmann.Ronna@epa.gov>, "Eileen Deamer" <Deamer.Eileen@epa.gov>

A bunch of clips from the Flint Journal … all apparently posted today:

- City must abandon Flint River as drinking water source amid lead crisis
- Elevated lead found in more Flint kids after water switch, study finds
- Doctors to speak out today on lead in Flint water
- Flint to issue lead in water warning after push from doctors, health officials

- GoFundMe page created by Virginia Tech researcher to buy filters for Flint residents

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http://www.mlive.com/opinion/flint/index.ssf/2015/09/abandon_flint_river_for_drinki.html

City must abandon Flint River as drinking water source amid lead crisis

The following is an opinion of The Flint Journal Editorial Board.

It's time to abandon the Flint River and go back to Lake Huron for Flint's drinking water.

And it's up to Gov. Rick Snyder to do it.

Flint residents were told they wouldn't notice any difference when officials made the switch April 25, 2014, after nearly 50 years of getting water from the Detroit pipeline.

"The water quality speaks for itself," Flint Mayor Dayne Walling said the day of the switch.

Today, that quality is still speaking and it's sounding worse by the day.

A switch that was made to save the cash-strapped city money has turned into a dangerous waiting game while crews build a new pipeline to Lake Huron.

But with the new pipeline still a year away from completion, Flint residents can no longer be asked to drink water that's safety cannot be guaranteed.

Elevated levels of the chemical TTHM in the water have segued into reports of elevated lead in the water. More Flint infants and children are being found with elevated levels of lead in their blood since the city switched to using the Flint River as its water source, according to a study from a Hurley Children's Hospital doctor.

While scientists debate test results, residents in one of the poorest cities in America are forced to either buy bottled water or take their chances with a system they're no longer confident is even safe.

This switch was made while Flint was under control of a state-appointed emergency manager, and we call upon the governor to make this right for Flint citizens by brokering a return to Detroit water that won't bankrupt the city of Flint.

Flint is in a crisis that was created in no small part by Snyder's hand-picked emergency manager and it is Snyder's job to fix this mess.

Officials have said that returning to Detroit water for the short term is not fiscally sound but that is not enough to justify staying with Flint River water. Flint is in the midst of a full-blown water emergency right now and it is incomprehensible that a solution cannot be found with our fellow Michiganders to deliver healthy water.

There is a lake full of healthy drinking water just an hour away and the pipes already in place to bring it here.

Clean water can be ours again.

Make the switch — now — before it's too late.

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http://www.mlive.com/news/flint/index.ssf/2015/09/study_shows_twice_as_many_flin.html

Elevated lead found in more Flint kids after water switch, study finds

By Ron Fonger | rfonger1@mlive.com
The Flint Journal on September 24, 2015 at 2:09 PM, updated September 24, 2015 at 4:31 PM

FLINT, MI -- More Flint infants and children are being found with elevated levels of lead in their blood since the city switched to using the Flint River as its water source, according to a new study by a Hurley Medical Center doctor.

The data show that the percentage of Flint infants and children with above average lead levels has nearly doubled citywide, and has nearly tripled among children in "high risk" areas of lead exposure, according to the study.

The research was based on blood samples from more than 1,700 children living in the city, and underscores Flint's struggles with water quality since switching from Lake Huron water in April 2014. Results of the study were delivered to Flint Mayor Dayne Walling and City Administrator Natasha Henderson this week.

The study includes a recommendation that the city end its use of the Flint River as its drinking water source "as soon as possible."

Among its key findings and recommendations:

- The percentage of children 5 years old and younger with more than 5 micrograms per deciliter of lead in their blood increased from 2.1 percent while Flint purchased Lake Huron water from the city of Detroit to 4 percent after the switch to the Flint River.

- The report also recommends that infant formula not be mixed with Flint tap water, that pregnant mothers not use city water, and that lead-clearing filters be distributed here.

- Areas of Flint with the highest lead levels, according to testing by Virginia Tech University, also showed the most drastic increases in elevated lead levels in children, rising from 2.5 percent to 6.3 percent.

- The study recommends the city declare a health advisory that could trigger additional resources from the federal government.

Findings from the study are expected to be discussed at a news conference scheduled for 3 p.m. today, Sept. 24, at Hurley.

In addition to lead researcher Dr. Mona Hanna-Attisha, representatives of the Greater Flint Health Coalition, Mott Children's Health Center, Hamilton Community Health Network and Genesee County Medical Society are also expected to speak about their concerns about the safety of Flint water.

The data from Flint children reveals an alarming increase in lead poisoning, said Hanna-Attisha, director of Hurley's pediatric residency program and an assistant professor in the Department of Pediatrics & Human Development at Michigan State University's College of Human Medicine.

The study used a database, built from blood tests collected from about 150 doctors and health care providers. It compares the lead levels in the blood of children from Jan. 1, 2013, until Sept. 15, 2013, to levels in samples collected from Jan. 1, 2015, until Sept.

15, 2015.

The city began using the Flint River as its drinking water source in April 2014, and testing by both the city and Virginia Tech have shown that lead is increasingly leaching into the city's water system.

City and state officials have said their own testing inside 169 homes in the city since the switch to river water have registered lead levels below the federal threshold of 15 parts per billion of lead.

Treated river water is 19 times more corrosive than Lake Huron water, according to Professor Marc Edwards of Virginia Tech, causing lead and lead solder in water transmission pipes and home plumbing to seep into the water supply.

Although there are measures that can be taken to reduce corrosiveness in water, including the use of phosphates, Flint had no such plan in place.

"This (higher blood lead levels in children) is exactly what you would expect to see when you put highly corrosive water into a city with so much lead plumbing and pipes," Edwards said today.

"If you look at the level of lead in Flint water, (the study is) perfectly consistent with (my) expectations."

Walling announced earlier this month that the city would speed up efforts to develop a corrosion control plan by the end of the year and has asked Gov. Rick Snyder for $10 million to replace water service lines with lead or lead solder in them.

City and state officials have estimated 15,000 homes in Flint have service lines made with lead.

The Flint Journal-MLive could not reach Walling or Henderson for comment on the new study this morning.

On Wednesday, Sept. 23, the mayor said he would issue an advisory and promote ways to minimize residents' exposure to lead such as flushing pipes before drinking city water.

Hanna-Attisha and Dr. Lawrence Reynolds, president and chief executive officer of Mott Children's Health Center, said they met Walling, Henderson and Department of Public Works Director Howard Croft Monday, Sept. 21, and were told that a return to purchasing water from Detroit would bankrupt the city.

The doctors said they are issuing their recommendations, including an end to use of the Flint River as a water source, because the city has so far failed to act.

"It's our professional obligation to care for the children of Flint (and to tell parents) if we know something," Hanna-Attisha said. "Lead poisoning is irreversible. This is not what our community needs. You have to err on the side of caution (and) educate the public."

State Senate Minority Leader Jim Ananich, D-Flint, issued a statement today, calling the findings of the lead study "alarming."

"Our top priority has to be doing everything we can and finding every available resource to ensure access to safe water for Flint residents," Ananich's statement says. "I will be leading an effort to raise state, private and philanthropic resources to deliver filters and clean water into the community as quickly as possible."

Blood lead levels above 5 micrograms per deciliter are considered elevated by the Center for Disease Control and Prevention and the new study says increasing evidence shows no safe blood lead level.

Lead is a toxic metal that was used for many years in products found in and around homes and may cause health effects such as behavioral problems and learning disabilities, according to the U.S. Environmental Protection Agency.

Reynolds said today in addition to the cost of reconnecting Flint to Detroit water, city and state officials must consider the cost of distributing water with higher lead levels than necessary, including the potential for additional attention deficit hyperactivity disorder, lower IQs, and delinquent behavior.

"No amount of lead is good for human beings," he said. "We cannot predict which child will be affected by high lead levels (and) we have a ... risk we can prevent ...

"you can pay now or pay later," he said.

The city began using the Flint River as a water source for the first time in more than 50 years in April 2014 -- a decision made by state-appointed emergency manager Darnell Earley.

Former emergency manager Jerry Ambrose, who replaced Earley, has said returning Flint to the Detroit-supplied Lake Huron water would be cost-prohibitive, resulting in an increase of about 30 percent in water rates.

Walling has also opposed a short-term contract to buy water from Detroit.

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http://www.mlive.com/news/flint/index.ssf/2015/09/doctors_health_officials_to_sp.html

Doctors to speak out today on lead in Flint water

By Ron Fonger | rfonger1@mlive.com

The Flint Journal on September 24, 2015 at 12:40 PM, updated September 24, 2015 at 3:24 PM

FLINT, MI -- Representatives of several Flint medical institutions, including Hurley Medical Center and Mott Children's Health Center, say they will discuss their concerns regarding lead levels in the city's drinking water at a news conference today, Sept. 24.

Hurley said in a news release that it will host the groups at the 3 p.m. news conference and that the meeting will also include representatives of the Flint Health Coalition, Hamilton Community Health Network and Genesee County Medical Society.

The news conference comes one day after Mayor Dayne Walling told The Flint Journal-MLive that the city would issue a lead advisory in the wake of the Greater Flint Health Coalition urgently asking the city to take that step.

The Journal could not reach Walling or City Administrator Natasha Henderson for comment today.

Walling and other city officials met with representatives of the coalition this week, hearing their concerns about the safety of Flint water.

The coalition issued a statement saying "not enough was being done to alert the public to potential risks of consuming Flint city water that could lead to elevated levels of lead."

Researchers from Virginia Tech University reported this month that their testing of Flint water in homes shows a far-reaching problem with lead.

Ten percent of Flint homes tested by Virginia Tech had 25 parts per billion of lead or more, far more than the allowable level -- 15 ppb -- set in federal guidelines, according to the university researchers.

City and state officials have said their testing shows Flint's water supply meets all health and safety regulations, never rising above 11 ppb in more than 10 percent of homes during the last 16 months.

Data from the state Department of Environment Quality shows lead levels have spiked since the city began using the Flint River as its water source in April 2014 but remained within federal thresholds for lead.

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http://www.mlive.com/news/flint/index.ssf/2015/09/flint_will_issue_lead_advisory.html

Flint to issue lead in water warning after push from doctors, health officials

By Ron Fonger | rfonger1@mlive.com

The Flint Journal on September 24, 2015 at 5:50 AM, updated September 24, 2015 at 9:59 AM

FLINT, MI -- The city of Flint is expected to advise its water customers on ways to minimize exposure to lead in its tap water -- particularly for children -- after a group that includes doctors and health officials strongly suggested the step.

Flint Mayor Dayne Walling confirmed the move on Wednesday, Sept. 23, after The Flint Journal-MLive learned the Greater Flint Health Coalition approved a resolution two days prior urgently asking the city to issue the advisory.

Representatives of the coalition met privately with Walling and other city officials to express their concerns about the safety of Flint water, and issued a statement saying "not enough was being done to alert the public to potential risks of consuming Flint city water that could lead to elevated levels of lead."

Walling's statement said the city "will be issuing an advisory" on the matter "in cooperation with health partners promoting ways to minimize the exposure to lead such as flushing pipes when the water has been sitting." He did not specify when the advisory would be issued.

Walling, who earlier this month asked Gov. Rick Snyder for $30 million for Flint's infrastructure, including $10 million to replace lead service lines to homes, said in an email that he "will continue to pursue funding for a comprehensive healthy homes initiative that addresses lead in paint and pipes."

"We have to get the lead out of our community to eliminate the threat of childhood lead poisoning," the statement says. "I am extremely concerned to hear from doctors about any elevated blood lead levels in Flint's children."

The Journal could not immediately reach Walling for more information on the concerns expressed to him by doctors about lead.

Kirk D. Smith, president and chief executive officer of the Greater Flint Health Coalition, and state Senate Minority Leader Jim Ananich, the chairman of the group's board of directors, issued a statement to The Journal about the coalition's recommendation on issuing precautions.

"As a coalition of concerned physicians, health care professionals and county leaders, we are compelled to inform the public when there is a possible threat to their health so they can take appropriate precautions and actions to protect themselves and their families," the joint statement says.

"At our last meeting and in recent days we have heard from numerous physicians who shared strong concerns that not enough was being done to alert the public to potential risks of consuming Flint city water that could lead to elevated levels of lead."

A resolution approved by the nonprofit coalition's board of directors, which includes representatives of Flint area hospitals, universities, physicians and unions, comes after researchers from Virginia Tech University reported their testing here shows a far-reaching problem with lead in water.

Ten percent of Flint homes tested by Virginia Tech had 25 parts per billion of lead or more, far more than the allowable level -- 15 ppb -- set in federal guidelines, according to the university researchers.

City and state officials have said their testing shows Flint's water supply meets all health and safety regulations, never rising above 11 ppb in more than 10 percent of homes during the last 16 months, but data from the state Department of Environment Quality shows lead levels have spiked since the city began using the Flint River as its water source in April 2014.

At the urging of state and federal officials, the city announced three weeks ago that it would speed up the development of plans aimed at making Flint water less corrosive.

Professor Marc Edwards of Virginia Tech has said treated river water is currently far more corrosive than water the city had used for decades -- Lake Huron water that was treated and piped here by the city of Detroit.

Edwards has criticized the city and the state for not having developed a plan for reducing the corrosiveness of Flint's water because an estimated 15,000 homes in the city have lead or lead solder in service lines and plumbing, making the homes much more susceptible to lead leaching into water.

City Councilman Scott Kincaid, also a member of the GFHC, said he supported the organization's request for further action -- particularly after physicians raised concerns about how high lead levels could affect infants and young children.

"I'm supporting the resolution. I think we need to advise people that there is a potential concern," Kincaid said. "Lead isn't good for anybody, but the effect on infants" is especially disturbing.

Although the city has yet to issue its lead advisory, Walling's mention of allowing water to flush through pipes is the same advice given by Virginia Tech earlier this month.

Researchers at the university have also recommended that infants not be fed formula made with unfiltered Flint tap water and that residents who are not flushing water for five minutes before using it for drinking or cooking should use a filter certified to remove lead.

The Journal could not reach Dr. Lawrence Reynolds, president and CEO of Mott Children's Health Center, for comment Wednesday. Other coalition members said Reynolds led the push for additional, quick action by the city.

Lead is a toxic metal that was used for many years in products found in and around homes, according to the U.S. Environmental Protection Agency. Even at low levels, lead may cause health effects such as behavioral problems and learning disabilities.

Current regulations for lead in water began in 1992 and require a limited amount of testing to measure the degree to which lead leaches into tap water after flowing through lead service lines and lead solder in home plumbing.

Flint has struggled with its water quality since switching to the Flint River as its primary water source in April 2014. Previously, the city had purchased water through the city of Detroit, which got its water from Lake Huron.

Flint was required to step up its testing of water in homes after it shifted to the Flint River, which is intended to be a temporary move as the city and Genesee County are partners in building a new water pipeline to Lake Huron through a partnership called the Karegnondi Water Authority.

The city has been using -- and Walling and state emergency managers have supported continuing to use -- the Flint River as a stopgap water source until the KWA pipeline is expected to be completed in 2016.

In state testing of city water samples, Flint has stayed below the federal threshold for lead, with less than 10 percent of tap water samples exceeding 15 ppb.

Water systems can be required to take steps like making water less corrosive or replacing lead service lines if sampling shows such elevated lead levels.

But after the Virginia Tech testing showed lead was much more prevalent than Flint's testing showed, Edwards and U.S. Rep. Dan Kildee each raised doubts about the water testing by the city and DEQ.

Kildee said in a news release Sept. 21 that "the city, DEQ and (U.S. Environmental Protection Agency) have not adequately answered my questions on their testing methods to ensure the safety of Flint's water."

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http://www.mlive.com/news/flint/index.ssf/2015/09/gofundme_page_created_by_virgi.html

GoFundMe page created by Virginia Tech researcher to buy filters for Flint residents

By Amanda Emery | aemery@mlive.com

The Flint Journal Follow on Twitter on September 23, 2015 at 5:00 AM, updated September 23, 2015 at 5:03 AM

FLINT, MI -- A Virginia Tech University researcher has started a GoFundMe campaign in an effort to purchase lead filters for Flint water customers in need.

Anurag Mantha, a graduate student at Virginia Tech, said he has been in charge of the Flint Water Study Group and the community outreach for the group. Mantha said his job has been to analyze water samples and call people with high levels of lead to tell them their water is unsafe to drink.

"So I have been calling people and they have been telling me that they couldn't afford to buy filters." Mantha said. "That's one of the options we give to the people who have high amounts of lead. We tell them to buy NSF (National Sanitation Foundation) certified filters and they said they couldn't afford to buy them because their water bills were so high already and it was just a financial burden on them."

Virginia Tech researchers have said their testing shows a serious problem with lead in Flint water including 10 percent of homes that had 25 parts per billion of lead or more -- far more than the allowable level -- 15 ppb -- set in federal guidelines.

Mantha said he approached Professor Marc Edwards, who is heading up the study in Flint, and said he wanted to start a GoFundMe campaign to purchase filters for Flint residents in need. He said the campaign's goal is set at $25,000, but he isn't waiting to hit the goal to start helping residents out.

"Once we get things finalized we'll use the first $1,000 that we raise and kick the campaign off in Flint." Mantha said. "So that hopefully people will see that the money they are donating is doing some good."

The first priority in the giveaway will be single mothers, Manth said. He then plans to contact the Concerned Pastors for Social Action to determine the residents who are most in need.

Mantha said the cost of one filter is roughly $40 and he is working with companies to purchase the filters. The NSF filters will remove lead from the water, he said.

As of Tuesday, Sept. 23, the campaign had already raised $985. One-hundred percent of the funds raised will be used to buy the NSF filters.

For more information on the GoFundMe campaign, click here.

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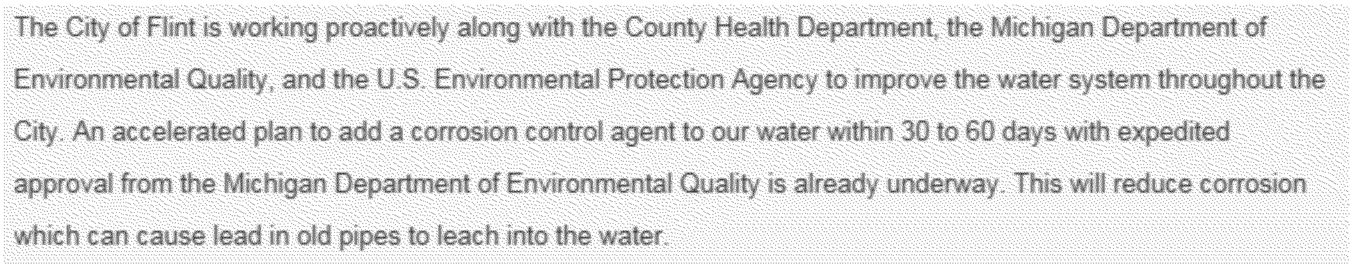
Jeff Kelley
Director, Office of External Communications
U.S. EPA Region 5
ph: 312-353-1159

To: Deltoral, Miguel[deltoral.miguel@epa.gov]; Poy, Thomas[poy.thomas@epa.gov]; Bair, Rita[bair.rita@epa.gov]; Crooks, Jennifer[crooks.jennifer@epa.gov]; Shoven, Heather[shoven.heather@epa.gov]
Cc: Schock, Michael[Schock.Michael@epa.gov]
From: Porter, Andrea
Sent: Fri 9/25/2015 9:16:23 PM
Subject: flint: link to city lead advisory (says corrosion control inhibitor to be added in 30-60days); genesee county health dept fact sheet (includes old lead-free definition)

Hi All,

Here's a link to the City's website with information on the Lead Advisory: https://www.cityofflint.com/2015/09/25/city-of-flint-issues-lead-advisory/

Part of the advisory includes a time frame of 30-60 days for when corrosion control inhibitor will be added:



The City of Flint is working proactively along with the County Health Department, the Michigan Department of Environmental Quality, and the U.S. Environmental Protection Agency to improve the water system throughout the City. An accelerated plan to add a corrosion control agent to our water within 30 to 60 days with expedited approval from the Michigan Department of Environmental Quality is already underway. This will reduce corrosion which can cause lead in old pipes to leach into the water.

The Genesee County fact sheet isn't as nicely laid out as the one from the Sen. Ananich's website, and it refers to the old lead-free standard for faucets: http://www.gchd.us/docs/Popular_Pages/GCHD_Lead_in_Water_Fact_Sheet__2_.pdf

What can I do to reduce or eliminate lead in my tap water?

Flush your cold-water pipes by running the water for approximately 5 minutes. The longer the water has been sitting in the pipes, the more lead it may contain. You can fill containers for later use, after the flushing process. Use only water from the cold-water tap for drinking, cooking, and especially for making baby formula. Hot water is likely to contain higher levels because it dissolves more lead.
You may choose to install a water filter that is NSF-certified for lead removal. If a water filter is installed replace filters at least as often as recommended by the manufacturer.

Buy a lead-free faucet. The legal definition of "lead-free" still allows brass faucets to contain up to 8 percent lead. However, faucets marked with "NSF 61/9" and/or "California Proposition 65" meet stricter limits. Regularly clean particles from faucet aerators.

Thanks,

Andrea Porter

Environmental Engineer

Ground Water & Drinking Water Branch

U.S. EPA, Region 5 (WG-15J)

77 W. Jackson Blvd.

Chicago, IL 60604

Phone: 312-886-4427

Fax: 312-697-2656

To: Burke, Thomas[Burke.Thomas@epa.gov]
Cc: Meiburg, Stan[Meiburg.Stan@epa.gov]; Fritz, Matthew[Fritz.Matthew@epa.gov]; Kopocis, Ken[Kopocis.Ken@epa.gov]; Vaught, Laura[Vaught.Laura@epa.gov]; Grevatt, Peter[Grevatt.Peter@epa.gov]; Reynolds, Thomas[Reynolds.Thomas@epa.gov]; Rupp, Mark[Rupp.Mark@epa.gov]
From: Hedman, Susan
Sent: Sat 9/26/2015 10:27:41 PM
Subject: Re: CONFIDENTIAL: DELIBERATIVE--DO NOT RELEASE

Thanks Stan -- this is an excellent summary and I agree with both of Tom's suggestions. Two additional points:

1. I don't think it's accurate to characterize Implementing corrosion control as a "possible" additional measure. The City and MDEQ have made clear that this is going to occur asap -- it will just take a while to work. The real focus now is on finding money to pay for interim measures to protect vulnerable populations.

2. Flint River water isn't necessarily more corrosive than Lake Huron water -- it's just that the Lake Huron water that the City used to receive from Detroit had been treated with orthophosphate. Flint needs to add orthophosphate to the Flint River water being used now and will need to add orthophosphate to Lake Huron water when they switch over.

BTW. I have reached out to Dan Wyant -- but have not yet heard back from him.

Sent from my iPhone

> On Sep 26, 2015, at 4:56 PM, Burke, Thomas <Burke.Thomas@epa.gov> wrote:
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> Thomas A. Burke, PhD, MPH
> Deputy Assistant Administrator
> EPA Science Advisor
> Office of Research and Development
> 202-564-6620
> burke.thomas@epa.gov
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>> Stan
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>> CONFIDENTIAL: DELIBERATIVE--DO NOT RELEASE
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>> Summary Notes on Flint Drinking Water Call 9-26-2015 3:00 p.m.
>>
>> Participants:
>>
>> Susan Hedman
>> Tom Burke
>> Peter Grevatt
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>> The Mayor has asked for technical assistance from EPA and has talked with both leadership in Region 5 and the Office of Water, and we have offered technical assistance from ORD. The Mayor has requested additional funding assistance from Governor Snyder but as yet there has been no response from the State to this request. Congressman Dan Kildee has written EPA, FEMA and CDC/HHS also asking about funding assistance. Neither FEMA nor CDC/HHS has such funds available.
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>> Flint, Michigan is a city with a current population of about 99,000. In April, 2014 Flint switched its source drinking water supply from water supplied by the city of Detroit (from Lake Huron) to water from the Flint River. This was a measure to save money (about $1.5 million a month) until Flint could complete its own pipeline to Lake Huron, a project expected to be completed by the end of 2016. At the time the switch was made, Flint was effectively in receivership and the switch was part of cost saving measures imposed by the city's receiver, appointed by the Governor. (Note: the city exited receivership earlier this year but is still in severe financial straits).
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To: Burke, Thomas[Burke.Thomas@epa.gov]
Cc: Meiburg, Stan[Meiburg.Stan@epa.gov]; Fritz, Matthew[Fritz.Matthew@epa.gov]; Kopocis, Ken[Kopocis.Ken@epa.gov]; Vaught, Laura[Vaught.Laura@epa.gov]; Grevatt, Peter[Grevatt.Peter@epa.gov]; Reynolds, Thomas[Reynolds.Thomas@epa.gov]; Rupp, Mark[Rupp.Mark@epa.gov]
From: Hedman, Susan
Sent: Sat 9/26/2015 10:46:27 PM
Subject: Re: CONFIDENTIAL: DELIBERATIVE--DO NOT RELEASE

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>>>
>>> Sent from my iPad

To: Hedman, Susan[hedman.susan@epa.gov]
Cc: Burke, Thomas[Burke.Thomas@epa.gov]; Fritz, Matthew[Fritz.Matthew@epa.gov]; Kopocis, Ken[Kopocis.Ken@epa.gov]; Vaught, Laura[Vaught.Laura@epa.gov]; Grevatt, Peter[Grevatt.Peter@epa.gov]; Reynolds, Thomas[Reynolds.Thomas@epa.gov]; Rupp, Mark[Rupp.Mark@epa.gov]
From: Meiburg, Stan
Sent: Sat 9/26/2015 10:48:06 PM
Subject: Re: CONFIDENTIAL: DELIBERATIVE--DO NOT RELEASE

Excellent suggestions, everyone! After I finish dinner (!) I'll work these in.

Stan

Sent from my iPhone

> On Sep 26, 2015, at 6:27 PM, Hedman, Susan <hedman.susan@epa.gov> wrote:
>
> Thanks Stan -- this is an excellent summary and I agree with both of Tom's suggestions. Two additional points:
>
> 1. I don't think it's accurate to characterize Implementing corrosion control as a "possible" additional measure. The City and MDEQ have made clear that this is going to occur asap -- it will just take a while to work. The real focus now is on finding money to pay for interim measures to protect vulnerable populations.
>
> 2. Flint River water isn't necessarily more corrosive than Lake Huron water -- it's just that the Lake Huron water that the City used to receive from Detroit had been treated with orthophosphate. Flint needs to add orthophosphate to the Flint River water being used now and will need to add orthophosphate to Lake Huron water when they switch over.
>
> BTW. I have reached out to Dan Wyant -- but have not yet heard back from him.
>
> Sent from my iPhone
>
>> On Sep 26, 2015, at 4:56 PM, Burke, Thomas <Burke.Thomas@epa.gov> wrote:
>>
>> Looks good I would include mention of the physicians and ACLU as well. I would also include the expressed concern about the increase in disinfection byproducts related to the source water switch, supporting a thorough evaluation of water treatment needs.
>>
>> Thomas A. Burke, PhD, MPH
>> Deputy Assistant Administrator
>> EPA Science Advisor
>> Office of Research and Development
>> 202-564-6620
>> burke.thomas@epa.gov
>>
>>> On Sep 26, 2015, at 5:31 PM, Meiburg, Stan <Meiburg.Stan@epa.gov> wrote:
>>>
>>> Here are my notes--comments welcome. I would like to get this to the Administrator this evening.
>>>
>>> Stan
>>>
>>> CONFIDENTIAL: DELIBERATIVE--DO NOT RELEASE
>>>
>>> Summary Notes on Flint Drinking Water Call 9-26-2015 3:00 p.m.

>>>
>>> Participants:
>>>
>>> Susan Hedman
>>> Tom Burke
>>> Peter Grevatt
>>> Mark Rupp
>>> Stan Meiburg
>>> Matt Fritz
>>>
>>> Current status:
>>>
>>> According to press reports, the Mayor of Flint, Michigan, Dayne Walling, has stated publicly that the city's use of the Flint River as a drinking water source has resulted in an increased risk of lead leaching into drinking water because of the corrosiveness in the water supply coming from the Flint River. An advisory commission to the mayor of health professionals has also urged that additional actions need to be taken quickly. Outside parties, including a professor at Virginia Tech who has been involved in other city drinking water cases, including Washington, DC, have expressed concern that the increased corrosiveness of the Flint River source water is increasing the potential for higher levels of lead in blood for infants and small children, and has publicly released a study that makes this claim based on sampling for water and children's blood lead levels in Flint.
>>>
>>> There seems to be general agreement that there is a need for additional measures to control lead levels in the Flint, Michigan water system and to address public health concerns, but the question of their cost and how these will be paid for remains unsettled.
>>>
>>> The Mayor has asked for technical assistance from EPA and has talked with both leadership in Region 5 and the Office of Water, and we have offered technical assistance from ORD. The Mayor has requested additional funding assistance from Governor Snyder but as yet there has been no response from the State to this request. Congressman Dan Kildee has written EPA, FEMA and CDC/HHS also asking about funding assistance. Neither FEMA nor CDC/HHS has such funds available.
>>>
>>> Background
>>>
>>> Flint, Michigan is a city with a current population of about 99,000. In April, 2014 Flint switched its source drinking water supply from water supplied by the city of Detroit (from Lake Huron) to water from the Flint River. This was a measure to save money (about $1.5 million a month) until Flint could complete its own pipeline to Lake Huron, a project expected to be completed by the end of 2016. At the time the switch was made, Flint was effectively in receivership and the switch was part of cost saving measures imposed by the city's receiver, appointed by the Governor. (Note: the city exited receivership earlier this year but is still in severe financial straits).
>>>
>>> At the time the switch was made, it was understood by the city and the state that because the corrosivity of Flint River water was greater than Lake Huron, and because there are lead pipes and fixtures and lead solder for copper pipes in the distribution system and households in Flint, there was a risk of increased mobilization of lead in home water supplies. The state directed the city to monitor the levels of lead in household systems following the switch to determine what additional corrosion controls might be needed.
>>>
>>> Since the switch there has been increasing concern that lead concentrations in Flint drinking water are in fact increasing, at least in some parts of the drinking water system. The populations of greatest concern are infants and small children in parts of Flint that have the highest amount of lead plumbing in the distribution system (this is not known with precision although there appears to be some data). Though the magnitude of the increasing concentrations, and how concentrations relate to existing health criteria, remain in dispute, there appears to be general agreement that additional mobilization of lead is occurring, and the city is now agreeing that additional measures are needed.

>>>
>>> The range of possible additional measures includes the following:
>>>
>>> -- The use of additional corrosion control techniques, specifically the addition of chemicals to reduce the corrosivity of the water and allow a biological film to grow back that will minimize mobilization of lead from pipes, fixtures and solder. Two notes on this are relevant: first, it will take time for the film to regrow, and second, the balancing of the water chemistry of chemical addition so that other detrimental effects do not occur, such as the creation of additional disinfection byproducts, will also take some time.
>>>
>>> -- In the short term, supplying bottled drinking water and/or formula to households which are at greatest immediate risk of lead exposures. Priorities would be households with infants/small children in parts of Flint with the greatest exposure risk. It is not clear how many households this would cover.
>>>
>>> -- Another possible short term measure would be the use of Point of Service filters to reduce lead concentrations in drinking water. Such filters would be most useful in reducing lead exposure from small lead particles dislodged in the distribution system, not from dissolved lead, but given the age of Flint's distribution system this could provide some benefit.
>>>
>>> -- The city is already advising households to run taps for 5 minutes before using water for drinking, as this reduces lead concentrations as compared to first use water.
>>>
>>> -- Finally, the option of reconnecting the city's system to Detroit during the period before completion of the Flint pipeline to Lake Huron has also surfaced. This would also take a period of time to be effective in reducing concentrations for the same reason as the use of corrosion control techniques.
>>>
>>> Considerations Moving Forward
>>>
>>> -- Drinking water systems are historically managed between State and local health/environment departments. In Michigan, MDEQ is the responsible SDWA state agency. It appears to this point that the State health department has not been heavily involved. Tom makes the point that in other states, the health department's assessment of the degree of public health risk is highly influential within the state.
>>>
>>> -- Mayor Walling is in a contentious reelection campaign.
>>>
>>> -- Marc Edwards, the Virginia Tech professor, has reached out to EPA staff in Region 5 and in Headquarters, criticizing Flint's sampling program and expressing his opinion that "This is an unprecedented situation and EPA needs to take this seriously. Now." And "I believe someone at HQ or Region 5 should immediately take decisive action on this issue to protect the public.
>>>
>>> -- Prospects for class action litigation are being explored in Flint.
>>>
>>> -- We are not certain what additional actions the State of Michigan is contemplating. Susan is reaching out this weekend to the Director of Michigan DEQ to gain additional insight on this point. There is a sense that the state knows they bear some responsibility because of the financial dynamics of the source water switch, but what this may specifically mean is unclear.
>>>
>>> -- We are exploring whether the Drinking Water State Revolving Loan Fund could support the acquisition of Point of Use filters. Cost of this is unclear, and any equipment would need monthly filter replacement. Early assessment is that this would be precedent setting, and it is not clear we have the legal authority under the Safe Drinking Water Act to do this.
>>>
>>> -- Issues with past mismanagement (in prior administrations) of Flint water utility revenues complicate these discussions.
>>>
>>>
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>>> Sent from my iPad

To: Hyde, Tinka[hyde.tinka@epa.gov]; Henry, Timothy[henry.timothy@epa.gov]
Cc: Williams, Felicia[Williams.Felicia@epa.gov]
From: Hedman, Susan
Sent: Sun 9/27/2015 8:29:09 PM
Subject: MDEQ request for technical assistance

I had a conversation with Dan Wyant today about the situation in Flint. We talked about the need for expedited implementation of corrosion control and making sure that appropriate testing protocols are used. He asked that EPA provide technical assistance to MDEQ to do this. Would you please arrange for the ORD people on the Flint Technical Advisory Committee to reach out to provide direct assistance to MDEQ, as well?

Also -- please work with Felicia to find a time at the end of the day tomorrow to check in on Flint.

Thanks.

Sent from my iPhone

To: Porter, Andrea[porter.andrea@epa.gov]; Poy, Thomas[poy.thomas@epa.gov]; Bair, Rita[bair.rita@epa.gov]; Crooks, Jennifer[crooks.jennifer@epa.gov]; Shoven, Heather[shoven.heather@epa.gov]
Cc: Schock, Michael[Schock.Michael@epa.gov]
From: Deltoral, Miguel
Sent: Mon 9/28/2015 11:35:37 AM
Subject: Re: flint: link to city lead advisory (says corrosion control inhibitor to be added in 30-60days); genesee county health dept fact sheet (includes old lead-free definition)

Expedited CCT!?

This is how the problem started in the first place - a light-speed rush to get off the Detroit system before they could actually gear up to learn how to run a river source. If that timeline is accurate, it seems their objective is not to fix the problem, but to stop the criticism.

My fear here is that they keep saying they are working with EPA when I know they have not had one technical advisory meeting that includes Mike/Darren yet. To the contrary, from the city's email, they scheduled a meeting without consulting EPA and Mike cannot even be there (non-negotiable date/time).

Mike can correct me if I'm wrong, but I am unaware of any other technical meetings between ORD, Flint and MDEQ. This Flint/DEQ decision (if true) is being pushed out as if EPA is part of this process when I don't think we have even been provided any data to look at.

Miguel A. Del Toral
Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

From: Porter, Andrea
Sent: Friday, September 25, 2015 04:16 PM
To: Deltoral, Miguel; Poy, Thomas; Bair, Rita; Crooks, Jennifer; Shoven, Heather
Cc: Schock, Michael
Subject: flint: link to city lead advisory (says corrosion control inhibitor to be added in 30-60days); genesee county health dept fact sheet (includes old lead-free definition)

Hi All,

Here’s a link to the City’s website with information on the Lead Advisory:
https://www.cityofflint.com/2015/09/25/city-of-flint-issues-lead-advisory/

Part of the advisory includes a time frame of 30-60 days for when corrosion control inhibitor will be added:

> The City of Flint is working proactively along with the County Health Department, the Michigan Department of Environmental Quality, and the U.S. Environmental Protection Agency to improve the water system throughout the City. An accelerated plan to add a corrosion control agent to our water within 30 to 60 days with expedited approval from the Michigan Department of Environmental Quality is already underway. This will reduce corrosion which can cause lead in old pipes to leach into the water.

The Genesee County fact sheet isn’t as nicely laid out as the one from the Sen. Ananich’s website, and it refers to the old lead-free standard for faucets:
http://www.gchd.us/docs/Popular_Pages/GCHD_Lead_in_Water_Fact_Sheet__2_.pdf

What can I do to reduce or eliminate lead in my tap water?

Flush your cold-water pipes by running the water for approximately 5 minutes. The longer the water has been sitting in the pipes, the more lead it may contain. You can fill containers for later use, after the flushing process. Use only water from the cold-water tap for drinking, cooking, and especially for making baby formula. Hot water is likely to contain higher levels because it dissolves more lead.
You may choose to install a water filter that is NSF-certified for lead removal. If a water filter is installed replace filters at least as often as recommended by the manufacturer.

Buy a lead-free faucet. The legal definition of "lead-free" still allows brass faucets to contain up to 8 percent lead. However, faucets marked with "NSF 61/9" and/or "California Proposition 65" meet stricter limits. Regularly clean particles from faucet aerators.

Thanks,

Andrea Porter

Environmental Engineer

Ground Water & Drinking Water Branch

U.S. EPA, Region 5 (WG-15J)

77 W. Jackson Blvd.

Chicago, IL 60604

Phone: 312-886-4427

Fax: 312-697-2656

To: Poy, Thomas[poy.thomas@epa.gov]; Damato, Nicholas[damato.nicholas@epa.gov]; Bair, Rita[bair.rita@epa.gov]; Deltoral, Miguel[deltoral.miguel@epa.gov]; Crooks, Jennifer[crooks.jennifer@epa.gov]; Glowacki, Joanna[glowacki.joanna@epa.gov]; Porter, Andrea[porter.andrea@epa.gov]; King, Carol[King.Carol@epa.gov]
From: Shoven, Heather
Sent: Mon 9/28/2015 1:08:32 PM
Subject: FYI: Recent Flint Articles + 9/25/15 MLive article: Flint River switch has increased risk of lead in water, mayor says

Here are weekend Flint articles –

- Sep 27: Lawyer says lead poisoning in Flint kids could revive lawsuit against city. *NPR / Michigan Radio*
- Sep 26: State data confirms higher blood-lead levels in Flint kids. *Detroit Free Press*
- Sep 26: Flint community schools want kids to bring bottled water to school. *NPR / Michigan Radio*
- Sep 26: Shortfalls of EM law writ large in Flint water crisis. *Detroit Free Press*
- Sep 25: Researchers: Lead levels up after Flint switches to cheaper water supply. *Al Jazeera America*
- Sep 25: Water quality issues in Flint. *WXYZ Channel 7*
- Sep 25: Mayoral challenger speaks out on lead levels in Flint water. *mLive*
- Sep 25: Flint daycares take water precautions. *ABC12*
- Sep 25: City of Flint issues lead advisory after doctors report spike in blood lead levels in children. *ABC12*
- Sep 25: Have you missed parts of the Flint water story? Here's a quick rundown. *NPR / Michigan Radio*
- Sep 25: Flint makes lead advisory official, suggests water filters and flushing. *mLive*

- Sep 25: City issues lead advisory over pipe corrosion. *WNEM*
- Sep 25: Flint public school students told to bring own water to school. *mLive*

http://www.mlive.com/news/flint/index.ssf/2015/09/mayor_says_flint_river_has_inc.html#incart_related_stories

Flint River switch has increased risk of lead in water, mayor says

FLINT, MI -- Mayor Dayne Walling pushed the ceremonial button to change the city's water source from Detroit to the Flint River in April 2014.

Today, Sept. 25, Walling said he believes the city's use of the river has resulted in an increased risk of **lead leaching into drinking water** because of the river water's corrosiveness and said he would consider support for reconnecting Flint to the Detroit water system again.

Walling, **speaking at a news conference** to issue a lead advisory for the city, said he's willing to discuss buying Detroit-treated Lake Huron water again, but he said that decision rests with Gov. Rick Snyder.

His comments came the day after a Hurley Medical Center doctor released a study showing increasing incidents of elevated blood lead levels in Flint children.

Flint's long-term drinking water plan is still to eventually draw water from a new pipeline to Lake Huron that's being built by the city and Genesee County through the Karegnondi Water Authority.

But the pipeline isn't expected to be completed until sometime in 2016 and Flint has struggled with water quality and treatment since switching to the Flint River in the interim.

"I think that given the variety of information that's available that there is an increased risk (using the river), and that's why the city is issuing a lead advisory and encouraging every household to take these proactive steps," Walling said.

While the mayor left the door open to switching water sources -- at an estimated cost of $1.5 million per month, City Administrator Natasha Henderson and Brad Wurfel, a spokesman for the state Department of Environmental Quality, said Flint can't afford such a change.

The city's lead advisory includes recommendations from the Genesee County Health Department, suggesting residents flush cold water pipes by running water approximately five minutes before using; not using hot water for drinking, cooking or mixing infant formula; and installing water filters certified by the National Science Foundation for lead removal.

Although Walling said it would be technically possible to change the city's water source, Wurfel said it is not a realistic financially and unnecessary considering Flint's water meets the standards of the federal Safe Drinking Water Act.

Dave Murray, a spokesman for Snyder, did not directly address the issue of reconnecting to Detroit for water, but issued a statement saying, "The governor and state agencies continue to work with city and community leaders on a variety of approaches to help residents and ensure they have clean, safe water."

Asked if reconnection to the Detroit water system was still an option, Murray said, "The governor and representatives from state agencies continue to work with city leaders on a variety of topics related to Flint and its infrastructure challenges."

"It's important that residents have access to accurate information, and know where they can get their homes tested and have access to medical tests that will ease their minds," Murray's statement says. "Both the Department of Environmental Quality and the Department of Health and Human Services are working closely with the city and evaluating data to assist the Flint leaders as they make decisions for their city moving forward."

Walling said discussions with the state about reconnecting Flint to the Detroit water system have been ongoing, occurring as recently as Monday, Sept. 21, and could continue.

"Are there discussions about Detroit? The answer is yes," said Walling, who said he doesn't expect to initiate further discussions.

Walling has been lobbying the governor instead for $30 million in infrastructure funding, $10 million of which would be dedicated to replacing lead service lines leading to individual homes.

Lead leaching has been identified in the city's testing of water inside homes since the switch to the Flint River.

Lead levels have remained within allowable thresholds during the last 16 months, but the city's own testing shows lead levels have been rising since the city began using the Flint River for water.

Water testing by Virginia Tech university has shown even higher lead levels and researchers there have blamed the corrosiveness of river water and the large amount of lead and lead solder in Flint pipes and plumbing for the resulting lead levels.

On Thursday, Set. 25, a Hurley Medical Center doctor released a study showing increasing incidents of elevated blood lead levels in Flint children.

A spokeswoman for the state Department of Department of Health and Human Services has questioned that study and said blood lead levels in Flint have remained fairly steady for children under 16 years old since the city switched from Lake Huron water to the river.

Walling said today that the governor "needs to work harder to identify (necessary) resources" to help Flint with water issues.

"The governor has a substantial responsibility here," he said.

Snyder appointed a succession of emergency managers to run Flint after declaring a financial emergency here in 2011.

One of them -- Darnell Earley -- made the decision to use the Flint River as the city's drinking water source rather negotiating a new contract to continue buying Lake Huron water from Detroit in the short-term.

Since the switch to the river, individuals and groups like the Concerned Pastors for Social Action have lobbied to end the use of the river because they consider lake water safer and of higher quality.

In January, as Flint struggled to cut total trihalomethanes (TTHM) in treated river water, Sue McCormick, director of the Detroit Water and Sewerage Department, said she was willing to talk about providing emergency water to Flint -- even without a long-term deal between the two cities.

Greg Eno, a spokesman for DWSD, said he could not immediately say whether that offer remains as Detroit transitions to becoming part of a regional water authority.

To: Hyde, Tinka[hyde.tinka@epa.gov]
From: Henry, Timothy
Sent: Mon 9/28/2015 1:35:22 PM
Subject: FW: MDEQ request for technical assistance

Have you sent this to Tom?

Tim Henry
Deputy Director, Water Division
U.S. EPA (W-15J)
77 W. Jackson Blvd., Chicago, IL 60604-3590
Phone: 312.886.6107 Fax: 312.692.2578

-----Original Message-----
From: Hedman, Susan
Sent: Sunday, September 27, 2015 3:29 PM
To: Hyde, Tinka; Henry, Timothy
Cc: Williams, Felicia
Subject: MDEQ request for technical assistance

I had a conversation with Dan Wyant today about the situation in Flint. We talked about the need for expedited implementation of corrosion control and making sure that appropriate testing protocols are used. He asked that EPA provide technical assistance to MDEQ to do this. Would you please arrange for the ORD people on the Flint Technical Advisory Committee to reach out to provide direct assistance to MDEQ, as well?

Also -- please work with Felicia to find a time at the end of the day tomorrow to check in on Flint.

Thanks.

Sent from my iPhone

To: Hedman, Susan[hedman.susan@epa.gov]; Henry, Timothy[henry.timothy@epa.gov]
Cc: Williams, Felicia[Williams.Felicia@epa.gov]
From: Hyde, Tinka
Sent: Mon 9/28/2015 1:37:27 PM
Subject: RE: MDEQ request for technical assistance

Will do

-----Original Message-----
From: Hedman, Susan
Sent: Sunday, September 27, 2015 3:29 PM
To: Hyde, Tinka; Henry, Timothy
Cc: Williams, Felicia
Subject: MDEQ request for technical assistance

I had a conversation with Dan Wyant today about the situation in Flint. We talked about the need for expedited implementation of corrosion control and making sure that appropriate testing protocols are used. He asked that EPA provide technical assistance to MDEQ to do this. Would you please arrange for the ORD people on the Flint Technical Advisory Committee to reach out to provide direct assistance to MDEQ, as well?

Also -- please work with Felicia to find a time at the end of the day tomorrow to check in on Flint.

Thanks.

Sent from my iPhone

To: Poy, Thomas[poy.thomas@epa.gov]
From: Hyde, Tinka
Sent: Mon 9/28/2015 1:37:16 PM
Subject: ACTION: MDEQ request for technical assistance

Tom - Please arrange with ORD experts to work directly with MDEQ and provide Tim & I a status update by 3:00 pm today. Thanks

-----Original Message-----
From: Hedman, Susan
Sent: Sunday, September 27, 2015 3:29 PM
To: Hyde, Tinka; Henry, Timothy
Cc: Williams, Felicia
Subject: MDEQ request for technical assistance

I had a conversation with Dan Wyant today about the situation in Flint. We talked about the need for expedited implementation of corrosion control and making sure that appropriate testing protocols are used. He asked that EPA provide technical assistance to MDEQ to do this. Would you please arrange for the ORD people on the Flint Technical Advisory Committee to reach out to provide direct assistance to MDEQ, as well?

Also -- please work with Felicia to find a time at the end of the day tomorrow to check in on Flint.

Thanks.

Sent from my iPhone

To: Deltoral, Miguel[deltoral.miguel@epa.gov]; Schock, Michael[Schock.Michael@epa.gov]
Cc: Shoven, Heather[shoven.heather@epa.gov]; Porter, Andrea[porter.andrea@epa.gov]; Christ, Lisa[Christ.Lisa@epa.gov]
From: Kempic, Jeffrey
Sent: Mon 9/28/2015 3:38:16 PM
Subject: RE: URGENT: PLS REVIEW
Requirement to Install and Maintain OCCT Revised Draft v2 09-28-2015 jk.docx

Miguel,

I made a few edits. I added a sentence after the large non-(b)(3) requirements noting that large (b)(3) systems with treatment in place are still required to operate and maintain corrosion control treatment.

I am not sure that the added text on page 6 is necessary as it seems like a separate issue that could be applied to all consecutive system monitoring agreements without any clear resolution. How would the limited sample subset from a satellite system demonstrate (or not demonstrate) that the system has achieved the goal of reducing lead to as close as possible to the MCLG of zero? I think the other language you added later about the consecutive system agreement only applying to the monitoring addresses the issue with Flint and Detroit (bottom of page 6 and top half of page 7).

I have attached the edited version. Hope that helps.

Jeff

From: Deltoral, Miguel
Sent: Monday, September 28, 2015 8:25 AM
To: Kempic, Jeffrey; Schock, Michael
Cc: Shoven, Heather; Porter, Andrea; Christ, Lisa
Subject: Re: URGENT: PLS REVIEW
Importance: High

Hi Jeff,

Attached is the revised memo. I left it marked-up so that folks can see the edits quickly.

I incorporated some revisions on (b)(3) along the lines of what I sent you in my email. I think it's important to stress that 141.29 only allows monitoring modifications, not treatment designations, so I added that as well. It will make no practical difference in MI since they have never met (b)(3) as a 'single system' but I don't want anything we write to be miscontrued as if they can also modify other non-monitoring rule requirements using 141.29.

I need to ship this out to the larger group for review asap, so I'd appreciate it if you could look this over quickly. There are not a lot of substanative changes.

Miguel A. Del Toral

Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

From: Kempic, Jeffrey
Sent: Friday, September 25, 2015 12:42 PM
To: Deltoral, Miguel; Schock, Michael
Cc: Shoven, Heather; Porter, Andrea; Christ, Lisa
Subject: RE: URGENT: PLS REVIEW

Miguel,

I made two edits. One to make the 141.(b)(3) optimization more consistent with the rule language and the second was to add a paragraph to the applicability of OCCT requirements to consecutive systems on the implications for systems that meet the 14181(b)(3) optimization. That did not seem to be covered in that section and when I looked up Detroit's most recent Water Quality Report, the 2014 report shows a 90th percentile for lead of 2.3 ppb, which means it might be considered or could qualify as a 141.81(b)(3) system. I don't know if the 2.3 ppb is based on Detroit plus all consecutive systems or just Detroit, but thought the memorandum should cover that possibility. I have attached the revised draft and the 2014 Detroit Water Quality Report. Let me know if you have questions.

Jeff

Jeffrey Kempic

Treatment Technology and Cost Team Leader

Standards and Risk Management Division

Phone: (202) 564-4880

From: Deltoral, Miguel
Sent: Thursday, September 24, 2015 12:19 PM
To: Kempic, Jeffrey; Schock, Michael
Cc: Shoven, Heather; Porter, Andrea
Subject: URGENT: PLS REVIEW
Importance: High

Mike/Jeff - Please review the attached draft memo. I want to run this first cut by you old timers first (yes, I said that) before I share it with the others. I know it's long but I did that intentionally for the sake of laying it all out for folks that are not familiar with the LCR. Otherwise we're gonna get tons of questions. I think we can shorten it after folks have gone through it and understand it.

Heather/Andrea - I am copying you folks so you are kept up on progress.

Mike/Jeff - Please copy all on any edits/comments/suggestions.

Miguel A. Del Toral

Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

INTERNAL DRAFT – DO NOT DISTRIBUTE

MEMORANDUM

Attorney Client / Attorney Work Product/ Ex. 5

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Attorney Client / Attorney Work Product/ Ex. 5

requirement to install and maintain occt revised draft 09-28-2015

To: Rita Bair - EPA[Bair.Rita@epa.gov]; Nicholas Damato - EPA[Damato.Nicholas@epa.gov]; Miguel Deltoral - EPA[Deltoral.Miguel@epa.gov]; Jennifer Crooks - EPA[Crooks.Jennifer@epa.gov]; Heather Shoven - EPA[Shoven.Heather@epa.gov]
From: Poy, Thomas
Sent: Mon 9/28/2015 6:28:43 PM
Subject: FW: question about optimal WQP ranges for Flint's water

FYI…

Tom Poy

Chief, Ground Water and Drinking Water Branch

USEPA - Region 5

(312) 886-5991

From: Hyde, Tinka
Sent: Monday, September 28, 2015 1:17 PM
To: Poy, Thomas; Henry, Timothy
Subject: FW: question about optimal WQP ranges for Flint's water

FYI

From: Yanna Lambrinidou [mailto:pnalternatives@yahoo.com]
Sent: Monday, September 28, 2015 11:30 AM
To: Busch, Stephen (DEQ)
Cc: Benzie, Richard (DEQ); Cook, Pat (DEQ); Prysby, Mike (DEQ); Wurfel, Brad (DEQ); Hyde, Tinka
Subject: Re: question about optimal WQP ranges for Flint's water

Dear Mr. Busch,

I appreciate your response.

Would you be able to send me a copy of the modified consecutive system approach to lead and copper monitoring that EPA approved?

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I thank you in advance for your help on this matter and your support of ongoing efforts to assess the LCR carefully and thoroughly.

Kindly,

Yanna Lambrinidou

Yanna Lambrinidou PhD

Parents for Nontoxic Alternatives
PO Box 6283
Washington DC 20015
P 202.997.1834
B www.dcwasawatch.blogspot.com

From: "Busch, Stephen (DEQ)" <BUSCHS@michigan.gov>
To: Yanna Lambrinidou <pnalternatives@yahoo.com>
Cc: "Benzie, Richard (DEQ)" <BENZIER@michigan.gov>; "Cook, Pat (DEQ)" <COOKP@michigan.gov>; "Prysby, Mike (DEQ)" <PRYSBYM@michigan.gov>; "Wurfel, Brad (DEQ)" <WurfelB@michigan.gov>; "hyde.tinka@epa.gov" <hyde.tinka@epa.gov>
Sent: Friday, September 25, 2015 8:26 AM
Subject: RE: question about optimal WQP ranges for Flint's water

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If you have additional questions we would appreciate having them routed through the NDWAC and your Working Group. Thanks.

Stephen Busch, P.E.

MDEQ Lansing District Coordinator

Office of Drinking Water and Municipal Assistance

Lansing and Jackson District Supervisor

517-643-2314

buschs@michigan.gov

From: Yanna Lambrinidou [mailto:pnalternatives@yahoo.com]
Sent: Wednesday, September 16, 2015 7:22 PM
To: Busch, Stephen (DEQ); Wurfel, Brad (DEQ)
Subject: Re: question about optimal WQP ranges for Flint's water

Dear Mr. Busch,

Thank you for your quick response. I appreciate the information at, I am sure, a very busy time for you and MDEQ.

Could you please help me understand the following?

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To: Yanna Lambrinidou <pnalternatives@yahoo.com>; "Wurfel, Brad (DEQ)" <WurfelB@michigan.gov>
Sent: Monday, September 14, 2015 11:05 AM
Subject: RE: question about optimal WQP ranges for Flint's water

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Flint itself.

As the City of Flint has not yet established optimized corrosion control treatment, the MDEQ is not yet at the point of regulatory requirements where the range of water quality parameters would be set.

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From: Yanna Lambrinidou [mailto:pnalternatives@yahoo.com]
Sent: Thursday, September 10, 2015 11:11 AM
To: Wurfel, Brad (DEQ); Busch, Stephen (DEQ)
Subject: question about optimal WQP ranges for Flint's water

Good morning Mr. Wurfel and Mr. Busch,

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Thank you kindly,

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To: Hedman, Susan[hedman.susan@epa.gov]
Cc: Hyde, Tinka[hyde.tinka@epa.gov]; Poy, Thomas[poy.thomas@epa.gov]
From: Kelley, Jeff
Sent: Mon 9/28/2015 7:48:53 PM
Subject: Inquiry from Michigan Radio re Flint drinking water

Susan,

Michigan Radio is asking:

Back in July the ACLU leaked an interim EPA report related to higher than allowable lead levels in the city of Flint. I was told then that because the report had not been finalized, the EPA could not comment on it beyond a written statement.

Curious if that report has been finalized? If not, do you have any idea when it might be? Obviously it's sort of a hot topic again and we've gotten a few inquiries. If it is, could I get a copy of it? Or would I need to FOIA?

The draft response below is based on input from Tom Poy and the previous approved desk statement:

EPA is working to finalize the field report. In the meantime, EPA and the Michigan Department of Environmental Quality are working closely with the city of Flint to ensure that residents are provided with safe drinking water. In response to EPA and MDEQ recommendations, Flint has decided to implement corrosion control treatment and will receive EPA technical assistance to help with that effort.

EPA advises everyone across the country to flush their pipes before drawing drinking water to reduce exposure to lead. The more time water has been sitting in your home's pipes, the more lead it may contain. Anytime the water in a particular faucet has not been used for six hours or longer, “flush” the cold-water pipes by running the water before drinking and remember to use only cold water for drinking, cooking, and preparing baby formula. Flushing times can vary based on the plumbing configuration in the home and whether the home has a lead service line.

Flint residents that are concerned about lead in their drinking water should contact the water utility and may request sampling. Additional information about lead in drinking water is available at: http://water.epa.gov/drink/contaminants/basicinformation/lead.cfm.

---
Jeff Kelley
Director, Office of External Communications
U.S. EPA Region 5
ph: 312-353-1159

To: Poy, Thomas[poy.thomas@epa.gov]; Deltoral, Miguel[deltoral.miguel@epa.gov]; Shoven, Heather[shoven.heather@epa.gov]; Porter, Andrea[porter.andrea@epa.gov]
Cc: Crooks, Jennifer[crooks.jennifer@epa.gov]
From: Crooks, Jennifer
Sent: Mon 9/28/2015 9:00:09 PM
Subject: Re: question about optimal WQP ranges for Flint's water

Tom--interesting that Yanna brings up the modified consecutive system approach to LCR monitoring. Mike Kovach (Benzie's predecessor), chief of CWS section, was so sure that all the Detroit consecutive systems would be below the AL, and he and Jim Cleland thought that the number of samples required for the 2 initial rounds were ridiculously high. So, they came up with this modified approach to the 2 initial sets of 6-month sampling, where the consecutive systems would take a reduced number of Lead samples. (but of course, by decreasing the number of samples, they were increasing the risk of exceeding the AL.) If there 90th percentile exceeded the AL, then the consecutive system would have to sample at the regulatory level. Imagine Mike's surprise when many of the consecutive Detroit systems exceeded the AL, and had to take the regulatory level of samples. The systems for the most part, did not save much, if any, money on the monitoring. Mike was disappointed in the results and said this modified consecutive system approach wasted money and time for systems and the State.

So, my memory of the modified consecutive system approach to LCR monitoring in MI, is that this applied only to the initial 2 6-month sets of lead sampling, 23 years ago. My reading of Steve's email, is that it is still ongoing, so I'm puzzled by his statements.

Jennifer

From: Poy, Thomas
Sent: Monday, September 28, 2015 1:28 PM
To: Bair, Rita; Damato, Nicholas; Deltoral, Miguel; Crooks, Jennifer; Shoven, Heather
Subject: FW: question about optimal WQP ranges for Flint's water

FYI…

Tom Poy

Chief, Ground Water and Drinking Water Branch

USEPA - Region 5

(312) 886-5991

From: Hyde, Tinka
Sent: Monday, September 28, 2015 1:17 PM
To: Poy, Thomas; Henry, Timothy
Subject: FW: question about optimal WQP ranges for Flint's water

FYI

From: Yanna Lambrinidou [mailto:pnalternatives@yahoo.com]
Sent: Monday, September 28, 2015 11:30 AM
To: Busch, Stephen (DEQ)
Cc: Benzie, Richard (DEQ); Cook, Pat (DEQ); Prysby, Mike (DEQ); Wurfel, Brad (DEQ); Hyde, Tinka
Subject: Re: question about optimal WQP ranges for Flint's water

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From: Kelley, Jeff
Sent: Tue 9/29/2015 2:09:22 PM
Subject: Flint drinking water clips

Lots of clips this morning …

- Clean water activists demand Detroit reconnection in Flint after lead study, Flint Journal

- City administrator asks Detroit about reconnecting Flint to Lake Huron, Flint Journal

- Flint schools chief seeking water donations for students after lead warning, Flint Journal

- Flint officials exploring return to Detroit water, Michigan Radio

- Snyder must act on Flint lead crisis, Detroit Free Press

- Snyder urged to help Flint reconnect to Detroit water, Detroit News

- Study suggests Flint's water causing increased lead poisoning, Michigan Radio

- Anger over Flint's water woes is reaching a boiling point, Michigan Radio

- Bottled water donations flowing into Flint schools, Michigan Radio

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http://www.mlive.com/news/flint/index.ssf/2015/09/coalition_for_clean_water_dema.html

Clean water activists demand Detroit reconnection in Flint after lead study

By Molly Young | myoung7@mlive.com

The Flint Journal on September 28, 2015 at 2:54 PM, updated September 29, 2015 at 9:04 AM

FLINT, MI -- The Coalition for Clean Water is demanding Flint's administration switch back to purchasing water from Detroit after recent studies showed a spike in lead levels in drinking water and in children since the switch to Flint River water more than a year ago.

Dozens of people attended the conference, which was held in the lobby of Flint City Hall Monday morning, Sept. 28. After Pastor Alfred Harris Sr. gave opening remarks, Pastor Allen C. Overton, chair of the grassroots coalition, said during the conference that the recent studies have proven Flint water is unsafe, and that residents must continue pushing city officials for change.

"We have found all the facts, we have found all the information – it's time for the citizens of Flint to demand fresh, clean water from this administration. And they need to understand we are not going away and we want the water source changed immediately," Overton said during the conference.

At one point during the conference, attendees began chanting over Overton: "Fresh, clean water."

Harris said the coalition has met with Mayor Dayne Walling and has reached out to Governor Rick Snyder asking for a sit-down to discuss possible solutions.

Walling said during a press conference Friday, Sept. 25, that he believes the city's use of the river has resulted in an increased risk of lead leaching into drinking water because of the river water's corrosiveness and said he would consider support for reconnecting Flint to the Detroit water system again.

Overton said during the conference that the city has "skewed test procedures and otherwise misrepresented data to the MDEQ."

Walling denied those claims in an email to The Flint Journal on Monday afternoon.

"The City of Flint has followed the guidance from the Michigan Department of Environmental Quality and the U.S. Environmental Protection Agency. Claims to the contrary are false because the City is actually going above and beyond the required standards to ensure the community's health and safety," Walling said.

Walling, speaking at a news conference to issue a lead advisory for the city last week, said he's willing to discuss buying Detroit-treated Lake Huron water again, but he said that decision rests with Gov. Rick Snyder.

His comments came the day after a Hurley Medical Center doctor released a study showing increasing incidents of elevated blood lead levels in Flint children.

In his statement on Monday, Walling said the administration is looking for ways to address health risks in the system.

"I was troubled by the doctors' data on elevated blood levels and I am calling for the collective resources of the federal and state governments and local partners to address all of the immediate concerns and long-term risks with lead in our old system," Walling said. "Every option is on the table to fix Flint's water."

Flint's long-term drinking water plan is still to eventually draw water from a new pipeline to Lake Huron that's being built by the city and Genesee County through the Karegnondi Water Authority.

But the pipeline isn't expected to be completed until some time in 2016 and Flint has struggled with water quality and treatment since switching to the Flint River in the interim.

Overton said the coalition has since asked for a sit-down with city and state officials, but have not yet received a response. He said the coalition is weighing its options, including mass protests, in case there is no response or change announced soon.

"If we do not get a response from either of them we will begin to protest in this city like they have never seen before," Overton said.

Overton and Harris did not say when such an action would be taken, or exactly what it would entail, but insisted they will not back down.

Harris said that in the past, Flint has contributed in a major way to the state's financial stability, and now it's time for the state to repay the city by helping them find a source of clean water.

"Flint deserves the purist water source. Let the state pay for it. Let the federal government pay for it. Let the United Nations pay for it," Harris said.

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http://www.mlive.com/news/flint/index.ssf/2015/09/city_administrator_asks_detroi.html

City administrator asks Detroit about reconnecting Flint to Lake Huron

By Ron Fonger | rfonger1@mlive.com
The Flint Journal on September 28, 2015 at 7:45 PM, updated September 28, 2015 at 8:13 PM

FLINT, MI -- A key official inside City Hall says she's trying to broker a deal to reconnect Flint to the Detroit water system.

City Administrator Natasha Henderson said she's approached the Detroit Water and Sewerage Department about the potential reconnection because of recent concerns about lead levels in treated Flint River water.

Henderson told the City Council today, Sept. 28, that she's attempted to contact representatives of DWSD and the Great Lakes Water Authority, the consortium that will take over day-to-day operation of the Detroit system next year.

The move is significant because Henderson has broad powers in running the city and is the primary contact between the state-appointed Receivership Transition Advisory Board and the rest of city government.

"There is a better chance we would not have as much of a lead problem" if the city stopped using the Flint River, Henderson said. "It is more corrosive (than Detroit-treated Lake Huron water).

The Flint River water "can cause more problems," she said.

Henderson's statements today represent a shift in her approach to the issue of Flint drinking water.

Appointed to her position by former emergency manager Darnell Earley, Henderson has never previously publicly promoted reconnecting Flint to the Detroit water system.

Along with former emergency managers, Henderson has said previously that Flint could not afford to switch back to DWSD water and said today Flint still won't be able to pay for Detroit water without help or lower rates than have been proposed previously.

"I would like the state to help us get back to DWSD if that's possible," the city administrator said. "I would like for the state to help us do that."

Henderson's move comes just days after Mayor Dayne Walling opened the door to returning to the Detroit water system as work continues on the Karegnondi Water Authority pipeline.

Walling had been an advocate of using the Flint River as the city's source of drinking water since it switched from the Detroit water system in April 2014.

But the mayor shifted his approach to the issue last week after a report by Dr. Mona Hanna-Attisha, director of Hurley Medical Center's pediatric residency program, showed a near doubling of the percentage of children living in Flint with elevated blood lead levels since the switch to river water.

The Hurley study followed testing by Virginia Tech, which showed 10 percent of Flint homes tested by the university had 25 parts per billion of lead or more, far more than the allowable level -- 15 ppb -- set in federal guidelines.

City and state officials have said their testing shows Flint's water supply meets all health and safety regulations, never rising above 11 ppb in more than 10 percent of homes during the last 16 months, but data from the state shows lead levels have spiked since the city began using the river as its water source.

Henderson said a return to Detroit water wouldn't eliminate lead but could cut the amount of lead in tap water because treated river water is more corrosive than lake water.

State Sen. Jim Ananich, D-Flint, also today called on the state to assist the city in reconnecting to the Detroit water system until the completion of the KWA pipeline.

Dave Murray, a spokesman for Snyder, said in a statement today that the governor "and state agencies continue to work with city leaders, looking at a variety of approaches to the problem."

Several city residents continued to speak out about Flint's water during a City Council meeting today and some said Henderson and others should have acted long ago to end the use of river water.

"The city of Flint has eroded the public trust," said Nayyirah Shariff, a representative of the Democracy Defense League, one of the citizen groups fighting against use of the Flint River. "Our children and infants cannot be lost in the shuffle."

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http://www.mlive.com/news/flint/index.ssf/2015/09/flint_superintendent_looking_t.html

Flint schools chief seeking water donations for students after lead warning

By Sarah Schuch | sschuch@mlive.com The Flint Journal on September 28, 2015 at 4:05 PM, updated September 28, 2015 at 7:13 PM

FLINT, MI – The Flint School District is seeking donations for bottled water for students following last week's decision to stop using tap water at the schools, the superintendent said.

Donations and support have already started pouring in, but it's not enough, Flint Superintendent Bilal Tawwab said Monday, Sept. 28.

He urged the community to help at a news conference at Pierce Elementary.

"We need your help. On Friday, we all read the advisory as it relates to the water challenges here in Flint," Tawwab said during a press conference. "And I must say, as their champion, I'm going to stand for children and I unfortunately had to make the decision that at this time it would be best that our children no longer drink the water in our Flint Community Schools until further notice."

Two large water donations came to the Flint School District on Monday. Home Depot – the Burton and Pierson Road locations – donated 84 cases of water and were present during the press conference. Sams Club donated 72 cases that morning.

The district is asking students to avoid school drinking fountains and bring bottled water to school following a lead advisory issued by the city.

Infants and children are being found with elevated levels of lead in their blood since the city switched to using the Flint River as its water source, according to a new study by a Hurley Medical Center doctor.

The data showed that the percentage of infants and children with above-average lead levels has nearly doubled citywide, and has nearly tripled among children in "high risk" areas of lead exposure, according to the study.

The Flint School District issued an advisory Friday, Sept. 25, stating the district is developing an internal action plan to ensure student safety at school.

The district is asking that, effective immediately, families send their children to school with bottled water.

For those parents and families who are unable to send children to school with bottled water, Tawwab is asking for the community to fill in the gaps.

"I'm very excited, but I need for everyone in the community really wrap yourself around your community schools," he said. "We need all of our children to be in school ready to learn and to do that we need them to have excellent drinking water. So hopefully we'll all answer this call."

School officials have contacted the DEQ and will be getting the water from all the schools tested. Food preparation will also use bottled water where necessary until further notice.

Officials are working on turning off the switch to the drinking fountains in the schools and school administrators are being reminded to make sure students are supervised during school hours.

"I'm taking control over the part of the day I have control over. And that is the school day so I'm making sure while the kids are in my possession that they're going to have safe drinking water," Tawwab said.

Tawwab said he's proud that the school officials are doing what needs to be done to keep children safe and healthy, but now he's asking public officials to do the same.

"They are children here. So while the politicians want to sit back and talk about the water, whose responsibility it is, there are children here," Tawwab said. "This weekend, I'll be honest, I thought about my own youngsters in my family. I wouldn't have them drink the water. I wouldn't.

"Think about it. Even if they aren't your own children, there are children here and we must always think about making decisions that are best for our children. ... I want to see the city do what is best for kids. They must have clean drinking water."

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http://michiganradio.org/post/flint-officials-exploring-return-detroit-water#stream/0

Flint officials exploring return to Detroit water

Steve Carmody / Michigan Radio

City Administrator Natasha Henderson is talking with the different groups needed to make the switch back to the Detroit Water and Sewerage Department.

The city switched from DWSD about a year and a half ago to the Flint River for the city’s drinking water. But the switch has been plagued with problems, from foul-smelling water to rising lead levels.

Mayor Dayne Walling says something must be done now.

“We need a comprehensive action plan in place this week,” says Walling.

The state will likely be asked to play a critical financial role.

Money is the key obstacle. Walling estimates going babck to DWSD will cost the city of Flint an extra $1.5 million a month.

It was the rising cost of Detroit water that led state-appointed emergency managers to decide to switch the city of Flint to a new water source.

The emergency manager signed a deal to hook up Flint to the new Karegnondi pipeline. The KWA pipeline will carry water from Lake Huron to Genesee County. But the KWA won't be online until 2016.

The Flint River was intended to bridge the gap between the end of the DWSD contract and the beginning of the KWA contract.

But since the switch was thrown in April 2014, Flint residents have complained about the smell, taste and appearance of the city's tap water.

More problems followed, including E. coli outbreaks and high levels of a potentially cancer-causing chemical.

Recently, multiple reports have revealed rising lead levels in Flint drinking water and in the blood of the city's young children.

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http://www.freep.com/story/opinion/columnists/nancy-kaffer/2015/09/26/shortfalls-em-law-writ-large-flint-water-crisis/72811990/

Snyder must act on Flint lead crisis

By Nancy Kaffer, Detroit Free Press Columnist
11:11 a.m. EDT September 27, 2015

It's hard to understand the resounding yawn that seems to have emanated from the governor's office, following news that an increasing percentage of Flint kids have been lead poisoned after a switch in the city's water supply.

A spokeswoman for the Michigan Department of Health and Human Services sent a Free Press data analyst a chart she claimed would refute a report issued by a Hurley Medical Center researcher, who found that since the city started pumping water from the Flint River last April, the percentage of Flint kids with elevated blood-lead levels has more than doubled in some ZIP codes.

In fact, the state's data supports the Hurley researcher's claim — the number of kids with lead poisoning had been falling in Flint and across the state, until the water switch. Now it's increasing.

A spokeswoman for Gov. Rick Snyder wrote in an e-mail that the Hurley data had been “spliced and diced,” a suggestion that it’s something other than accurate — even though the state’s own data bolsters the Hurley report.

And officials across the administration have hastened to insist that Flint’s water is safe and to suggest that although published reports say Michigan Department of Environmental Quality data show elevated lead levels in Flint's water, there’s no reason to suspect that has caused more Flint kids to suffer from lead poisoning. And so far, none of it has it spurred them to action.

But here's the situation: There's more lead in Flint's water than there used to be. And more Flint kids have lead in their blood, something that leads to serious, irreversible behavioral and developmental problems.

How it happened

The City of Flint decided in 2013 to join the new Karegnondi Water Authority, along with Genesee, Sanilac and Lapeer counties. That system won't be complete until 2016. In the interim, the city — under former emergency manager Darnell Earley — opted to pump its water from the Flint River, instead of continuing to purchase it from the Detroit Water and Sewerage Department -- in part, state officials say, because DWSD planned to raise its rates for a short-term contract. The city considered blending Lake Huron and Flint River water, but ultimately chose to pull water from the Flint River alone. Genesee County, in contrast, will continue to purchase its water from DWSD while the new system is under construction.

Researchers say that Flint River water, more corrosive than the Lake Huron water pumped by the Detroit Water and Sewerage Department, is leaching lead from the city's aging infrastructure into the water supply.

The city, and its residents, need help. In the near term, residents — especially residents with formula-fed infants, whose diets are composed almost entirely of water — living in poverty need assistance to purchase bottled water or filtration systems. And the city needs to consider its long-term options, in particular, whether to reconnect to DWSD until the Karegnondi system is complete.

That wouldn't be a simple process. Former Flint EM Darnell Earley, now EM for Detroit Public Schools, wrote in an e-mailed statement that he was not involved in the decision to use river water, although it occurred during his tenure. He was also EM when a 9-mile section of pipe was sold to Genesee County, a decision he wrote was in the works before his appointment, meaning the city can't reconnect to the Detroit system without the cooperation of Genesee County.

Nor is the higher cost of buying water from DWSD — about $1.5 million a month — in the city's budget, Flint Mayor Dayne Walling said. The city, which emerged from state oversight this year, would need the approval of its transitional advisory board to increase its water budget.

Flint, by the way, is broke.

U.S. Rep. Dan Kildee and state Senate Majority Leader Jim Ananich, both Flint Democrats, have pledged to bring financial and practical assistance to the district.

For now, Walling said, Flint's water treatment plant will begin to add anticorrosive agents to the Flint River water, which will take weeks to impact the water supply.

If I lived in Flint, I'd be mad. If I were a Flint parent, with a child who'd spent the last year and a half drinking lead-contaminated water, I'd be in despair.

We're talking about a public health crisis — one that could have been avoided.

Whose fault is it?

During their tenures, emergency managers are the ultimate authority in the cities they serve.

And so the responsibility for Flint's water lies, ultimately, with Snyder, and the emergency managers he appointed — and it is Snyder who must come to Flint's rescue. Walling says Flint's residents need funds for immediate relief, but that the city needs grants to start to upgrade its aging, lead-ridden water infrastructure.

Snyder hasn't hesitated to appoint or retain emergency managers in struggling cities across the state, a stance the Free Press Editorial Board has largely supported, with one caveat: Emergency managers have to make things better.

That is the premise on which the emergency manager law is predicated. Cities are the creation of the state. The state has a responsibility to care for the health and welfare of its residents, and sometimes, cities face challenges not fixable at the local level. In those cases, the state must step in.

That's certainly the case in Flint, which has suffered from the same loss of population — and tax base — as Detroit, but with fewer assets with which to leverage a satisfactory outcome.

In those circumstances, the Free Press editorial board has argued, the state has a responsibility to act, to restore some fiscal stability, and thus service delivery and quality of life for residents.

That's the catch.

It'd be easy to balance any city's budget: Lay off all the cops, sell all the ambulances, liquidate the city parks. But that wouldn't make life better for residents. That's the balance emergency managers must be mindful of — cost savings versus quality of life. Spending cuts versus service delivery. A city's bottom line can't be profit-driven.

That is the glaring weakness in the emergency manager law, and it on full display in Flint.

Snyder spokeswoman Sara Wurfel said the state signed off on the switch at the behest of Walling and the Flint City Council, and only "with serious reservations."

That's not exactly how Walling remembers it.

"I didn’t support it one way or the other," he said. "It wasn’t my decision. I had a lot of concerns about it that I raised internally, but the budget was in place ... I had a lot of concerns about it, but when it was decided that was the decision ... I didn’t protest."

When the Flint City Council voted this year to reconnect to the Detroit water system, then-emergency manager Jerry Ambrose called its decision "incomprehensible": "Water from Detroit is no safer than water from Flint," Ambrose said, as reported in the Flint Journal.

It's pretty clear that's not true. It's not clear what anyone from the State of Michigan is prepared to do about it.

Sixteen months ago, Earley and Walling celebrated the city's departure from DWSD, raising glasses of Flint River water, prepared to toss them back, with a toast that strikes a hollow note today: Here's to Flint.

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http://www.detroitnews.com/story/news/2015/09/28/snyder-urged-help-flint-reconnect-detroit-water/72999390/

Snyder urged to help Flint reconnect to Detroit water

Chad Livengood, Detroit News Lansing Bureau 7:21 a.m. EDT September 29, 2015

Lansing — Senate Minority Leader Jim Ananich urged Gov. Rick Snyder on Monday to help Flint switch back to Detroit's water system after medical researchers found elevated levels of lead in children who consumed water from the Flint River over the past year.

Ananich, a Democrat who represents Flint, said the city of 99,000 residents faces a "public health crisis" after pediatricians at Hurley Medical Center discovered higher levels of lead in the blood of Flint children tested since the city stopped buying drinking water from Detroit 18 months ago.

“I’m going to keep pushing for swift transfer back to Detroit,” Ananich told The Detroit News. “I think that seems like the most logical decision to make at this point in time.”

Flint residents have been complaining about the odor, taste and smell of the city’s water since Flint stopped buying bulk water from Detroit’s water department in April 2014 and started pumping drinking water from the Flint River. The river is serving as a temporary water source until a new regional pipeline from Lake Huron goes online in late 2016.

Ananich participated in a conference call with Snyder and members of his administration on Monday morning.

“I’ve been stressing an urgency, that this is a public health crisis and we need to get in front of it,” Ananich said.

Ananich also sought emergency funding to supply Flint residents with bottled water and to purchase thousands of water filters for household faucets to help filter out lead from the city’s aging lead-lined pipes that service some 15,000 customers.

Snyder spokeswoman Sara Wurfel said the governor’s office is “reviewing” Ananich’s ideas.

“We believe protecting public health is paramount and safe, clean, accessible drinking water is essential,” Wurfel said. “That’s what we are focused on helping ensure and deeply share the senator’s commitment to helping address the issue.”

Flint officials have said they stopped buying Detroit’s water after the Detroit Water and Sewerage Department sought to hike the city’s monthly water bill by $1.5 million until Flint switched over to the new Karegnondi Pipeline Authority next year.

Last week, Genesee County pediatricians released a study of blood levels of Flint children younger than 5 between January 2013 and September 2013 when Flint used Detroit's water and January and September of this year when residents drank Flint River water.

The study found blood levels of lead in Flint children nearly doubled and in two Flint ZIP codes, the lead levels tripled. Federal officials have previously cited Flint for having high levels of a disinfectant by-product.

In a letter to Snyder Monday, Ananich said the city needs the state's assistance in negotiating a short-term water purchasing contract with the Detroit Water and Sewerage Department until a new pipeline project can be complete.

Earlier this year, Flint leaders rebuffed an offer by Detroit officials to reconnect Flint for $12 million more annually, The Detroit News reported in February.

“Your administration has the ability to ensure a financially acceptable and responsible contract between Flint and the Detroit Water and Sewerage Department, particularly in light of the public health implications with the Flint River supply,” Ananich wrote to Snyder.

The governor's office did not comment on Ananich's desire to have Flint switch back to Detroit's water supply.

But Wurfel noted the state has provided $4.2 million in grants and loans to help Flint add a carbon filtration system and test its water.

“We understand that residents are frustrated,” Wurfel said in an email.

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http://michiganradio.org/post/study-suggests-flints-water-causing-increased-lead-poisoning#stream/0

Study suggests Flint's water causing increased lead poisoning

Michigan Radio Stateside Staff • 16 hours ago

Last year, Flint ended five decades of service from the Detroit Water and Sewerage Department. The city's going to take its water from a new pipeline from Lake Huron, but that won't be ready until some time next year.

In the meantime, Flint decided that rather than continuing to pay for Detroit water, it would get its drinking water from the Flint River.

Almost immediately after making that change, residents began complaining about the way their drinking water looked, smelled and tasted. There were issues with the chemicals used to treat the river water.

And now a study performed by pediatrician Dr. Mona Hanna-Attisha of the Hurley Medical Center has found an increase in the number of Flint children who have been lead poisoned since the switch to the Flint River water.

Hanna-Attisha says she looked at the blood lead levels of Flint residents from before and after the switch, and noticed that the percentage of children with elevated blood lead levels just about doubled.

“Pre-switch percent of children with elevated blood (lead) levels was 2.1%, and then after the switch it was 4%,” she says.

She adds that the data for children in the rest of Genessee County, which is sticking with Detroit water until the new pipeline is ready, showed no statistical change in blood lead levels.

Even more troubling, Hanna-Attisha says that state and national data showed blood lead levels in children dropping consistently year over year before the switch due to, "great public health efforts and education efforts and lead abatement efforts."

"Whenever you see that percentage staying the same or that percentage increasing, that is a red flag," she says.

There has been some concern surrounding Flint's infrastructure and how it affects the quality of the water, but Hanna-Attisha says that's not the key factor here.

"Infrastructure has a role, but this infrastructure hasn't changed. It was old then, it is old now, but these levels have increased. So what's changed is... the water," she says.

She explains that the Flint River water is more corrosive than the water from Lake Huron, so it is aging Flint's existing water infrastructure and causing the leaching of lead from these pipes.

According to Hanna-Attisha, "mountains and mountains of research" show that lead poisoning is linked with decreased IQ, behavioral issues, ADHD-like symptoms, and higher rates of violent offenses and incarcerations.

"It's just one of the absolute worst things that you could do for the life course of a child," Hanna-Attisha says.

The State Department of Health and Human Services, the Department of Environmental Quality and the Governor's office have downplayed and in some cases attempted to discredit Hanna-Attisha's findings, but she isn't swayed.

“I think it’s fascinating, because if you look at their data, it pretty much shows the exact same thing. Every year there was a decrease in the total percentage of kids with elevated blood lead levels, and then the year after the switch it jumped up.” she says. “You can’t fight the numbers, the numbers are there, everything is consistent.”

Hanna-Attisha advises that children, formula-fed infants and pregnant mothers in the area avoid tap water.

As for everyone else, she suggests running the water for five or so minutes before using it and only using cold water for cooking.

Here's a quick explainer for those trying to get a better understanding of the complicated water issues in Flint.

-Ryan Grimes, Stateside

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http://michiganradio.org/post/anger-over-flints-water-woes-reaching-boiling-point#stream/0

Anger over Flint's water woes is reaching a boiling point

Steve Carmody, Michigan Radio • 17 hours ago

Dozens of people chanted “Fresh, Clean Water” as they jammed the lobby of Flint city hall Monday.

The anger over the city’s long-simmering water problems is reaching a boiling point.

People have been complaining since April of last year, when the city switched from Detroit water to the Flint River as the city’s source of drinking water.

Concerns about the water’s taste and smell have been replaced by fears of rising lead levels in Flint’s drinking water. Virginia Tech researchers blame the "corrosiveness" of the Flint River for the elevated lead levels. Other research shows children’s blood lead levels in Flint have doubled since the switch.

A coalition of groups say the time has passed for further testing.

Pastor Allen Overton is calling on Gov. Snyder and Flint’s elected leaders to immediately return to getting the city’s drinking water from Detroit.

“If we do not get any response from either of them, we will begin to protest in this city like they have never seen before,” says Overton.

Flint pastors plan to meet with their attorney tomorrow to review their options.

Meanwhile, Gov. Snyder says his office is talking with Flint leaders and collecting facts. The governor declined to say what action might be taken next.

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http://michiganradio.org/post/bottled-water-donations-flowing-flint-schools#stream/0

Bottled water donations flowing into Flint schools

Steve Carmody, Michigan Radio • 18 hours ago

It took five Home Depot employees a couple trips to unload a pickup truck filled with dozens of cases of bottled water into a classroom at a Flint elementary school this afternoon.

The donation was the largest, but far from the only, bottled water donation to Flint schools today.

School Superintendent Bilal Tawwab asked for donations after reports that Flint's drinking water contains "serious" lead levels. Last week, local hospital officials announced their tests showed blood lead levels in children in Flint had nearly doubled since the switch.

The timeline corresponds with the city's switch from the Detroit Water and Sewerage Department to the Flint River as the source of its drinking water.

Children are especially at risk when exposed to high lead levels.

Tawwab is grateful for the response his request has received so far. But he adds the more than 5,000 students in the Flint Community Schools will need more.

“We need a lot more donations like this,” Tawwab said as he stood in front of the 80-plus cases donated by two local Home Depots. “We just want to be able to meet the demand … so we're just going to take as much as you guys will give.”

Tawwab says he's asked the Michigan Department of Environmental Quality to come in and test the water in Flint school buildings.

He also asked state and local officials to come up with a solution to Flint's water woes.

Researchers from Virginia Tech blame the highly "corrosive" nature of the Flint River. They claim the river water is breaking down lead pipes and lead solder used in water pipes, creating lead levels in some homes at above 15 parts per billion.

Flint Mayor Dayne Walling has asked the state for $30 million to address the problem. $10 million would be for replacing lead pipes.

Jeff Kelley
Director, Office of External Communications
U.S. EPA Region 5
ph: 312-353-1159

Cc: Vaught, Laura[Vaught.Laura@epa.gov]; Reynolds, Thomas[Reynolds.Thomas@epa.gov]; Rupp, Mark[Rupp.Mark@epa.gov]; Fritz, Matthew[Fritz.Matthew@epa.gov]
To: Meiburg, Stan[Meiburg.Stan@epa.gov]; Burke, Thomas[Burke.Thomas@epa.gov]; Kopocis, Ken[Kopocis.Ken@epa.gov]; Grevatt, Peter[Grevatt.Peter@epa.gov]
From: Hedman, Susan
Sent: Tue 9/29/2015 2:14:18 PM
Subject: Fwd: Flint drinking water clips

FYI

Sent from my iPhone

Begin forwarded message:

From: "Kelley, Jeff" <kelley.jeff@epa.gov>
Date: September 29, 2015 at 9:09:22 AM CDT
To: "Hedman, Susan" <hedman.susan@epa.gov>, "Kaplan, Robert" <kaplan.robert@epa.gov>, "Hyde, Tinka" <hyde.tinka@epa.gov>
Cc: "Poy, Thomas" <poy.thomas@epa.gov>, "Henry, Timothy" <henry.timothy@epa.gov>, "Cassell, Peter" <cassell.peter@epa.gov>, "Rowan, Anne" <rowan.anne@epa.gov>, "Deamer, Eileen" <deamer.eileen@epa.gov>, "Fortin, Denise" <Fortin.Denise@epa.gov>, "Beckmann, Ronna Erin" <beckmann.ronna@epa.gov>, "Arcaute, Francisco" <Arcaute.Francisco@epa.gov>
Subject: Flint drinking water clips

Lots of clips this morning …

- □□□□□□□□ Clean water activists demand Detroit reconnection in Flint after lead study, Flint Journal
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- □□□□□□□□ Flint schools chief seeking water donations for students after lead warning, Flint Journal
- □□□□□□□□ Flint officials exploring return to Detroit water, Michigan Radio
- □□□□□□□□ Snyder must act on Flint lead crisis, Detroit Free Press
- □□□□□□□□ Snyder urged to help Flint reconnect to Detroit water, Detroit News

•□□□□□□□□ Study suggests Flint's water causing increased lead poisoning, Michigan Radio

•□□□□□□□□ Anger over Flint's water woes is reaching a boiling point, Michigan Radio

•□□□□□□□□ Bottled water donations flowing into Flint schools, Michigan Radio

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http://www.mlive.com/news/flint/index.ssf/2015/09/coalition_for_clean_water_dema.html

Clean water activists demand Detroit reconnection in Flint after lead study

By Molly Young | myoung7@mlive.com

The Flint Journal on September 28, 2015 at 2:54 PM, updated September 29, 2015 at 9:04 AM

FLINT, MI -- The Coalition for Clean Water is demanding Flint's administration switch back to purchasing water from Detroit after recent studies showed a spike in lead levels in drinking water and in children since the switch to Flint River water more than a year ago.

Dozens of people attended the conference, which was held in the lobby of Flint City Hall Monday morning, Sept. 28. After Pastor Alfred Harris Sr. gave opening remarks, Pastor Allen C. Overton, chair of the grassroots coalition, said during the conference that the recent studies have proven Flint water is unsafe, and that residents must continue pushing city officials for change.

"We have found all the facts, we have found all the information – it's time for the citizens of Flint to demand fresh, clean water from this administration. And they need to understand we are not going away and we want the water source changed immediately," Overton said during the conference.

At one point during the conference, attendees began chanting over Overton: "Fresh, clean water."

Harris said the coalition has met with Mayor Dayne Walling and has reached out to Governor Rick Snyder asking for a sit-down to discuss possible solutions.

Walling said during a press conference Friday, Sept. 25, that he believes the city's use of the river has resulted in an increased risk of lead leaching into drinking water because of the river water's corrosiveness and said he would consider support for reconnecting Flint to the Detroit water system again.

Overton said during the conference that the city has "skewed test procedures and otherwise misrepresented data to the MDEQ."

Walling denied those claims in an email to The Flint Journal on Monday afternoon.

"The City of Flint has followed the guidance from the Michigan Department of Environmental Quality and the U.S. Environmental Protection Agency. Claims to the contrary are false because the City is actually going above and beyond the required standards to ensure the community's health and safety," Walling said.

Walling, speaking at a news conference to issue a lead advisory for the city last week, said he's willing to discuss buying Detroit-treated Lake Huron water again, but he said that decision rests with Gov. Rick Snyder.

His comments came the day after a Hurley Medical Center doctor released a study showing increasing incidents of elevated blood lead levels in Flint children.

In his statement on Monday, Walling said the administration is looking for ways to address health risks in the system.

"I was troubled by the doctors' data on elevated blood levels and I am calling for the collective resources of the federal and state governments and local partners to address all of the immediate concerns and long-term risks with lead in our old system," Walling said. "Every option is on the table to fix Flint's water."

Flint's long-term drinking water plan is still to eventually draw water from a new pipeline to Lake Huron that's being built by the city and Genesee County through the Karegnondi Water Authority.

But the pipeline isn't expected to be completed until some time in 2016 and Flint has struggled with water quality and treatment since switching to the Flint River in the interim.

Overton said the coalition has since asked for a sit-down with city and state officials, but have not yet received a response. He said the coalition is weighing its options, including mass protests, in case there is no response or change announced soon.

"If we do not get a response from either of them we will begin to protest in this city like they have never seen before," Overton said.

Overton and Harris did not say when such an action would be taken, or exactly what it would entail, but insisted they will not back down.

Harris said that in the past, Flint has contributed in a major way to the state's financial stability, and now it's time for the state to repay the city by helping them find a source of clean water.

"Flint deserves the purist water source. Let the state pay for it. Let the federal government pay for it. Let the United Nations pay for it," Harris said.

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http://www.mlive.com/news/flint/index.ssf/2015/09/city_administrator_asks_detroi.html

City administrator asks Detroit about reconnecting Flint to Lake Huron

By Ron Fonger | rfonger1@mlive.com
The Flint Journal on September 28, 2015 at 7:45 PM, updated September 28, 2015 at 8:13 PM

FLINT, MI -- A key official inside City Hall says she's trying to broker a deal to reconnect Flint to the Detroit water system.

City Administrator Natasha Henderson said she's approached the Detroit Water and Sewerage Department about the potential reconnection because of recent concerns about lead levels in treated Flint River water.

Henderson told the City Council today, Sept. 28, that she's attempted to contact representatives of DWSD and the Great Lakes Water Authority, the consortium that will take over day-to-day operation of the Detroit system next year.

The move is significant because Henderson has broad powers in running the city and is the primary contact between the state-appointed Receivership Transition Advisory Board and the rest of city government.

"There is a better chance we would not have as much of a lead problem" if the city stopped using the Flint River, Henderson said. "It is more corrosive (than Detroit-treated Lake Huron water).

The Flint River water "can cause more problems," she said.

Henderson's statements today represent a shift in her approach to the issue of Flint drinking water.

Appointed to her position by former emergency manager Darnell Earley, Henderson has never previously publicly promoted reconnecting Flint to the Detroit water system.

Along with former emergency managers, Henderson has said previously that Flint could not afford to switch back to DWSD water and said today Flint still won't be able to pay for Detroit water without help or lower rates than have been proposed previously.

"I would like the state to help us get back to DWSD if that's possible," the city administrator said. "I would like for the state to help us do that."

Henderson's move comes just days after Mayor Dayne Walling opened the door to returning to the Detroit water system as work continues on the Karegnondi Water Authority pipeline.

Walling had been an advocate of using the Flint River as the city's source of drinking water since it switched from the Detroit water system in April 2014.

But the mayor shifted his approach to the issue last week after a report by Dr. Mona Hanna-Attisha, director of Hurley Medical Center's pediatric residency program, showed a near doubling of the percentage of children living in Flint with elevated blood lead levels since the switch to river water.

The Hurley study followed testing by Virginia Tech, which showed 10 percent of Flint homes tested by the university had 25 parts per billion of lead or more, far more than the allowable level -- 15 ppb -- set in federal guidelines.

City and state officials have said their testing shows Flint's water supply meets all health and safety regulations, never rising above 11 ppb in more than 10 percent of homes during the last 16 months, but data from the state shows lead levels have spiked since the city began using the river as its water source.

Henderson said a return to Detroit water wouldn't eliminate lead but could cut the amount of lead in tap water because treated river water is more corrosive than lake water.

State Sen. Jim Ananich, D-Flint, also today called on the state to assist the city in reconnecting to the Detroit water system until the completion of the KWA pipeline.

Dave Murray, a spokesman for Snyder, said in a statement today that the governor "and state agencies continue to work with city leaders, looking at a variety of approaches to the problem."

Several city residents continued to speak out about Flint's water during a City Council meeting today and some said Henderson and others should have acted long ago to end the use of river water.

"The city of Flint has eroded the public trust," said Nayyirah Shariff, a representative of the Democracy Defense League, one of the citizen groups fighting against use of the Flint River. "Our children and infants cannot be lost in the shuffle."

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http://www.mlive.com/news/flint/index.ssf/2015/09/flint_superintendent_looking_t.html

Flint schools chief seeking water donations for students after lead warning

By Sarah Schuch | sschuch@mlive.com The Flint Journal on September 28, 2015 at 4:05 PM, updated September 28, 2015 at 7:13 PM

FLINT, MI – The Flint School District is seeking donations for bottled water for students following last week's decision to stop using tap water at the schools, the superintendent said.

Donations and support have already started pouring in, but it's not enough, Flint Superintendent Bilal Tawwab said Monday, Sept. 28.

He urged the community to help at a news conference at Pierce Elementary.

"We need your help. On Friday, we all read the advisory as it relates to the water challenges here in Flint," Tawwab said during a press conference. "And I must say, as their champion, I'm going to stand for children and I unfortunately had to make the decision that at this time it would be best that our children no longer drink the water in our Flint Community Schools until further notice."

Two large water donations came to the Flint School District on Monday. Home Depot – the Burton and Pierson Road locations – donated 84 cases of water and were present during the press conference. Sams Club donated 72 cases that morning.

The district is asking students to avoid school drinking fountains and bring bottled water to school following a lead advisory issued by the city.

Infants and children are being found with elevated levels of lead in their blood since the city switched to using the Flint River as its water source, according to a new study by a Hurley Medical Center doctor.

The data showed that the percentage of infants and children with above-average lead levels has nearly doubled citywide, and has nearly tripled among children in "high risk" areas of lead exposure, according to the study.

The Flint School District issued an advisory Friday, Sept. 25, stating the district is developing an internal action plan to ensure student safety at school.

The district is asking that, effective immediately, families send their children to school with bottled water.

For those parents and families who are unable to send children to school with bottled water, Tawwab is asking for the community to fill in the gaps.

"I'm very excited, but I need for everyone in the community really wrap yourself around your community schools," he said. "We need all of our children to be in school ready to learn and to do that we need them to have excellent drinking water. So hopefully we'll all answer this call."

School officials have contacted the DEQ and will be getting the water from all the schools tested. Food preparation will also use bottled water where necessary until further notice.

Officials are working on turning off the switch to the drinking fountains in the schools and school administrators are being reminded to make sure students are supervised during school hours.

"I'm taking control over the part of the day I have control over. And that is the school day so I'm making sure while the kids are in my possession that they're going to have safe drinking water," Tawwab said.

Tawwab said he's proud that the school officials are doing what needs to be done to keep children safe and healthy, but now he's asking public officials to do the same.

"They are children here. So while the politicians want to sit back and talk about the water, whose responsibility it is, there are children here," Tawwab said. "This weekend, I'll be honest, I thought about my own youngsters in my family. I wouldn't have them drink the water. I wouldn't.

"Think about it. Even if they aren't your own children, there are children here and we must always think about making decisions that are best for our children. ... I want to see the city do what is best for kids. They must have clean drinking water."

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http://michiganradio.org/post/flint-officials-exploring-return-detroit-water#stream/0

Flint officials exploring return to Detroit water

Steve Carmody / Michigan Radio

City Administrator Natasha Henderson is talking with the different groups needed to make the switch back to the Detroit Water and Sewerage Department.

The city switched from DWSD about a year and a half ago to the Flint River for the city's drinking water. But the switch has been plagued with problems, from foul-smelling water to rising lead levels.

Mayor Dayne Walling says something must be done now.

"We need a comprehensive action plan in place this week," says Walling.

The state will likely be asked to play a critical financial role.

Money is the key obstacle. Walling estimates going babck to DWSD will cost the city of Flint an extra $1.5 million a month.

It was the rising cost of Detroit water that led state-appointed emergency managers to decide to switch the city of Flint to a new water source.

The emergency manager signed a deal to hook up Flint to the new Karegnondi pipeline. The KWA pipeline will carry water from Lake Huron to Genesee County. But the KWA won't be online until 2016.

The Flint River was intended to bridge the gap between the end of the DWSD contract and the beginning of the KWA contract.

But since the switch was thrown in April 2014, Flint residents have complained about the smell, taste and appearance of the city's tap water.

More problems followed, including E. coli outbreaks and high levels of a potentially cancer-causing chemical.

Recently, multiple reports have revealed rising lead levels in Flint drinking water and in the blood of the city's young children.

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http://www.freep.com/story/opinion/columnists/nancy-kaffer/2015/09/26/shortfalls-em-law-writ-large-flint-water-crisis/72811990/

Snyder must act on Flint lead crisis

By Nancy Kaffer, Detroit Free Press Columnist
11:11 a.m. EDT September 27, 2015

It's hard to understand the resounding yawn that seems to have emanated from the governor's office, following news that an increasing percentage of Flint kids have been lead poisoned after a switch in the city's water supply.

A spokeswoman for the Michigan Department of Health and Human Services sent a Free Press data analyst a chart she claimed would refute a report issued by a Hurley Medical Center researcher, who found that since the city started pumping water from the Flint River last April, the percentage of Flint kids with elevated blood-lead levels has more than doubled in some ZIP codes.

In fact, the state's data supports the Hurley researcher's claim — the number of kids with lead poisoning had been falling in Flint and across the state, until the water switch. Now it's increasing.

A spokeswoman for Gov. Rick Snyder wrote in an e-mail that the Hurley data had been “spliced and diced,” a suggestion that it’s something other than accurate — even though the state’s own data bolsters the Hurley report.

And officials across the administration have hastened to insist that Flint’s water is safe and to suggest that although published reports say Michigan Department of Environmental Quality data show elevated lead levels in Flint's water, there’s no reason to suspect that has caused more Flint kids to suffer from lead poisoning. And so far, none of it has it spurred them to action.

But here's the situation: There's more lead in Flint's water than there used to be. And more Flint kids have lead in their blood, something that leads to serious, irreversible behavioral and developmental problems.

How it happened

The City of Flint decided in 2013 to join the new Karegnondi Water Authority, along with Genesee, Sanilac and Lapeer counties. That system won't be complete until 2016. In the interim, the city — under former emergency manager Darnell Earley — opted to pump its water from the Flint River, instead of continuing to purchase it from the Detroit Water and Sewerage Department -- in part, state officials say, because DWSD planned to raise its rates for a short-term contract. The city considered blending Lake Huron and Flint River water, but ultimately chose to pull water from the Flint River alone. Genesee County, in contrast, will continue to purchase its water from DWSD while the new system is under construction.

Researchers say that Flint River water, more corrosive than the Lake Huron water pumped by the Detroit Water and Sewerage Department, is leaching lead from the city's aging infrastructure into the water supply.

The city, and its residents, need help. In the near term, residents — especially residents with formula-fed infants, whose diets are composed almost entirely of water — living in poverty need assistance to purchase bottled water or filtration systems. And the city needs to consider its long-term options, in particular, whether to reconnect to DWSD until the Karegnondi system is complete.

That wouldn't be a simple process. Former Flint EM Darnell Earley, now EM for Detroit Public Schools, wrote in an e-mailed statement that he was not involved in the decision to use river water, although it occurred during his tenure. He was also EM when a 9-mile section of pipe was sold to Genesee County, a decision he wrote was in the works before his appointment, meaning the city can't reconnect to the Detroit system without the cooperation of Genesee County.

Nor is the higher cost of buying water from DWSD — about $1.5 million a month — in the city's budget, Flint Mayor Dayne Walling said. The city, which emerged from state oversight this year, would need the approval of its transitional advisory board to increase its water budget.

Flint, by the way, is broke.

U.S. Rep. Dan Kildee and state Senate Majority Leader Jim Ananich, both Flint Democrats, have pledged to bring financial and practical assistance to the district.

For now, Walling said, Flint's water treatment plant will begin to add anticorrosive agents to the Flint River water, which will take weeks to impact the water supply.

If I lived in Flint, I'd be mad. If I were a Flint parent, with a child who'd spent the last year and a half drinking lead-contaminated water, I'd be in despair.

We're talking about a public health crisis — one that could have been avoided.

Whose fault is it?

During their tenures, emergency managers are the ultimate authority in the cities they serve.

And so the responsibility for Flint's water lies, ultimately, with Snyder, and the emergency managers he appointed — and it is Snyder who must come to Flint's rescue. Walling says Flint's residents need funds for immediate relief, but that the city needs grants to start to upgrade its aging, lead-ridden water infrastructure.

Snyder hasn't hesitated to appoint or retain emergency managers in struggling cities across the state, a stance the Free Press Editorial Board has largely supported, with one caveat: Emergency managers have to make things better.

That is the premise on which the emergency manager law is predicated. Cities are the creation of the state. The state has a responsibility to care for the health and welfare of its residents, and sometimes, cities face challenges not fixable at the local level. In those cases, the state must step in.

That's certainly the case in Flint, which has suffered from the same loss of population — and tax base — as Detroit, but with fewer assets with which to leverage a satisfactory outcome.

In those circumstances, the Free Press editorial board has argued, the state has a responsibility to act, to restore some fiscal stability, and thus service delivery and quality of life for residents.

That's the catch.

It'd be easy to balance any city's budget: Lay off all the cops, sell all the ambulances, liquidate the city parks. But that wouldn't make life better for residents. That's the balance emergency managers must be mindful of — cost savings versus quality of life. Spending cuts versus service delivery. A city's bottom line can't be profit-driven.

That is the glaring weakness in the emergency manager law, and it on full display in Flint.

Snyder spokeswoman Sara Wurfel said the state signed off on the switch at the behest of Walling and the Flint City Council, and only "with serious reservations."

That's not exactly how Walling remembers it.

"I didn't support it one way or the other," he said. "It wasn't my decision. I had a lot of concerns about it that I raised internally, but the budget was in place ... I had a lot of concerns about it, but when it was decided that was the decision ... I didn't protest."

When the Flint City Council voted this year to reconnect to the Detroit water system, then-emergency manager Jerry Ambrose called its decision "incomprehensible": "Water from Detroit is no safer than water from Flint," Ambrose said, as reported in the Flint Journal.

It's pretty clear that's not true. It's not clear what anyone from the State of Michigan is prepared to do about it.

Sixteen months ago, Earley and Walling celebrated the city's departure from DWSD, raising glasses of Flint River water, prepared to toss them back, with a toast that strikes a hollow note today: Here's to Flint.

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http://www.detroitnews.com/story/news/2015/09/28/snyder-urged-help-flint-reconnect-detroit-water/72999390/

Snyder urged to help Flint reconnect to Detroit water

Chad Livengood, Detroit News Lansing Bureau 7:21 a.m. EDT September 29, 2015

Lansing — Senate Minority Leader Jim Ananich urged Gov. Rick Snyder on Monday to help Flint switch back to Detroit's water system after medical researchers found elevated levels of lead in children who consumed water from the Flint River over the past year.

Ananich, a Democrat who represents Flint, said the city of 99,000 residents faces a "public health crisis" after pediatricians at Hurley Medical Center discovered higher levels of lead in the blood of Flint children tested since the city stopped buying drinking water from Detroit 18 months ago.

"I'm going to keep pushing for swift transfer back to Detroit," Ananich told The Detroit News. "I think that seems like the most logical decision to make at this point in time."

Flint residents have been complaining about the odor, taste and smell of the city's water since Flint stopped buying bulk water from Detroit's water department in April 2014 and started pumping drinking water from the Flint River. The river is serving as a temporary water source until a new regional pipeline from Lake Huron goes online in late 2016.

Ananich participated in a conference call with Snyder and members of his administration on Monday morning.

"I've been stressing an urgency, that this is a public health crisis and we need to get in front of it," Ananich said.

Ananich also sought emergency funding to supply Flint residents with bottled water and to purchase thousands of water filters for household faucets to help filter out lead from the city's aging lead-lined pipes that service some 15,000 customers.

Snyder spokeswoman Sara Wurfel said the governor's office is "reviewing" Ananich's ideas.

"We believe protecting public health is paramount and safe, clean, accessible drinking water is essential," Wurfel said. "That's what we are focused on helping ensure and deeply share the senator's commitment to helping address the issue."

Flint officials have said they stopped buying Detroit's water after the Detroit Water and Sewerage Department sought to hike the city's monthly water bill by $1.5 million until Flint switched over to the new Karegnondi Pipeline Authority next year.

Last week, Genesee County pediatricians released a study of blood levels of Flint children younger than 5 between January 2013 and September 2013 when Flint used Detroit's water and January and September of this year when residents drank Flint River water.

The study found blood levels of lead in Flint children nearly doubled and in two Flint ZIP codes, the lead levels tripled. Federal officials have previously cited Flint for having high levels of a disinfectant by-product.

In a letter to Snyder Monday, Ananich said the city needs the state's assistance in negotiating a short-term water purchasing contract with the Detroit Water and Sewerage Department until a new pipeline project can be complete.

Earlier this year, Flint leaders rebuffed an offer by Detroit officials to reconnect Flint for $12 million more annually, The Detroit News reported in February.

“Your administration has the ability to ensure a financially acceptable and responsible contract between Flint and the Detroit Water and Sewerage Department, particularly in light of the public health implications with the Flint River supply,” Ananich wrote to Snyder.

The governor’s office did not comment on Ananich’s desire to have Flint switch back to Detroit’s water supply.

But Wurfel noted the state has provided $4.2 million in grants and loans to help Flint add a carbon filtration system and test its water.

“We understand that residents are frustrated,” Wurfel said in an email.

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http://michiganradio.org/post/study-suggests-flints-water-causing-increased-lead-poisoning#stream/0

Study suggests Flint's water causing increased lead poisoning

Michigan Radio Stateside Staff • 16 hours ago

Last year, Flint ended five decades of service from the Detroit Water and Sewerage Department. The city’s going to take its water from a new pipeline from Lake Huron, but that won’t be ready until some time next year.

In the meantime, Flint decided that rather than continuing to pay for Detroit water, it would get its drinking water from the Flint River.

Almost immediately after making that change, residents began complaining about the way their drinking water looked, smelled and tasted. There were issues with the chemicals used to treat the river water.

And now a study performed by pediatrician Dr. Mona Hanna-Attisha of the Hurley Medical Center has found an increase in the number of Flint children who have been lead poisoned since the switch to the Flint River water.

Hanna-Attisha says she looked at the blood lead levels of Flint residents from before and after the switch, and noticed that the percentage of children with elevated blood lead levels just about doubled.

“Pre-switch percent of children with elevated blood (lead) levels was 2.1%, and then after the switch it was 4%,” she says.

She adds that the data for children in the rest of Genessee County, which is sticking with Detroit water until the new pipeline is ready, showed no statistical change in blood lead levels.

Even more troubling, Hanna-Attisha says that state and national data showed blood lead levels in children dropping consistently year over year before the switch due to, “great public health efforts and education efforts and lead abatement efforts.”

“Whenever you see that percentage staying the same or that percentage increasing, that is a red flag,” she says.

There has been some concern surrounding Flint’s infrastructure and how it affects the quality of the water, but Hanna-Attisha says that’s not the key factor here.

“Infrastructure has a role, but this infrastructure hasn’t changed. It was old then, it is old now, but these levels have increased. So what’s changed is... the water,” she says.

She explains that the Flint River water is more corrosive than the water from Lake Huron, so it is aging Flint’s existing water infrastructure and causing the leaching of lead from these pipes.

According to Hanna-Attisha, “mountains and mountains of research” show that lead poisoning is linked with decreased IQ, behavioral issues, ADHD-like symptoms, and higher rates of violent offenses and incarcerations.

“It’s just one of the absolute worst things that you could do for the life course of a child,” Hanna-Attisha says.

The State Department of Health and Human Services, the Department of Environmental Quality and the Governor's office have downplayed and in some cases attempted to discredit Hanna-Attisha’s findings, but she isn’t swayed.

“I think it’s fascinating, because if you look at their data, it pretty much shows the exact same thing. Every year there was a decrease in the total percentage of kids with elevated blood lead levels, and then the year after the switch it jumped up.” she says. “You can’t fight the numbers, the numbers are there, everything is consistent.”

Hanna-Attisha advises that children, formula-fed infants and pregnant mothers in the area avoid tap water.

As for everyone else, she suggests running the water for five or so minutes before using it and only using cold water for cooking.

Here's a quick explainer for those trying to get a better understanding of the complicated water issues in Flint.

-Ryan Grimes, Stateside

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http://michiganradio.org/post/anger-over-flints-water-woes-reaching-boiling-point#stream/0

Anger over Flint's water woes is reaching a boiling point

Steve Carmody, Michigan Radio • 17 hours ago

Dozens of people chanted “Fresh, Clean Water” as they jammed the lobby of Flint city hall Monday.

The anger over the city’s long-simmering water problems is reaching a boiling point.

People have been complaining since April of last year, when the city switched from Detroit water to the Flint River as the city’s source of drinking water.

Concerns about the water’s taste and smell have been replaced by fears of rising lead levels in Flint’s drinking water. Virginia Tech researchers blame the "corrosiveness" of the Flint River for the elevated lead levels. Other research shows children’s blood lead levels in Flint have doubled since the switch.

A coalition of groups say the time has passed for further testing.

Pastor Allen Overton is calling on Gov. Snyder and Flint's elected leaders to immediately return to getting the city's drinking water from Detroit.

"If we do not get any response from either of them, we will begin to protest in this city like they have never seen before," says Overton.

Flint pastors plan to meet with their attorney tomorrow to review their options.

Meanwhile, Gov. Snyder says his office is talking with Flint leaders and collecting facts. The governor declined to say what action might be taken next.

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http://michiganradio.org/post/bottled-water-donations-flowing-flint-schools#stream/0

Bottled water donations flowing into Flint schools

Steve Carmody, Michigan Radio • 18 hours ago

It took five Home Depot employees a couple trips to unload a pickup truck filled with dozens of cases of bottled water into a classroom at a Flint elementary school this afternoon.

The donation was the largest, but far from the only, bottled water donation to Flint schools today.

School Superintendent Bilal Tawwab asked for donations after reports that Flint's drinking water contains "serious" lead levels. Last week, local hospital officials announced their tests showed blood lead levels in children in Flint had nearly doubled since the switch.

The timeline corresponds with the city's switch from the Detroit Water and Sewerage Department to the Flint River as the source of its drinking water.

Children are especially at risk when exposed to high lead levels.

Tawwab is grateful for the response his request has received so far. But he adds the more than 5,000 students in the Flint Community Schools will need more.

"We need a lot more donations like this," Tawwab said as he stood in front of the 80-plus cases donated by two local Home Depots. "We just want to be able to meet the demand … so we're just going to take as much as you guys will give."

Tawwab says he's asked the Michigan Department of Environmental Quality to come in and test the water in Flint school buildings.

He also asked state and local officials to come up with a solution to Flint's water woes.

Researchers from Virginia Tech blame the highly "corrosive" nature of the Flint River. They claim the river water is breaking down lead pipes and lead solder used in water pipes, creating lead levels in some homes at above 15 parts per billion.

Flint Mayor Dayne Walling has asked the state for $30 million to address the problem. $10 million would be for replacing lead pipes.

Jeff Kelley
Director, Office of External Communications
U.S. EPA Region 5
ph: 312-353-1159

To: Glowacki, Joanna[glowacki.joanna@epa.gov]
From: Deltoral, Miguel
Sent: Tue 9/29/2015 3:24:10 PM
Subject: Fw: Flint Corrosion Control?

Miguel A. Del Toral
Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

From: Cook, Pat (DEQ) <COOKP@michigan.gov>
Sent: Friday, May 1, 2015 10:38 AM
To: Deltoral, Miguel
Cc: Porter, Andrea; Crooks, Jennifer; Poy, Thomas; Benzie, Richard (DEQ); Busch, Stephen (DEQ)
Subject: RE: Flint Corrosion Control?

Hi Miguel - sorry, I should have been more specific in my previous email. The rules you stated below allow large systems to be considered having optimal corrosion control if they have data from two consecutive 6 month monitoring periods that meet specific criteria. DEQ-ODWMA has not made a formal decision as to whether or not the City of Flint meets the exemption criteria or will be required to do a corrosion control study since Flint has only completed one round of 6 month monitoring. The City of Flint's second round of monitoring will be completed by June 30, 2015, and we will make a formal decision at that time. If my memory is correct, this is consistent with the process followed in the early 1990's for large systems when the Pb/Cu rule was first implemented. The Department waits until large systems complete both rounds of full scale, 6 month monitoring before making a decision about optimal corrosion control. If it is determined that Flint has to install corrosion control treatment, the rule allows up to 2 years to complete a study and 2 additional years to install the treatment unless we set a shorter time frame.

As Flint will be switching raw water sources in a just over one year from now, raw water quality will be completely different than what they currently use. Requiring a study at the current time will be of little to no value in the long term control of these chronic contaminants.

Finally, the City of Flint's sampling protocols for lead and copper monitoring comply will all current state and federal requirements. Any required modifications will be implemented at the time when such future regulatory requirements take effect.

Patrick Cook, P.E.

Community Drinking Water Unit

Office of Drinking Water & Municipal Assistance

Michigan Department of Environmental Quality

Phone: (517) 284-6514

cookp@michigan.gov

From: Deltoral, Miguel [mailto:deltoral.miguel@epa.gov]
Sent: Saturday, April 25, 2015 10:11 AM
To: Cook, Pat (DEQ)
Cc: Porter, Andrea; Crooks, Jennifer; Poy, Thomas
Subject: Re: Flint Corrosion Control?

Hi Pat,

I'll be heading out to MI for RTCR tomorrow and won't see email until next Tuesday, but I wanted to follow up on this because Flint has essentially not been using any corrosion control treatment since April 30, 2014 and they have LSLs. Given the very high lead levels found at one home and the pre-flushing happening at Flint, I'm worried that the whole town may have much higher lead levels than the compliance results indicated, since they are using pre-flushing ahead of their compliance sampling.

If the source water lead is non-detect (zero), then according to 141.89(a)(3) they should use zero for that source water value:

"All lead and copper levels measured between the PQL and MDL must be either reported as measured or they can be reported as one-half the PQL specified for lead and copper in paragraph (a)(1)(ii) of this section. All levels below the lead and copper MDLs must be reported as zero."

As far as the treatment determination, there are only two scenarios for a large system to be deemed to have optimized corrosion control without treatment and Flint does not appear to meet either:

The first is at 141.81(b)(3)

Any water system is deemed to have optimized corrosion control if it submits results of tap water monitoring conducted in accordance with § 141.86 and source water monitoring conducted in accordance with § 141.88 that demonstrates for two consecutive 6-month monitoring periods that the difference between the 90th percentile tap water lead level computed under §141.80(c)(3), and the highest source water lead concentration is less than the Practical Quantitation Level for lead specified in § 141.89(a)(1)(ii).

If Flint's highest source water lead was zero, and their 90th percentile was 0.006, then Flint does not meet this criteria, because the difference must be LESS THAN the PQL (i.e., 0.004 or less). 0.006 - 0 = 0.006.

The second is at 141.81(b)(3)(i):

Those systems whose highest source water lead level is below the Method Detection Limit may also be deemed to have optimized corrosion control under this paragraph if the 90th percentile tap water lead level is less than or equal to the Practical Quantitation Level for lead for two consecutive 6-month monitoring periods.

Although Flint's source water lead was non-detect (zero), the 90th percentile lead level is 0.006 which is above the PQL of 0.005, so Flint would not meet this criteria either.

Am I missing something?

Miguel A. Del Toral

Regulations Manager
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Phone: (312) 886-5253

From: Cook, Pat (DEQ) <COOKP@michigan.gov>
Sent: Friday, April 24, 2015 12:45 PM
To: Deltoral, Miguel
Subject: RE: Flint Corrosion Control?

Total Lead collected from the plant tap on 5/22/14 was zero.

pat

From: Deltoral, Miguel [mailto:deltoral.miguel@epa.gov]
Sent: Friday, April 24, 2015 11:59 AM
To: Cook, Pat (DEQ)
Cc: Poy, Thomas; Porter, Andrea
Subject: Re: Flint Corrosion Control?

What was the source water lead level?

Miguel A. Del Toral

Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

From: Cook, Pat (DEQ) <COOKP@michigan.gov>
Sent: Friday, April 24, 2015 10:43 AM

To: Deltoral, Miguel
Cc: Poy, Thomas; Porter, Andrea
Subject: RE: Flint Corrosion Control?

Hi Miguel - Flint is currently not practicing corrosion control treatment at the WTP. When they started treating water at their WTP last spring, we placed them on full chart (100 sites) Pb/Cu monitoring for two consecutive 6 month periods. WQ monitoring is also being conducted. The first round of samples after switch-over from DWSD (July 1, 2014 – Dec 31, 2014) had 90th percentiles of 6 ppb for Lead and 110 ppb for Copper. The second round of samples (Jan 1, 2015 – June 30, 2015) is underway with approximately 20 of the 100 sample site results in. The highest lead result out of the 20 received thus far is 13 ppb.

Based on the matrix of recommended corrosion control study components for Large PWS's for both Lead and Copper, there are no additional requirements for the City of Flint based on the levels of lead and copper in the current source water and the results of the lead and copper distribution monitoring. The only provision of the Lead & Copper Rule which classifies the existing treatment of large PWSs as optimized for corrosion control is when the difference between the 90% Pb-TAP and Pb-POE is less than the lead practical quantitative level (PQL) for each six-month period of the initial monitoring program. By definition, the PQL for lead is 0.005 mg/L; and the lead value for the source water used in this determination is the highest source water lead concentration. If this condition is met, then no study or testing is required. We believe this condition has been met for Flint. However, we will re-evaluate this after the 2nd round of 6 month sampling is completed.

If you have any further questions, please contact the Lansing District Supervisor, Steve Busch at (517) 643-2314 or at buschs@michigan.gov.

Have a good (and hopefully warm) weekend!

Patrick Cook, P.E.

Community Drinking Water Unit

Office of Drinking Water & Municipal Assistance

Michigan Department of Environmental Quality

Phone: (517) 284-6514

cookp@michigan.gov

From: Deltoral, Miguel [mailto:deltoral.miguel@epa.gov]
Sent: Thursday, April 23, 2015 12:33 PM
To: Cook, Pat (DEQ)
Cc: Poy, Thomas; Porter, Andrea
Subject: Flint Corrosion Control?

Hi Pat,

What's Flint doing now (post Detroit) for corrosion control treatment?

Miguel A. Del Toral

Regulations Manager

Ground Water and Drinking Water Branch

77 West Jackson Blvd (WG-15J)

Chicago, IL 60604

Phone: (312) 886-5253

To: Bair, Rita[bair.rita@epa.gov]; Deltoral, Miguel[deltoral.miguel@epa.gov]; Damato, Nicholas[damato.nicholas@epa.gov]; Poy, Thomas[poy.thomas@epa.gov]; Porter, Andrea[porter.andrea@epa.gov]; Glowacki, Joanna[glowacki.joanna@epa.gov]; Darman, Leslie[Darman.Leslie@epa.gov]; Crooks, Jennifer[crooks.jennifer@epa.gov]
From: Shoven, Heather
Sent: Tue 9/29/2015 4:58:59 PM
Subject: FYI from HQ: Flint happenings

From: King, Carol
Sent: Tuesday, September 29, 2015 11:53 AM
To: Shoven, Heather
Subject: FW: Flint happenings

From: Grevatt, Peter
Sent: Tuesday, September 29, 2015 12:48 PM
To: Hannon, Arnita
Cc: Asher, Jonathan; Clark, Becki; Christ, Lisa; King, Carol; Burneson, Eric; Lopez-Carbo, Maria; Hannon, Arnita; Galada, Heather; Greene, Ashley; Hedman, Susan
Subject: Re: Flint happenings

Thanks Arnita. I had not seen this. Please let me know if you need any assistance from us.

Sent from my iPhone

On Sep 29, 2015, at 11:40 AM, Hannon, Arnita <Hannon.Arnita@epa.gov> wrote:

> FYI! Sorry if you already have this but just making sure.
>
> Thank you!
>
> Sent from my iPhone
>
> Begin forwarded message:
>
> > **From:** "Rupp, Mark" <Rupp.Mark@epa.gov>
> > **Date:** September 29, 2015 at 12:33:36 PM EDT

To: "Hannon, Arnita" <Hannon.Arnita@epa.gov>, "Barbery, Andrea" <Barbery.Andrea@epa.gov>, "Cook-Shyovitz, Becky" <Cook-Shyovitz.Becky@epa.gov>, "Bowles, Jack" <Bowles.Jack@epa.gov>
Subject: Flint happenings

The State and City are pulling together a "ten point plan" and they have asked for EPA's help to work out the details. The goal is to have a press conference on Thursday or Friday to announce the following:

1. Bottled water and pre-mixed formula for households with infants and children (the Michigan Department of Health and Human Services is working with USDA to do this through the WIC program)

2. Lead filters for households with infants and children (a group of nonprofits has pledged $1 million for this purpose and will be working with the Meijer discount chain to obtain filters at wholesale.)

3. Water will be tested for lead in all Flint schools. (MDEQ)

4. Water will be tested for lead in all Flint households with lead service lines that have infants and children. (MDEQ)

5. All other Flint households can request a free water test. (MDEQ)

6. The State will step up health advisory/public education efforts to encourage flushing and use of filters (MDEQ/MDHHS)

7. MDEQ will establish an end date for Flint to complete implementation of fully-optimized corrosion control – and move up the start date to commence implementation of corrosion control. (The current start date is 1/16)

8. MDEQ will expand the City's Technical Advisory Committee by adding several University of Michigan scientists and will immediately convene the committee. (This committee includes ORD scientists from the Cincinnati Lab)

9. The State of Michigan's "Chief Medical Executive" will oversee a review of data that has been collected on Flint children's blood lead levels.

10. MDEQ will help Flint finance accelerated replacement of lead service lines (using SRF)

The Mayor and Director Wyant have asked Susan to go to Flint to participate in the press conference. The Mayor has also asked Susan to meet with a group of faith leaders who have been very vocal on this issue: http://www.abc12.com/home/headlines/Rally-held--329788391.html

To: Hedman, Susan[hedman.susan@epa.gov]
From: Hyde, Tinka
Sent: Tue 9/29/2015 5:11:41 PM
Subject: Re: Inquiry from Michigan Radio re Flint drinking water

Yes essentially we've moved beyond the recommendations. Also, staff are working on Flint issues.

Sent from my iPhone

On Sep 29, 2015, at 10:22 AM, Hedman, Susan <hedman.susan@epa.gov> wrote:

> I am wondering why this memo hasn't been finalized. Is it because events have overtaken it -- in other words, is it the case that the recommendations in the memo have already been/are being implemented?
>
> Sent from my iPhone
>
> Begin forwarded message:
>
>> **From:** "Kelley, Jeff" <kelley.jeff@epa.gov>
>> **Date:** September 28, 2015 at 2:48:53 PM CDT
>> **To:** "Hedman, Susan" <hedman.susan@epa.gov>
>> **Cc:** "Hyde, Tinka" <hyde.tinka@epa.gov>, "Poy, Thomas" <poy.thomas@epa.gov>
>> **Subject: Inquiry from Michigan Radio re Flint drinking water**
>>
>> Susan,
>>
>> Michigan Radio is asking:
>>
>> Back in July the ACLU leaked an interim EPA report related to higher than allowable lead levels in the city of Flint. I was told then that because the report had not been finalized, the EPA could not comment on it beyond a written statement.
>>
>> Curious if that report has been finalized? If not, do you have any idea when it might be? Obviously it's sort of a hot topic again and we've gotten a few

inquiries. If it is, could I get a copy of it? Or would I need to FOIA?

The draft response below is based on input from Tom Poy and the previous approved desk statement:

EPA is working to finalize the field report. In the meantime, EPA and the Michigan Department of Environmental Quality are working closely with the city of Flint to ensure that residents are provided with safe drinking water. In response to EPA and MDEQ recommendations, Flint has decided to implement corrosion control treatment and will receive EPA technical assistance to help with that effort.

EPA advises everyone across the country to flush their pipes before drawing drinking water to reduce exposure to lead. The more time water has been sitting in your home's pipes, the more lead it may contain. Anytime the water in a particular faucet has not been used for six hours or longer, "flush" the cold-water pipes by running the water before drinking and remember to use only cold water for drinking, cooking, and preparing baby formula. Flushing times can vary based on the plumbing configuration in the home and whether the home has a lead service line.

Flint residents that are concerned about lead in their drinking water should contact the water utility and may request sampling. Additional information about lead in drinking water is available at: http://water.epa.gov/drink/contaminants/basicinformation/lead.cfm.

Jeff Kelley
Director, Office of External Communications
U.S. EPA Region 5
ph: 312-353-1159

To: Kuefler, Janet[kuefler.janet@epa.gov]; Poy, Thomas[poy.thomas@epa.gov]
Cc: Shoven, Heather[shoven.heather@epa.gov]; Porter, Andrea[porter.andrea@epa.gov]; Deltoral, Miguel[deltoral.miguel@epa.gov]
From: Crooks, Jennifer
Sent: Tue 9/29/2015 5:14:34 PM
Subject: RE: MDEQ policy under LCR

The original letter that described the Modified Consecutive System approach for Detroit (1991 letter), stated there were 5 water treatment plants using 3 intakes in Lake Huron and in the Detroit River, and all the network of transmission mains, pump stations and reservoirs were under the control of DWSD. The wholesale customers did not alter the water quality or pressure or have the capability to provide additional treatment. At that time, the State said that the individual customers would have no practical way to implement corrosion control measures because of multiple feed points with water delivered on demand from various Detroit reservoirs and different pressure districts. (Flint was not discussed specifically in this letter). It made sense to treat the entire Detroit service area as one system; then all the consecutive systems would be on the same schedule, would sample during the same time periods, and this data would all feed back to the 5 water treatment plants, so they could design the appropriate CCT.

I believe the 90th percentile of lead in Flint during the Detroit days, was 6ppb. So, if a water system is exceeding the AL and it is a consecutive system, the State could say that it has OCCT, and the system would need to do PE and replace LSLs, according to the rule. If the rule doesn't require it, the State most likely won't do it under the current thinking at MDEQ.

But, it would be a reasonable request to negotiate a change in the consecutive system policy. Each system will be a unique situation, depending on wholesale OCCT, piping network, source water, feed points from various sources in the distribution system. Most consecutive systems in Detroit in the early 90's had no treatment, so if no existing treatment, adding CCT could be quite expensive.

Another issue to ponder.

Jennifer

From: Kuefler, Janet
Sent: Tuesday, September 29, 2015 7:37 AM
To: Poy, Thomas
Cc: Shoven, Heather; Porter, Andrea; Deltoral, Miguel; Crooks, Jennifer
Subject: MDEQ policy under LCR

http://www.michigan.gov/documents/deq/deq-odwma-399-027_409221_7.pdf

I think you have probably seen this policy already. Do adjustments need to be made to this policy to give responsibility for OCT to consecutives on the Modified Consecutive Systems approach, and not just the wholesaler?

Janet Kuefler

Ground Water and Drinking Water Branch

State Programs Team Leader

United States Environmental Protection Agency, Region 5

77 West Jackson Blvd. (WG-15J)

Chicago, Illinois 60604

(312) 886-0123

kuefler.janet@epa.gov

To: Crooks, Jennifer[crooks.jennifer@epa.gov]
From: Porter, Andrea
Sent: Tue 9/29/2015 5:34:18 PM
Subject: FW: flint --> lcr milestone data in sdwis/fed (no info for flint; deem for detroit)
mi_lcr_milestones.xlsx

fyi

From: Porter, Andrea
Sent: Wednesday, July 01, 2015 2:08 PM
To: Kuefler, Janet; MIGUEL DEL TORAL; Bair, Rita; Damato, Nicholas; Shoven, Heather; Crooks, Jennifer
Subject: flint --> lcr milestone data in sdwis/fed (no info for flint; deem for detroit)

Hi All,

Miguel asked for the LCR milestone data we have in SDWIS/FED for Flint and Detroit. I thought it might be useful for the whole group. For reference, all of the DEEM, DONE, and LSLR data for MI from SDWIS/FED is attached.

There is nothing in SDWIS/FED for Flint DEEM, DONE, or LSLR. There is a DEEM for Detroit, as follows:

PWSID	PWS_NAME	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MI0001800411	DETROIT CITY OF	6/30/1999	5/19/2004	DEEM	System deemed optimized without OCCT	B3	Serving greater than 50,000: met action levels

Isn't it well known that SDWIS/FED data for LCR milestones are unreliable and incomplete? As such, I'm not sure how much we can read into Flint not having any DEEM or DONE milestones in our database.

If there are any other data questions, just let me know. I'm happy to help.

Thanks,

Andrea Porter

Environmental Engineer

Ground Water & Drinking Water Branch

U.S. EPA, Region 5 (WG-15J)

77 W. Jackson Blvd.

Chicago, IL 60604

Phone: 312-886-4427

Fax: 312-697-2656

From: Kuefler, Janet
Sent: Wednesday, July 01, 2015 1:08 PM
To: MIGUEL DEL TORAL; Bair, Rita; Damato, Nicholas; Shoven, Heather; Crooks, Jennifer; Porter, Andrea
Subject: RE: Long term treatment change/new source citations

I am just wondering when Detroit was deemed optimized, did the notification automatically apply to the consecutives, and were they notified, or did each consecutive get treated as an individual system with separate notification of optimization.

Did the state approve the new source in writing per 141.90 (a)(3)

(3) At a time specified by the State,

or if no specific time is designated by

the State, then as early as possible

prior to the addition of a new source or

any long-term change in water treatment, a water system deemed to have optimized corrosion control under § 141.81(b)(3), a water system subject to reduced monitoring pursuant to § 141.86(d)(4), or a water system subject to a monitoring waiver pursuant to § 141.86(g), shall submit written documentation to the State describing the change or addition. The State must review and approve the addition of a new source or long-term change in treatment before it is implemented by the water system. Examples of long-term treatment changes include the addition of a new treatment process or modification of an existing treatment process. Examples of modifications include switching secondary disinfectants, switching coagulants (e.g., alum to ferric chloride), and switching corrosion inhibitor products (e.g., orthophosphate to blended phosphate). Long-term changes can include dose changes to existing chemicals if the system is planning long-term changes to its finished water pH or residual inhibitor concentration. Long-term treatment changes would not include chemical dose fluctuations associated

with daily raw water quality changes

Janet Kuefler

Ground Water and Drinking Water Branch

State Programs Team Leader

United States Environmental Protection Agency, Region 5

77 West Jackson Blvd. (WG-15J)

Chicago, Illinois 60604

(312) 886-0123

kuefler.janet@epa.gov

From: MIGUEL DEL TORAL [mailto:thedeltorals@sbcglobal.net]
Sent: Wednesday, July 01, 2015 11:25 AM
To: Bair, Rita; Damato, Nicholas; Shoven, Heather; Crooks, Jennifer; Kuefler, Janet; Porter, Andrea
Subject: Long term treatment change/new source citations

Here are the three places that discuss long-term treatment change and new source requirements and state authorities.

Long-term Change(s) in Treatment or Addition of New Source(s)

This first provision applies to systems that are deemed optimized in accordance with the criteria in 141.81(b)(3) [low lead levels]

141.81(b)(3)(iii)

Any water system deemed to have optimized corrosion control pursuant to this paragraph shall notify the State in writing pursuant to § 141.90(a)(3) of any upcoming long-term change in treatment or addition of a new source as described in that section. The State must review and approve the addition of a new source or long-term change in water treatment before it is implemented by the water system. The State may require any such system to conduct additional monitoring or to take other action the State deems appropriate to ensure that such systems maintain minimal levels of corrosion in the distribution system.

This second provision applies to all systems on reduced monitoring

141.86(d)(4)(vii)

Any water system subject to a reduced monitoring frequency under paragraph (d)(4) of this section shall notify the State in writing in accordance with § 141.90(a)(3) of any upcoming long-term change in treatment or addition of a new source as described in that section. The State must review and approve the addition of a new source or long-term change in water treatment before it is implemented by the water system. The State may require the system to resume sampling in accordance with paragraph (d)(3) of this section and collect the number of samples specified for standard monitoring under paragraph (c) of this section or take other appropriate steps such as increased water quality parameter monitoring or re-evaluation of its corrosion control treatment given the potentially different water quality considerations.

This third provision is only applicable to systems that get lead/copper monitoring waivers and would not apply to Flint.

141.86(g)(4)(iii)

Any water system with a full or partial waiver shall notify the State in writing in accordance with § 141.90(a)(3) of any upcoming long-term change in treatment or addition of a new source, as described in that section. The State must review and approve the addition of a new source or long-term change in water treatment before it is implemented by the water system. The State has the authority to require the system to add or modify waiver conditions (e.g., require recertification that the system is free of lead-containing and/or copper-containing materials, require additional round(s) of monitoring), if it deems such modifications are necessary to address treatment or source water changes at the system.

Miguel

To: Shoven, Heather[shoven.heather@epa.gov]; Darman, Leslie[Darman.Leslie@epa.gov]; Deltoral, Miguel[deltoral.miguel@epa.gov]; Kempic, Jeffrey[Kempic.Jeffrey@epa.gov]; Moriarty, Edward[Moriarty.EdwardJ@epa.gov]
Cc: Crooks, Jennifer[crooks.jennifer@epa.gov]; Porter, Andrea[porter.andrea@epa.gov]
From: Glowacki, Joanna
Sent: Tue 9/29/2015 5:59:13 PM
Subject: Re: Regulatory basis for Detroit's status as deemed optimized

;;;;;ATTORNEY CLIENT COMMUNICATION
DELIBERATIVE
NOT FOR RELEASE
FOIA EXEMPT

Attorney Client / Ex. 5

Joanna Glowacki
Associate Regional Counsel
U.S. EPA, Region 5
77 West Jackson Boulevard (C-14J)
Chicago, IL 60604
312-353-3757

From: Shoven, Heather
Sent: Tuesday, September 29, 2015 12:42:37 PM
To: Darman, Leslie; Deltoral, Miguel; Kempic, Jeffrey; Moriarty, Edward
Cc: Glowacki, Joanna; Crooks, Jennifer; Porter, Andrea
Subject: RE: Regulatory basis for Detroit's status as deemed optimized

Hi Leslie,

I think that Miguel is out of the office after 12pm Eastern today.

Attorney Client / Ex. 5

Attorney Client / Ex. 5

Best wishes,

Heather

Heather A. Shoven | Enforcement Team Leader | U.S. Environmental Protection Agency, Region 5

Ground Water and Drinking Water Branch | 77 W. Jackson Blvd (WG-15J) | Chicago, IL 60604 | 312-886-0153

From: Darman, Leslie
Sent: Tuesday, September 29, 2015 11:32 AM
To: Deltoral, Miguel; Shoven, Heather; Kempic, Jeffrey; Moriarty, Edward
Cc: Glowacki, Joanna
Subject: Regulatory basis for Detroit's status as deemed optimized

Attorney Client / Ex. 5

Leslie Darman

Office of General Counsel

Water Law Office

202-564-5452

To: Hyde, Tinka[hyde.tinka@epa.gov]
From: Hedman, Susan
Sent: Wed 9/30/2015 1:17:55 AM
Subject: Fwd: From NPR News - High Lead in Flint, MI kids after city switches water source

Sent from my iPhone

Begin forwarded message:

> **From:** "Jencius, Morgan" <jencius.morgan@epa.gov>
> **Date:** September 29, 2015 at 8:13:54 PM CDT
> **To:** "Kelley, Jeff" <kelley.jeff@epa.gov>
> **Cc:** "Hedman, Susan" <hedman.susan@epa.gov>, "Kaplan, Robert" <kaplan.robert@epa.gov>
> **Subject: Fwd: From NPR News - High Lead in Flint, MI kids after city switches water source**
>
> FYI
>
> > **Date: September 29, 2015**
> >
> > **Subject: From NPR News - High Lead in Flint, MI kids after city switches water source**
> >
> > This article was posted to NPR website tonight. It mentions the draft EPA R5 report (from June 24, 2015) and includes MDEQ quotes that "this was done by a rogue [EPA] employee" and to "wait until final report comes out."
> >
> > High Lead Levels In Michigan Kids After City Switches Water Source
> > http://n.pr/1Gf3MbA

To: Schock, Michael[Schock.Michael@epa.gov]; Lytle, Darren[Lytle.Darren@epa.gov]; Burneson, Eric[Burneson.Eric@epa.gov]; demarco.carol@epa.gov[demarco.carol@epa.gov]; Murphy, Thomas[murphy.thomas@epa.gov]; Shoven, Heather[shoven.heather@epa.gov]; Deltoral, Miguel[deltoral.miguel@epa.gov]
From: Marc Edwards
Sent: Wed 9/30/2015 3:34:06 AM
Subject: WHAT ARE YOU GUYS DOING DOWN THERE?

Wurfel says to NPR you have to poison kids for a year before implementing corrosion control, and to determine the right orthophosphate dose?

Eric, is this going to be part of the new improved LCR? And is EPA going to hand Miguel's draft memo to Wurfel, to finalize and/or approve? Wurfel PROMISES THAT the final memo is going to tell a different story. And Miguel is now a ROGUE EPA employee?

EPA Office of Water and EPA Region 5 are a national embarrassment. You have a city in crisis, kids with elevated blood lead, and NO CORROSION CONTROL PLAN FOR 16 MONTHS, and yet you sit there and do absolutely nothing.

Marc

http://www.npr.org/2015/09/29/444497051/high-lead-levels-in-michigan-kids-after-city-switches-water-source

A draft report from the EPA that was obtained by the ACLU of Michigan also takes the city and state to task.

"Prior to April 30, 2014, the City of Flint purchased finished water from the City of Detroit which contained orthophosphate, a treatment chemical used to control lead and copper levels in the drinking water," the report read, adding that the treatment was discontinued after the switch to Flint River water.

"In accordance with the Lead and Copper Rule (LCR), all large systems ... are required to install and maintain corrosion control treatment for lead and copper. In the absence of any corrosion control treatment, lead levels in drinking water can be expected to increase," the report continued.

A Solution May Be Near

But officials with the Michigan Department of Environmental Quality dispute the findings of the draft report. MDEQ spokesman Brad Wurfel says the report was the work of a "rogue employee," and promised the final report — not yet released — would tell a much different story.

"You have to have to do a full year of studying" the water chemistry as it behaves across the system before implementing corrosion control, Wurfel says, adding that's the only way to know how much phosphate to add to the water.

To: Crooks, Jennifer[crooks.jennifer@epa.gov]; Kuefler, Janet[kuefler.janet@epa.gov]; Poy, Thomas[poy.thomas@epa.gov]
Cc: Shoven, Heather[shoven.heather@epa.gov]; Porter, Andrea[porter.andrea@epa.gov]
From: Deltoral, Miguel
Sent: Wed 9/30/2015 11:19:56 AM
Subject: Re: MDEQ policy under LCR

I suggest we postpone this discussion until we get the final memo done. If mgmt agrees, maybe that can be included in the letter to MDEQ transmitting the memo.

Miguel A. Del Toral
Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

From: Crooks, Jennifer
Sent: Tuesday, September 29, 2015 12:14 PM
To: Kuefler, Janet; Poy, Thomas
Cc: Shoven, Heather; Porter, Andrea; Deltoral, Miguel
Subject: RE: MDEQ policy under LCR

The original letter that described the Modified Consecutive System approach for Detroit (1991 letter), stated there were 5 water treatment plants using 3 intakes in Lake Huron and in the Detroit River, and all the network of transmission mains, pump stations and reservoirs were under the control of DWSD. The wholesale customers did not alter the water quality or pressure or have the capability to provide additional treatment. At that time, the State said that the individual customers would have no practical way to implement corrosion control measures because of multiple feed points with water delivered on demand from various Detroit reservoirs and different pressure districts. (Flint was not discussed specifically in this letter). It made sense to treat the entire Detroit service area as one system; then all the consecutive systems would be on the same schedule, would sample during the same time periods, and this data would all feed back to the 5 water treatment plants, so they could design the appropriate CCT.

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But, it would be a reasonable request to negotiate a change in the consecutive system policy. Each system will be a unique situation, depending on wholesale OCCT, piping network, source water, feed points from various sources in the distribution system. Most consecutive systems in Detroit in the early 90's had no treatment, so if no existing treatment, adding CCT could be quite expensive.

Another issue to ponder.

Jennifer

From: Kuefler, Janet
Sent: Tuesday, September 29, 2015 7:37 AM
To: Poy, Thomas
Cc: Shoven, Heather; Porter, Andrea; Deltoral, Miguel; Crooks, Jennifer
Subject: MDEQ policy under LCR

http://www.michigan.gov/documents/deq/deq-odwma-399-027_409221_7.pdf

I think you have probably seen this policy already. Do adjustments need to be made to this policy to give responsibility for OCT to consecutives on the Modified Consecutive Systems approach, and not just the wholesaler?

Janet Kuefler

Ground Water and Drinking Water Branch

State Programs Team Leader

United States Environmental Protection Agency, Region 5

77 West Jackson Blvd. (WG-15J)

Chicago, Illinois 60604

(312) 886-0123

kuefler.janet@epa.gov

To: Damato, Nicholas[damato.nicholas@epa.gov]; Shoven, Heather[shoven.heather@epa.gov]
From: Deltoral, Miguel
Sent: Wed 9/30/2015 11:35:47 AM
Subject: Re: FYI from HQ: Flint happenings

Same concern. I talked with Mike Schock about how we might be able to help Flint find the lead line sites. There is some good work that was done up north in Canada with some equipment that might be useable in Flint. Starting estimate per Mike - the analyzer runs under $2000 per unit, and it would essentially cost about $8 per test to check the home. This willl add up unless we can definiitely identify the areas with the lead lines. There are ways to prioritize which homes to check first.

The other issue is that Mike and Darren are going to need data (lots of it) to make appropriate recommendations. The only way to do that is boots on the ground. I think the MI universities may be able to help with sample collection and WQ measurements that and I assume our lab can run the samples. Virginia Tech might be interested in helping out as well since **I think** I saw that the City has invited Marc for the advisory meetings.

Miguel A. Del Toral
Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

From: Damato, Nicholas
Sent: Tuesday, September 29, 2015 12:40 PM
To: Shoven, Heather
Subject: RE: FYI from HQ: Flint happenings

Hi Heather,

Interesting message. Begs a couple of questions though. Have they suddenly discovered where all of the lead service lines are? They didn't seem to know before. What sampling protocol are they going to use when sampling the schools and homes? Will the samples from the households be considered compliance samples? Will Darren & Mike be the EPA folks helping to "work out the details"? (I hope so – everything else is either Flint or the state). I would hope the plan gets a "thumbs up" from our technical folks before we go out publically endorsing it.

Nick

From: Shoven, Heather
Sent: Tuesday, September 29, 2015 11:59 AM
To: Bair, Rita; Deltoral, Miguel; Damato, Nicholas; Poy, Thomas; Porter, Andrea; Glowacki, Joanna; Darman, Leslie; Crooks, Jennifer
Subject: FYI from HQ: Flint happenings

From: King, Carol
Sent: Tuesday, September 29, 2015 11:53 AM
To: Shoven, Heather
Subject: FW: Flint happenings

From: Grevatt, Peter
Sent: Tuesday, September 29, 2015 12:48 PM
To: Hannon, Arnita
Cc: Asher, Jonathan; Clark, Becki; Christ, Lisa; King, Carol; Burneson, Eric; Lopez-Carbo, Maria; Hannon, Arnita; Galada, Heather; Greene, Ashley; Hedman, Susan
Subject: Re: Flint happenings

Thanks Arnita. I had not seen this. Please let me know if you need any assistance from us.

Sent from my iPhone

On Sep 29, 2015, at 11:40 AM, Hannon, Arnita <Hannon.Arnita@epa.gov> wrote:

> FYI! Sorry if you already have this but just making sure.
>
> Thank you!

Sent from my iPhone

Begin forwarded message:

> **From:** "Rupp, Mark" <Rupp.Mark@epa.gov>
> **Date:** September 29, 2015 at 12:33:36 PM EDT
> **To:** "Hannon, Arnita" <Hannon.Arnita@epa.gov>, "Barbery, Andrea" <Barbery.Andrea@epa.gov>, "Cook-Shyovitz, Becky" <Cook-Shyovitz.Becky@epa.gov>, "Bowles, Jack" <Bowles.Jack@epa.gov>
> **Subject: Flint happenings**
>
> The State and City are pulling together a "ten point plan" and they have asked for EPA's help to work out the details. The goal is to have a press conference on Thursday or Friday to announce the following:
>
> 1. Bottled water and pre-mixed formula for households with infants and children (the Michigan Department of Health and Human Services is working with USDA to do this through the WIC program)
>
> 2. Lead filters for households with infants and children (a group of nonprofits has pledged $1 million for this purpose and will be working with the Meijer discount chain to obtain filters at wholesale.)
>
> 3. Water will be tested for lead in all Flint schools. (MDEQ)
>
> 4. Water will be tested for lead in all Flint households with lead service lines that have infants and children. (MDEQ)
>
> 5. All other Flint households can request a free water test. (MDEQ)
>
> 6. The State will step up health advisory/public education efforts to encourage flushing and use of filters (MDEQ/MDHHS)

7. MDEQ will establish an end date for Flint to complete implementation of fully-optimized corrosion control – and move up the start date to commence implementation of corrosion control. (The current start date is 1/16)

8. MDEQ will expand the City's Technical Advisory Committee by adding several University of Michigan scientists and will immediately convene the committee. (This committee includes ORD scientists from the Cincinnati Lab)

9. The State of Michigan's "Chief Medical Executive" will oversee a review of data that has been collected on Flint children's blood lead levels.

10. MDEQ will help Flint finance accelerated replacement of lead service lines (using SRF)

The Mayor and Director Wyant have asked Susan to go to Flint to participate in the press conference. The Mayor has also asked Susan to meet with a group of faith leaders who have been very vocal on this issue: http://www.abc12.com/home/headlines/Rally-held--329788391.html

To: Damato, Nicholas[damato.nicholas@epa.gov]; Bair, Rita[bair.rita@epa.gov]; Poy, Thomas[poy.thomas@epa.gov]; Porter, Andrea[porter.andrea@epa.gov]; Crooks, Jennifer[crooks.jennifer@epa.gov]; King, Carol[King.Carol@epa.gov]; Darman, Leslie[Darman.Leslie@epa.gov]; Glowacki, Joanna[glowacki.joanna@epa.gov]
Cc: Deltoral, Miguel[deltoral.miguel@epa.gov]
From: Shoven, Heather
Sent: Wed 9/30/2015 12:31:22 PM
Subject: FYI from Marc Edwards: WHAT ARE YOU GUYS DOING DOWN THERE?

From: Marc Edwards [mailto:edwardsm@vt.edu]
Sent: Tuesday, September 29, 2015 10:34 PM
To: Schock, Michael; Lytle, Darren; Burneson, Eric; demarco.carol@epa.gov; Murphy, Thomas; Shoven, Heather; Deltoral, Miguel
Subject: WHAT ARE YOU GUYS DOING DOWN THERE?

Wurfel says to NPR you have to poison kids for a year before implementing corrosion control, and to determine the right orthophosphate dose?

Eric, is this going to be part of the new improved LCR? And is EPA going to hand Miguel's draft memo to Wurfel, to finalize and/or approve? Wurfel PROMISES THAT the final memo is going to tell a different story. And Miguel is now a ROGUE EPA employee?

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A Solution May Be Near

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"You have to have to do a full year of studying" the water chemistry as it behaves across the system before implementing corrosion control, Wurfel says, adding that's the only way to know how much phosphate to add to the water.

To: Damato, Nicholas[damato.nicholas@epa.gov]; Bair, Rita[bair.rita@epa.gov]; Poy, Thomas[poy.thomas@epa.gov]; Porter, Andrea[porter.andrea@epa.gov]; Crooks, Jennifer[crooks.jennifer@epa.gov]; King, Carol[King.Carol@epa.gov]; Darman, Leslie[Darman.Leslie@epa.gov]; Glowacki, Joanna[glowacki.joanna@epa.gov]
Cc: Deltoral, Miguel[deltoral.miguel@epa.gov]
From: Shoven, Heather
Sent: Wed 9/30/2015 12:31:22 PM
Subject: FYI from Marc Edwards: WHAT ARE YOU GUYS DOING DOWN THERE?

....
;;;;;;;

From: Marc Edwards [mailto:edwardsm@vt.edu]
Sent: Tuesday, September 29, 2015 10:34 PM
To: Schock, Michael; Lytle, Darren; Burneson, Eric; demarco.carol@epa.gov; Murphy, Thomas; Shoven, Heather; Deltoral, Miguel
Subject: WHAT ARE YOU GUYS DOING DOWN THERE?

Wurfel says to NPR you have to poison kids for a year before implementing corrosion control, and to determine the right orthophosphate dose?

Eric, is this going to be part of the new improved LCR? And is EPA going to hand Miguel's draft memo to Wurfel, to finalize and/or approve? Wurfel PROMISES THAT the final memo is going to tell a different story. And Miguel is now a ROGUE EPA employee?

EPA Office of Water and EPA Region 5 are a national embarrassment. You have a city in crisis, kids with elevated blood lead, and NO CORROSION CONTROL PLAN FOR 16 MONTHS, and yet you sit there and do absolutely nothing.

Marc

http://www.npr.org/2015/09/29/444497051/high-lead-levels-in-michigan-kids-after-city-switches-water-source

A draft report from the EPA that was obtained by the ACLU of Michigan also takes the city and state to task.

"Prior to April 30, 2014, the City of Flint purchased finished water from the City of Detroit which contained orthophosphate, a treatment chemical used to control lead and copper levels in the drinking water," the report read, adding that the treatment was discontinued after the switch to Flint River water.

"In accordance with the Lead and Copper Rule (LCR), all large systems ... are required to install and maintain corrosion control treatment for lead and copper. In the absence of any corrosion control treatment, lead levels in drinking water can be expected to increase," the report continued.

A Solution May Be Near

But officials with the Michigan Department of Environmental Quality dispute the findings of the draft report. MDEQ spokesman Brad Wurfel says the report was the work of a "rogue employee," and promised the final report — not yet released — would tell a much different story.

"You have to have to do a full year of studying" the water chemistry as it behaves across the system before implementing corrosion control, Wurfel says, adding that's the only way to know how much phosphate to add to the water.

To: Deltoral, Miguel[deltoral.miguel@epa.gov]; Kuefler, Janet[kuefler.janet@epa.gov]; Poy, Thomas[poy.thomas@epa.gov]
Cc: Shoven, Heather[shoven.heather@epa.gov]; Porter, Andrea[porter.andrea@epa.gov]
From: Crooks, Jennifer
Sent: Wed 9/30/2015 12:36:35 PM
Subject: RE: MDEQ policy under LCR

Yes, I didn't think this would be a discussion for now. I agree, Miguel.

Jen

From: Deltoral, Miguel
Sent: Wednesday, September 30, 2015 6:20 AM
To: Crooks, Jennifer; Kuefler, Janet; Poy, Thomas
Cc: Shoven, Heather; Porter, Andrea
Subject: Re: MDEQ policy under LCR

I suggest we postpone this discussion until we get the final memo done. If mgmt agrees, maybe that can be included in the letter to MDEQ transmitting the memo.

Miguel A. Del Toral

Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

From: Crooks, Jennifer
Sent: Tuesday, September 29, 2015 12:14 PM
To: Kuefler, Janet; Poy, Thomas
Cc: Shoven, Heather; Porter, Andrea; Deltoral, Miguel
Subject: RE: MDEQ policy under LCR

The original letter that described the Modified Consecutive System approach for Detroit (1991 letter), stated there were 5 water treatment plants using 3 intakes in Lake Huron and in the Detroit River, and all the network of transmission mains, pump stations and reservoirs were under the control of DWSD. The wholesale customers did not alter the water quality or pressure or have the capability to provide additional treatment. At that time, the State said that the individual customers would have no practical way to implement corrosion control measures because of multiple feed points with water delivered on demand from various Detroit reservoirs and different pressure districts. (Flint was not discussed specifically in this letter). It made sense to treat the entire Detroit service area as one system; then all the consecutive systems would be on the same schedule, would sample during the same time periods, and this data would all feed back to the 5 water treatment plants, so they could design the appropriate CCT.

I believe the 90th percentile of lead in Flint during the Detroit days, was 6ppb. So, if a water system is exceeding the AL and it is a consecutive system, the State could say that it has OCCT, and the system would need to do PE and replace LSLs, according to the rule. If the rule doesn't require it, the State most likely won't do it under the current thinking at MDEQ.

But, it would be a reasonable request to negotiate a change in the consecutive system policy. Each system will be a unique situation, depending on wholesale OCCT, piping network, source water, feed points from various sources in the distribution system. Most consecutive systems in Detroit in the early 90's had no treatment, so if no existing treatment, adding CCT could be quite expensive.

Another issue to ponder.

Jennifer

From: Kuefler, Janet
Sent: Tuesday, September 29, 2015 7:37 AM
To: Poy, Thomas
Cc: Shoven, Heather; Porter, Andrea; Deltoral, Miguel; Crooks, Jennifer
Subject: MDEQ policy under LCR

http://www.michigan.gov/documents/deq/deq-odwma-399-027_409221_7.pdf

I think you have probably seen this policy already. Do adjustments need to be made to this policy to give responsibility for OCT to consecutives on the Modified Consecutive Systems approach, and not just the wholesaler?

Janet Kuefler

Ground Water and Drinking Water Branch

State Programs Team Leader

United States Environmental Protection Agency, Region 5

77 West Jackson Blvd. (WG-15J)

Chicago, Illinois 60604

(312) 886-0123

kuefler.janet@epa.gov

To: Hedman, Susan[hedman.susan@epa.gov]; Kaplan, Robert[kaplan.robert@epa.gov]; Hyde, Tinka[hyde.tinka@epa.gov]
Cc: Fortin, Denise[Fortin.Denise@epa.gov]; Deamer, Eileen[deamer.eileen@epa.gov]; Rowan, Anne[rowan.anne@epa.gov]; Cassell, Peter[cassell.peter@epa.gov]; Beckmann, Ronna Erin[beckmann.ronna@epa.gov]; Harrison, Melissa[Harrison.Melissa@epa.gov]; Arcaute, Francisco[Arcaute.Francisco@epa.gov]; Poy, Thomas[poy.thomas@epa.gov]
From: Kelley, Jeff
Sent: Wed 9/30/2015 12:49:25 PM
Subject: Flint water clips for the morning of Sept. 30

This morning's clips:

- □□□□□□□□ High Lead Levels In Michigan Kids After City Switches Water Source (NPR)

- □□□□□□□□ Report: Using Flint River proving costly to city's water system (Michigan Radio)

- □□□□□□□□ Gov's office helps get water filters to Flint families (Detroit News)

- □□□□□□□□ Flint mayor to state: Approve plan "as fast as humanly possible" to help keep lead out of water (Michigan Radio)

- □□□□□□□□ Have you missed parts of the Flint water story? Here's a quick rundown. (Michigan Radio)

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High Lead Levels In Michigan Kids After City Switches Water Source

NPR All Things Considered

September 29, 2015 6:01 PM ET

Doctors are finding elevated levels of lead in the children in Flint, Mich., and local tap water is the likely cause.

That's the latest alarming news to come out of the city, which switched its water source about a year and a half ago.

A pediatrician with Hurley Medical Center analyzed lead levels of hundreds of children. She compared blood tests before and after April 2014. That's when Flint, unable to come to an agreement on a short-term contract with Detroit, quit buying water from its system, and signed on with a new system that will draw water from Lake Huron.

But that system won't be online until next year. So in the interim, with assurances from the state that it would be safe, the city decided to pump water from the Flint River.

Dr. Mona Hanna-Attisha's research found that the percentage of Flint children 5 years and younger with elevated lead levels nearly doubled after the switch, from 2.1 percent to 4 percent.

"My research shows that lead levels have gone up," Hanna-Attisha says. "I cannot say it's from the water. But that's, you know, the thing that has happened."

A Cascade Of Problems

The news did not surprise Lee Anne Walters. She suspected the water had something to do with health problems in her 4-year-old son, Gavin.

"I kept talking to the doctors, trying to figure out why he wasn't growing," she says. "He was 27 pounds at 4 years old. His hair was thinning, breaking out in rashes."

Complaints about foul-smelling, discolored water began soon after the city started drawing water from the Flint River. In the summer of 2014, the city issued a notice for residents to boil their water because of E. coli contamination.

Then the city was found to be in violation of the Safe Drinking Water Act because of high levels of a disinfectant byproduct called total trihalomethanes — an unintended consequence from all the chlorine the city had to use to kill the E. coli.

Walters says her whole family broke out in rashes, and they stopped drinking the water in December.

Then, in February of this year, the city tested her water for lead.

"And I got a frantic phone call from the water department telling me to please make sure my kids didn't drink the water, don't mix their juice with it, because they had never seen a number that high for lead," she says.

After that, Walters decided to take Gavin in to be tested for lead.

He'd been tested before the city switched its water source. At that time, he had a level of 2 micrograms of lead per deciliter of blood. After the switch, his level was 6.5.

The Centers for Disease Control and Prevention says a level of 5 is considered "much higher" than that found in most children. It also says there is no safe level of lead exposure — and the effects, like lower IQ, are irreversible.

A Failure Of Government?

The day after Hanna-Attisha released her findings, the city put out a lead advisory, urging people to flush their pipes, install inexpensive filters, and use cold water for mixing baby formula.

"As a father, I want every family and household in the city of Flint to be safe and secure," Mayor Dayne Walling said at a press conference to announce the advisory.

Over the summer, researchers from Virginia Tech found that Flint River water is highly corrosive. That means when it comes into contact with lead from service lines, household pipes or solder, it eats away at the lead and sends it right to people's faucets.

City officials and state regulators say they're now putting together a corrosion control plan to reduce lead exposure.

"Flint is the only city in America that I'm aware of that does not have a corrosion control plan," said Virginia Tech's Marc Edwards, who led the research.

Edwards also uncovered lead contamination in Washington, D.C. He says Flint's lead levels are not as high, and the exposure period is not as long as it was in that city. But he has some harsh criticism of city and state officials for how they've handled the Flint situation.

"It was clearly a failure of government agencies to do their job to protect the public," says Edwards, citing the absence of a corrosion control plan from the outset.

A draft report from the EPA that was obtained by the ACLU of Michigan also takes the city and state to task.

"Prior to April 30, 2014, the City of Flint purchased finished water from the City of Detroit which contained orthophosphate, a treatment chemical used to control lead and copper levels in the drinking water," the report read, adding that the treatment was discontinued after the switch to Flint River water.

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An announcement about the corrosion control plan is expected soon. Meanwhile, city officials are showing increasing interest in returning to Detroit's water system — something that even a few days ago they dismissed as economically unfeasible for the cash-strapped city.

Whatever the solution, residents like Lee Anne Walters say they hope the city can reach one soon.

"I want them to take responsibility," Walters says. "I want them to quit poisoning their citizens."

http://michiganradio.org/post/report-using-flint-river-proving-costly-citys-water-system#stream/0

Report: Using Flint River proving costly to city's water system

Steve Carmody, Michigan Radio • 28 minutes ago

A new report (http://flintwaterstudy.org/) estimates it will cost the city of Flint $1.5 billion to repair the damage done since the switch to the Flint River as a water source.

Researchers from Virginia Tech based their estimate on the tests of the corrosiveness of the Flint River.

The researchers say the corrosiveness is “eating away” lead pipes, aging the system by more than 11.5 years in just the last 16 months.

City and state leaders are talking about taking steps to fix Flint’s water problems.

One option on the table might be returning to Detroit water. But Flint will probably need help from the state to do that.

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http://www.detroitnews.com/story/news/politics/2015/09/29/govs-office-helps-get-water-filters-flint-families/73055442/

Gov's office helps get water filters to Flint families

Chad Livengood, Detroit News Lansing Bureau 6:30 p.m. EDT September 29, 2015

Gov. Rick Snyder's office quietly orchestrated the distribution of 1,500 water filters to Flint families this summer while insisting the city's water is safe to drink.

In July, Snyder's office worked with an anonymous corporate donor to distribute the faucet filters through a group of Flint pastors, Snyder spokesman Dave Murray said Tuesday. It was unclear who initiated the plan — the donor, the governor's office or someone else.

"We worked with the pastors' group to distribute the filters and asked that members respect the donor's wishes not to be identified," Murray said. "We told the group that we're not looking for credit and appreciated the pastors' efforts in working with the community on this effort."

Snyder's office acknowledged its role Tuesday in handing out the free filters to Flint residents while pressure is mounting on state agencies to fix Flint's troubled water system. A study last week showed elevated levels of lead in the blood of Flint children younger than 5.

"People have complained about the color and the odor, and faucet filters will help with those challenges as well as improving water quality overall," Murray said.

The governor's office is in discussions with "a number of groups that are interested" in distributing more faucet filters, Murray said.

The water filters can remove chemical compounds as well as lead, a toxic metal that can hinder brain development in young children even at low levels, according to the U.S. Environmental Protection Agency.

Flint residents began complaining about the taste and color of the city's water in April 2014 when the city halted a half-century of purchasing water from the Detroit Water and Sewerage Department and started pumping drinking water from the Flint River.

River water is a trickier source for municipal cleaning and distribution than Lake Huron, where the Detroit system gets its water. The deeper, still waters of the lake contain few of the organic materials found in river water and require a different treatment protocol.

The Flint River is serving as a temporary water source until the city can connect to a new regional water pipeline from Lake Huron that won't be ready until late 2016.

A year ago, General Motors' Flint Engine Operations plant stopped using the city's river because of concerns about corrosive effects and now gets its water from Flint Township.

Last week, pediatricians at Hurley Medical Center released a study of blood levels of Flint children younger than 5 between January 2013 and September 2013 when Flint used Detroit's water and January and September of this year when residents drank Flint River water.

But Flint's water tested below the federal limit for lead in the Michigan Department of Environmental Quality's 2014 testing, DEQ spokesman Brad Wurfel said Tuesday.

Still, the state agency is working closely to address a "crisis of confidence" among Flint residents, Wurfel said. "Even though it is meeting standards, there is a significant concern in the city of Flint," he said.

Senate Minority Leader Jim Ananich, D-Flint, has urged Snyder to seek emergency funding to distribute faucet filters to about 15,000 Flint homes.

Ananich also wants the governor to get Flint reconnected to Detroit's water system.

In January, the Detroit water system offered to reconnect water service to Flint because of the complaints. Flint officials rebuffed the offer, saying an analysis concluded it would cost Flint an additional $12 million per year or more.

Snyder has been non-committal to Ananich's proposals, but said Tuesday his administration will be taking action soon.

"I have a large team of people working on the Flint water issue as we speak," Snyder said after an event in Lansing. "What I would say is during the course of the week or early next week, hopefully we'll be coming out with more public action steps ... and more action steps to take in the future.

"I take it as a serious issue, the Flint water situation. Lead's a serious issue, so we're spending a lot of time and effort looking at that and trying to partner with the people in Flint on that issue."

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http://michiganradio.org/post/flint-mayor-state-approve-plan-fast-humanly-possible-help-keep-lead-out-water#stream/0

Flint mayor to state: Approve plan "as fast as humanly possible" to help keep lead out of water

Lindsey Smith , Michigan Radio • 14 hours ago

Flint hasn't been using any corrosion-control method since it switched from Detroit's water system in April 2014. Corrosion-control treatment helps keep lead out of drinking water. Since the switch, more kids are showing up with elevated levels of lead in their blood.

Flint Mayor Dayne Walling says he wants to put corrosion-control treatment back in place, but he needs state approval first. The state says it's going to take a little while to implement.

"One of my requests to (Michigan's) Department of Environmental Quality director is that (approval) be accelerated as fast as humanly possible," Walling said.

"Whatever decisions are coming next, we need that corrosion control in the water treatment process that we have now," he said.

Walling was a guest today on Stateside with Cynthia Canty. (Listen to Flint Mayor Dayne Walling on Stateside: http://cpa.ds.npr.org/michigan/audio/2015/09/20150929-SS-FLINT-WATER.mp3)

Flint spokesman Jason Lorenz says MDEQ made the recommendation to put corrosion-control treatment into the water supply last month. But, he says, it needs MDEQ Director Dan Wyant's official approval.

There's been some debate over whether Flint should have had corrosion control in place the entire time.

MDEQ officials have argued to the U.S. Environmental Protection Agency that corrosion control is not technically required yet, because the Flint River is a new water source.

“You have to have to do a full year of studying” the water chemistry as it behaves across the system before implementing corrosion control, MDEQ spokesman Brad Wurfel said. He says that’s the only way to know what corrosion-control treatment to use.

That period of study was to be completed by June 30.

As the DEQ reads federal regulations, Flint technically has up to two years after the study to install treatment. But Wurfel says an announcement on the state's decision will come by the end of this week, and "the prescription for optimizing the system for corrosion control is going to be done in Flint by the end of this year."

"We have a plan to expedite this with the city ... and folks can take some comfort in that," Wurfel said.

It's not clear yet how much the treatment will cost, but Wurfel says "this won't break the bank." A state-appointed emergency manager made the interim switch to the Flint River to save the city money.

The U.S. Environmental Protection Agency has not yet answered this question: Was Flint required to have some form of corrosion-control treatment the whole time?

At face value, the EPA rules are clear, all water systems that serve more than 50,000 people must have some kind of corrosion control.

But when you switch water sources, there is apparently some room for interpretation.

In approving updates to this federal regulation in 2000, the EPA noted that “water systems need to make treatment changes, on occasion, to react to changing circumstances.”

In these cases, the rule does not “prevent a state from approving treatment changes,” but it’s not entirely clear if the state can approve having zero corrosion-control treatment.

One key section of the rule change reads:

“One commenter requested that EPA clarify in the rule language that (large water) systems are not required to have (corrosion-control treatment) physically present. EPA disagrees that this is appropriate.”

“For large water systems, (the federal rule) does not eliminate the need to have any (corrosion-control treatment) in place, unless the water system can demonstrate to the satisfaction of the State that such treatment will have no effect on reducing the levels of lead and copper at the tap … EPA expects few, if any, large water systems can make this demonstration without (corrosion-control treatment).”

Flint residents can be sure about one thing: This period of study and approval won’t happen the next time the city switches water sources.

The city expects to stop using the Flint River when a new regional water system in Genesee County is completed, slated for the end of 2016. According the MDEQ’s Brad Wurfel, that’s because they won’t need to study the nature of the new water source – Lake Huron. Because Detroit’s water system uses water from Lake Huron, Flint will be able to use the same corrosion-control treatment it did when it was hooked up to Detroit’s system.

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http://michiganradio.org/post/have-you-missed-parts-flint-water-story-heres-quick-rundown#stream/0

Have you missed parts of the Flint water story? Here's a quick rundown.

Michigan Radio Newsroom • Sep 25, 2015

Flint switched its drinking water source in April of 2014. The city went from Detroit water to water from the Flint River, and there have been problems ever since.

Most recently, residents have been enraged to hear about elevated lead levels in kids. At this point, Flint residents have been unsure about the safety of their water for over a year.

Here's a quick rundown of the problems some Flint residents have been complaining about.

Discoloration and smell

Water issues started right after the switch as residents complained that the new water smelled and tasted different. City officials issued boil water advisories but insisted this was not connected to the switch.

E. coli

Tests of Flint water showed high levels of bacteria, including E. coli. Residents were issued a number of boil water notices.

Chlorine

To address the increased E. coli levels, the city pumped more chlorine into the system as a disinfectant.

TTHM

In January of 2015, residents received warnings that their water didn't meet federal safety standards because tests were showing higher rates of total trihalomethane. TTHM is a byproduct of the chlorine that had been used to address earlier problems. Too much TTHM increases the risk of cancer. Average TTHM levels did not fall to acceptable levels againuntil late this summer.

Lead

In January 2015, the University of Michigan-Flint conducted tests of its own water. Some of their samples contained "high levels of lead." At that time, researchers said the lead levels were high in those samples because the water was spending a lot of time sitting in old pipes.

Activists started asking for courts to force the city to go back to Detroit water in April. Those requests fell short.

An EPA memo leaked in July documented "extremely high levels at one woman's home, high enough that her son got lead poisoning."

Researchers from Virginia Tech tested samples from nearly 300 Flint homes in September. Their findings showed 'seriously' high levels of lead.

On September 24, Flint pediatricians announced their findings that the percentage of Flint children with elevated blood levels has almost doubled since the water source switch.

Jeff Kelley
Director, Office of External Communications
U.S. EPA Region 5
ph: 312-353-1159

To: Meiburg, Stan[Meiburg.Stan@epa.gov]; Burke, Thomas[Burke.Thomas@epa.gov]; Kopocis, Ken[Kopocis.Ken@epa.gov]; Reynolds, Thomas[Reynolds.Thomas@epa.gov]; Vaught, Laura[Vaught.Laura@epa.gov]; Fritz, Matthew[Fritz.Matthew@epa.gov]
From: Hedman, Susan
Sent: Wed 9/30/2015 1:55:13 PM
Subject: Fwd: Flint water clips for the morning of Sept. 30

Please pay close attention to the first clip -- which aired on NPR last night. The MDEQ spokesman's reference to an EPA "rogue employee" is something that we are going to need to address -- both with MDEQ and the public. As I understand it, this employee had been asked to prepare a memo on with the Flint water system to update R5 Water Division management on the situation in Flint -- and he shared a draft internal memo with Citizen name / Ex. 6 to get her OK to include data about her child's lead levels (and she subsequently gave the draft to the ACLU.) While EPA employees should not be sharing internal draft documents with the public -- I think he was well-intentioned and I don't think he should be publicly branded as a "rogue employee." Moreover, many of the recommendations in the draft memo are the very steps that MDEQ and the City are now taking to address the lead problem. When we talk later today, I'd like some advice on how best to address this.

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September 29, 2015 6:01 PM ET

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"I kept talking to the doctors, trying to figure out why he wasn't growing," she says. "He was 27 pounds at 4 years old. His hair was thinning, breaking out in rashes."

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A Failure Of Government?

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The researchers say the corrosiveness is “eating away” lead pipes, aging the system by more than 11.5 years in just the last 16 months.

City and state leaders are talking about taking steps to fix Flint’s water problems.

One option on the table might be returning to Detroit water. But Flint will probably need help from the state to do that.

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http://www.detroitnews.com/story/news/politics/2015/09/29/govs-office-helps-get-water-filters-flint-families/73055442/

Gov's office helps get water filters to Flint families

Chad Livengood, Detroit News Lansing Bureau 6:30 p.m. EDT September 29, 2015

Gov. Rick Snyder's office quietly orchestrated the distribution of 1,500 water filters to Flint families this summer while insisting the city's water is safe to drink.

In July, Snyder's office worked with an anonymous corporate donor to distribute the faucet filters through a group of Flint pastors, Snyder spokesman Dave Murray said Tuesday. It was unclear who initiated the plan — the donor, the governor's office or someone else.

"We worked with the pastors' group to distribute the filters and asked that members respect the donor's wishes not to be identified," Murray said. "We told the group that we're not looking for credit and appreciated the pastors' efforts in working with the community on this effort."

Snyder's office acknowledged its role Tuesday in handing out the free filters to Flint residents while pressure is mounting on state agencies to fix Flint's troubled water system. A study last week showed elevated levels of lead in the blood of Flint children younger than 5.

“People have complained about the color and the odor, and faucet filters will help with those challenges as well as improving water quality overall,” Murray said.

The governor’s office is in discussions with “a number of groups that are interested” in distributing more faucet filters, Murray said.

The water filters can remove chemical compounds as well as lead, a toxic metal that can hinder brain development in young children even at low levels, according to the U.S. Environmental Protection Agency.

Flint residents began complaining about the taste and color of the city’s water in April 2014 when the city halted a half-century of purchasing water from the Detroit Water and Sewerage Department and started pumping drinking water from the Flint River.

River water is a trickier source for municipal cleaning and distribution than Lake Huron, where the Detroit system gets its water. The deeper, still waters of the lake contain few of the organic materials found in river water and require a different treatment protocol.

The Flint River is serving as a temporary water source until the city can connect to a new regional water pipeline from Lake Huron that won’t be ready until late 2016.

A year ago, General Motors’ Flint Engine Operations plant stopped using the city’s river because of concerns about corrosive effects and now gets its water from Flint Township.

Last week, pediatricians at Hurley Medical Center released a study of blood levels of Flint children younger than 5 between January 2013 and September 2013 when Flint used Detroit’s water and January and September of this year when residents drank Flint River water.

But Flint's water tested below the federal limit for lead in the Michigan Department of Environmental Quality's 2014 testing, DEQ spokesman Brad Wurfel said Tuesday.

Still, the state agency is working closely to address a "crisis of confidence" among Flint residents, Wurfel said. "Even though it is meeting standards, there is a significant concern in the city of Flint," he said.

Senate Minority Leader Jim Ananich, D-Flint, has urged Snyder to seek emergency funding to distribute faucet filters to about 15,000 Flint homes.

Ananich also wants the governor to get Flint reconnected to Detroit's water system.

In January, the Detroit water system offered to reconnect water service to Flint because of the complaints. Flint officials rebuffed the offer, saying an analysis concluded it would cost Flint an additional $12 million per year or more.

Snyder has been non-committal to Ananich's proposals, but said Tuesday his administration will be taking action soon.

"I have a large team of people working on the Flint water issue as we speak," Snyder said after an event in Lansing. "What I would say is during the course of the week or early next week, hopefully we'll be coming out with more public action steps ... and more action steps to take in the future.

"I take it as a serious issue, the Flint water situation. Lead's a serious issue, so we're spending a lot of time and effort looking at that and trying to partner with the people in Flint on that issue."

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http://michiganradio.org/post/flint-mayor-state-approve-plan-fast-humanly-possible-help-keep-lead-out-water#stream/0

Flint mayor to state: Approve plan “as fast as humanly possible” to help keep lead out of water

Lindsey Smith , Michigan Radio • 14 hours ago

Flint hasn’t been using any corrosion-control method since it switched from Detroit’s water system in April 2014. Corrosion-control treatment helps keep lead out of drinking water. Since the switch, more kids are showing up with elevated levels of lead in their blood.

Flint Mayor Dayne Walling says he wants to put corrosion-control treatment back in place, but he needs state approval first. The state says it’s going to take a little while to implement.

“One of my requests to (Michigan’s) Department of Environmental Quality director is that (approval) be accelerated as fast as humanly possible,” Walling said.

“Whatever decisions are coming next, we need that corrosion control in the water treatment process that we have now,” he said.

Walling was a guest today on Stateside with Cynthia Canty. (Listen to Flint Mayor Dayne Walling on Stateside: http://cpa.ds.npr.org/michigan/audio/2015/09/20150929-SS-FLINT-WATER.mp3)

Flint spokesman Jason Lorenz says MDEQ made the recommendation to put corrosion-control treatment into the water supply last month. But, he says, it needs MDEQ Director Dan Wyant's official approval.

There's been some debate over whether Flint should have had corrosion control in place the entire time.

MDEQ officials have argued to the U.S. Environmental Protection Agency that corrosion control is not technically required yet, because the Flint River is a new water source.

"You have to have to do a full year of studying" the water chemistry as it behaves across the system before implementing corrosion control, MDEQ spokesman Brad Wurfel said. He says that's the only way to know what corrosion-control treatment to use.

That period of study was to be completed by June 30.

As the DEQ reads federal regulations, Flint technically has up to two years after the study to install treatment. But Wurfel says an announcement on the state's decision will come by the end of this week, and "the prescription for optimizing the system for corrosion control is going to be done in Flint by the end of this year."

"We have a plan to expedite this with the city ... and folks can take some comfort in that," Wurfel said.

It's not clear yet how much the treatment will cost, but Wurfel says "this won't break the bank." A state-appointed emergency manager made the interim switch to the Flint River to save the city money.

The U.S. Environmental Protection Agency has not yet answered this question: Was Flint required to have some form of corrosion-control treatment the whole time?

At face value, the EPA rules are clear, all water systems that serve more than 50,000 people must have some kind of corrosion control.

But when you switch water sources, there is apparently some room for interpretation.

In approving updates to this federal regulation in 2000, the EPA noted that "water systems need to make treatment changes, on occasion, to react to changing circumstances."

In these cases, the rule does not "prevent a state from approving treatment changes," but it's not entirely clear if the state can approve having zero corrosion-control treatment.

One key section of the rule change reads:

"One commenter requested that EPA clarify in the rule language that (large water) systems are not required to have (corrosion-control treatment) physically present. EPA disagrees that this is appropriate."

"For large water systems, (the federal rule) does not eliminate the need to have any (corrosion-control treatment) in place, unless the water system can demonstrate to the satisfaction of the State that such treatment will have no effect on reducing the levels of lead and copper at the tap … EPA expects few, if any, large water systems can make this demonstration without (corrosion-control treatment)."

Flint residents can be sure about one thing: This period of study and approval won't happen the next time the city switches water sources.

The city expects to stop using the Flint River when a new regional water system in Genesee County is completed, slated for the end of 2016. According the MDEQ's Brad Wurfel, that's because they won't need to study the nature of the new water source – Lake Huron. Because Detroit's water system uses water from Lake Huron, Flint will be able to use the same corrosion-control treatment it did when it was hooked up to Detroit's system.

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http://michiganradio.org/post/have-you-missed-parts-flint-water-story-heres-quick-rundown#stream/0

Have you missed parts of the Flint water story? Here's a quick rundown.

Michigan Radio Newsroom • Sep 25, 2015

Flint switched its drinking water source in April of 2014. The city went from Detroit water to water from the Flint River, and there have been problems ever since.

Most recently, residents have been enraged to hear about elevated lead levels in kids. At this point, Flint residents have been unsure about the safety of their water for over a year.

Here's a quick rundown of the problems some Flint residents have been complaining about.

Discoloration and smell

Water issues started right after the switch as residents complained that the new water smelled and tasted different. City officials issued boil water advisories but insisted this was not connected to the switch.

E. coli

Tests of Flint water showed high levels of bacteria, including E. coli. Residents were issued a number of boil water notices.

Chlorine

To address the increased E. coli levels, the city pumped more chlorine into the system as a disinfectant.

TTHM

In January of 2015, residents received warnings that their water didn't meet federal safety standards because tests were showing higher rates of total trihalomethane. TTHM is a byproduct of the chlorine that had been used to address earlier problems. Too much TTHM increases the risk of cancer. Average TTHM levels did not fall to acceptable levels againuntil late this summer.

Lead

In January 2015, the University of Michigan-Flint conducted tests of its own water. Some of their samples contained "high levels of lead." At that time, researchers said the lead levels were high in those samples because the water was spending a lot of time sitting in old pipes.

Activists started asking for courts to force the city to go back to Detroit water in April. Those requests fell short.

An EPA memo leaked in July documented "extremely high levels at one woman's home, high enough that her son got lead poisoning."

Researchers from Virginia Tech tested samples from nearly 300 Flint homes in September. Their findings showed 'seriously' high levels of lead.

On September 24, Flint pediatricians announced their findings that the percentage of Flint children with elevated blood levels has almost doubled since the water source switch.

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Jeff Kelley
Director, Office of External Communications
U.S. EPA Region 5
ph: 312-353-1159

To: Hedman, Susan[hedman.susan@epa.gov]
From: Hyde, Tinka
Sent: Wed 9/30/2015 4:35:54 PM
Subject: Fwd: Help with the All Ages Lead Model?

Sent from my iPhone

Begin forwarded message:

From: "Henry, Timothy" <henry.timothy@epa.gov>
Date: September 30, 2015 at 7:30:33 AM CDT
To: "Hyde, Tinka" <hyde.tinka@epa.gov>
Subject: Fwd: Help with the All Ages Lead Model?

FYI

Tim Henry
Deputy Director, Water Division
US EPA Region V
312-886-6107 (office)
312-296-0690 (cell)

Sent from my iPhone

Begin forwarded message:

From: "Johnson, Mark" <johnson.mark@epa.gov>
Date: September 29, 2015 at 17:32:16 CDT
To: "Braverman, Carole" <braverman.carole@epa.gov>, "Samanic, Claudine" <Samanic.Claudine@epa.gov>
Cc: "Poy, Thomas" <poy.thomas@epa.gov>, "Henry, Timothy" <henry.timothy@epa.gov>
Subject: RE: Help with the All Ages Lead Model?

Carole

We should be clear that EPA has not asked ATSDR to review the blood lead data for the City of Flint. The State of Michigan is the lead for investigation and communication with the Flint situation. The reason we had made an inquiry regarding the All Ages Lead Model (AALM) was to test its accuracy in predicting blood lead levels. Since there is both water data and blood lead data for the same population, we were considering using the AALM to determine how well the predicted levels compared to the actual measured levels.

Apparently is not easy to arrange for the installation of the software to run the All Ages Lead Model, which is still being beta tested. The site license for the ACSL is held in ORD by Paul Schlosser. In anticipation that the regions may ultimately be using the AALM, EPA-R5 may want to consider contacting ORD to serve as a beta tester for the software.

Mark

Mark D. Johnson, PhD, DABT

Regional Director/Toxicologist

Agency for Toxic Substances and Disease Registry (ATSDR)

77 W. Jackson Blvd.

Chicago, IL 60604

Office: 312-353-3436

Email: mdjohnson@cdc.gov

From: Braverman, Carole
Sent: Tuesday, September 29, 2015 1:47 PM
To: Samanic, Claudine
Cc: Johnson, Mark; Poy, Thomas; Henry, Timothy
Subject: RE: Help with the All Ages Lead Model?

I will get on this and I shared your message with WD. R5 and the City of Flint have requested ORD help in optimizing the water system. Perhaps we should all talk? I'm running a webinar starting in 15 minutes so more later.

From: Samanic, Claudine
Sent: Tuesday, September 29, 2015 12:51 PM
To: Braverman, Carole
Cc: Johnson, Mark
Subject: Help with the All Ages Lead Model?

Hi Carole,

We are writing to ask for some help with something. I'm not sure if you are keeping up with what's been happening in Flint, MI with the increasing water lead levels due to a switch in water source for the town? Our Michigan State Health Dept partners are going through a bit of a snag because the Lead Program folks initially ran a comparison of pre- and post- water source switch blood lead levels in children ages 0-16 and reported no significant increase in the proportion of elevated BLs. However, folks at the Hurley Medical Center (where many blood leads are analyzed) ran their own comparisons restricting to high water lead zip codes in Flint, and looking first at children 0-5, then at babies < 15 months and found a significant doubling of the % >5 ug/L (attached is a scanned page of some of their results – excuse my scribble – I ran my own test of proportions to verify the p-value). The water lead levels are about 11 now – not yet at 15 but perhaps rising. The issue has become quite political and it seems USEPA will be pulled in somehow.

We'd like to provide our State Health partners with some support. Mark wanted to plug in some of the site-specific parameters into the IEUBK model, and do the same with the new All Ages Lead Model (since the whole population of Flint is affected by this). We've inquired about obtaining a copy of the that program, but it seems you also need a program called ACSL to run the AALM, and we do not have an ACSL license (please see below). EPA has a corporate license, and the AAML is currently being beta tested. Is there any possibility that one of the R5 EPA risk assessors is already beta testing this program, or would be willing to load it so we could use it in support of the lead issue in Flint?

Thank you,

Claudine

P.S. Thanks again for correcting my last name on the Epi talk announcement!

Claudine Samanic, MSPH, PhD

Commander, USPHS Commissioned Corps

ATSDR Region 5

77 W Jackson Blvd

Chicago, IL 60604

(312) 353-4766

csamanic@cdc.gov

From: McLanahan, Eva (ATSDR/DCHI/OD) [mailto:yjp8@cdc.gov]
Sent: Tuesday, September 29, 2015 10:31 AM
To: Johnson, Mark
Cc: Samanic, Claudine
Subject: RE: Access to All Ages Model

Hi Mark,

Glad you talked with Jim – he's a great guy. I like him very much!

In order to run the AALM you do need acsl. (www.acslx.com). The trouble here will be cost. It cost several hundred dollars per license; however, at EPA we had a corporate license so we could install on as many computers as we wanted, but only a certain few would have tech support. If AALM becomes the mainstream at ATSDR, we'd definitely be better off going that way.

Is there something you were thinking of doing with the AALM that I could help you with? Are you interested in joining our AALM validation team, etc.?

V/r,

Eva

To: Kopocis, Ken[Kopocis.Ken@epa.gov]; Meiburg, Stan[Meiburg.Stan@epa.gov]; Reynolds, Thomas[Reynolds.Thomas@epa.gov]; Fritz, Matthew[Fritz.Matthew@epa.gov]; Hedman, Susan[hedman.susan@epa.gov]
From: Grevatt, Peter
Sent: Wed 9/30/2015 4:48:32 PM
Subject: Fwd: WHAT ARE YOU GUYS DOING DOWN THERE?

FYI, from Mark Edwards at VA Tech.

Begin forwarded message:

From: Marc Edwards <edwardsm@vt.edu>
Date: September 29, 2015 at 11:34:06 PM EDT
To: <schock.michael@epa.gov>, <Lytle.Darren@epamail.epa.gov>, <burneson.eric@epa.gov>, <demarco.carol@epa.gov>, <murphy.thomas@epa.gov>, <shoven.heather@epa.gov>, <deltoral.miguel@epa.gov>
Subject: WHAT ARE YOU GUYS DOING DOWN THERE?

Wurfel says to NPR you have to poison kids for a year before implementing corrosion control, and to determine the right orthophosphate dose?

Eric, is this going to be part of the new improved LCR? And is EPA going to hand Miguel's draft memo to Wurfel, to finalize and/or approve? Wurfel PROMISES THAT the final memo is going to tell a different story. And Miguel is now a ROGUE EPA employee?

EPA Office of Water and EPA Region 5 are a national embarrassment. You have a city in crisis, kids with elevated blood lead, and NO CORROSION CONTROL PLAN FOR 16 MONTHS, and yet you sit there and do absolutely nothing.

Marc

http://www.npr.org/2015/09/29/444497051/high-lead-levels-in-michigan-kids-after-city-switches-water-source

A draft report from the EPA that was obtained by the ACLU of Michigan also takes the city and state to task.

"Prior to April 30, 2014, the City of Flint purchased finished water from the City of Detroit which contained orthophosphate, a treatment chemical used to control lead and copper levels in the drinking water," the report read, adding that the treatment was discontinued after the switch to Flint River water.

"In accordance with the Lead and Copper Rule (LCR), all large systems ... are required to install and maintain corrosion control treatment for lead and copper. In the absence of any corrosion control treatment, lead levels in drinking water can be expected to increase," the report continued.

A Solution May Be Near

But officials with the Michigan Department of Environmental Quality dispute the findings of the draft report. MDEQ spokesman Brad Wurfel says the report was the work of a "rogue employee," and promised the final report — not yet released — would tell a much different story.

"You have to have to do a full year of studying" the water chemistry as it behaves across the system before implementing corrosion control, Wurfel says, adding that's the only way to know how much phosphate to add to the water.

To: Janet Kuefler [redacted] Personal Address / Ex. 6
From: Crooks, Jennifer
Sent: Wed 9/30/2015 4:55:51 PM
Subject: FW: FYI from Marc Edwards: WHAT ARE YOU GUYS DOING DOWN THERE?

FYI

From: Shoven, Heather
Sent: Wednesday, September 30, 2015 7:31 AM
To: Damato, Nicholas; Bair, Rita; Poy, Thomas; Porter, Andrea; Crooks, Jennifer; King, Carol; Darman, Leslie; Glowacki, Joanna
Cc: Deltoral, Miguel
Subject: FYI from Marc Edwards: WHAT ARE YOU GUYS DOING DOWN THERE?

From: Marc Edwards [mailto:edwardsm@vt.edu]
Sent: Tuesday, September 29, 2015 10:34 PM
To: Schock, Michael; Lytle, Darren; Burneson, Eric; demarco.carol@epa.gov; Murphy, Thomas; Shoven, Heather; Deltoral, Miguel
Subject: WHAT ARE YOU GUYS DOING DOWN THERE?

Wurfel says to NPR you have to poison kids for a year before implementing corrosion control, and to determine the right orthophosphate dose?

Eric, is this going to be part of the new improved LCR? And is EPA going to hand Miguel's draft memo to Wurfel, to finalize and/or approve? Wurfel PROMISES THAT the final memo is going to tell a different story. And Miguel is now a ROGUE EPA employee?

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To: Grevatt, Peter[Grevatt.Peter@epa.gov]
From: Hedman, Susan
Sent: Wed 9/30/2015 5:39:32 PM
Subject: FW: Flint water clips for the morning of Sept. 30

FYI

From: Hedman, Susan
Sent: Wednesday, September 30, 2015 8:55 AM
To: Meiburg, Stan; Burke, Thomas; Kopocis, Ken; Reynolds, Thomas; Vaught, Laura; Fritz, Matthew
Subject: Fwd: Flint water clips for the morning of Sept. 30

Please pay close attention to the first clip -- which aired on NPR last night. The MDEQ spokesman's reference to an EPA "rogue employee" is something that we are going to need to address -- both with MDEQ and the public. As I understand it, this employee had been asked to prepare a memo on with the Flint water system to update R5 Water Division management on the situation in Flint -- and he shared a draft internal memo with Citizen name / Ex. 6 o get her OK to include data about her child's lead levels (and she subsequently gave the draft to the ACLU.) While EPA employees should not be sharing internal draft documents with the public -- I think he was well-intentioned and I don't think he should be publicly branded as a "rogue employee." Moreover, many of the recommendations in the draft memo are the very steps that MDEQ and the City are now taking to address the lead problem. When we talk later today, I'd like some advice on how best to address this.

- High Lead Levels In Michigan Kids After City Switches Water Source (NPR)
- Report: Using Flint River proving costly to city's water system (Michigan Radio)
- Gov’s office helps get water filters to Flint families (Detroit News)
- Flint mayor to state: Approve plan “as fast as humanly possible” to help keep lead out of water (Michigan Radio)
- Have you missed parts of the Flint water story? Here's a quick rundown. (Michigan Radio)

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http://www.npr.org/2015/09/29/444497051/high-lead-levels-in-michigan-kids-after-city-switches-water-source

High Lead Levels In Michigan Kids After City Switches Water Source

NPR All Things Considered

September 29, 2015 6:01 PM ET

Doctors are finding elevated levels of lead in the children in Flint, Mich., and local tap water is the likely cause.

That's the latest alarming news to come out of the city, which switched its water source about a year and a half ago.

A pediatrician with Hurley Medical Center analyzed lead levels of hundreds of children. She compared blood tests before and after April 2014. That's when Flint, unable to come to an agreement on a short-term contract with Detroit, quit buying water from its system, and signed on with a new system that will draw water from Lake Huron.

But that system won't be online until next year. So in the interim, with assurances from the state that it would be safe, the city decided to pump water from the Flint River.

Dr. Mona Hanna-Attisha's research found that the percentage of Flint children 5 years and younger with elevated lead levels nearly doubled after the switch, from 2.1 percent to 4 percent.

"My research shows that lead levels have gone up," Hanna-Attisha says. "I cannot say it's from the water. But that's, you know, the thing that has happened."

A Cascade Of Problems

The news did not surprise Lee Anne Walters. She suspected the water had something to do with health problems in her 4-year-old son, Gavin.

"I kept talking to the doctors, trying to figure out why he wasn't growing," she says. "He was 27 pounds at 4 years old. His hair was thinning, breaking out in rashes."

Complaints about foul-smelling, discolored water began soon after the city started drawing water from the Flint River. In the summer of 2014, the city issued a notice for residents to boil their water because of E. coli contamination.

Then the city was found to be in violation of the Safe Drinking Water Act because of high levels of a disinfectant byproduct called total trihalomethanes — an unintended consequence from all the chlorine the city had to use to kill the E. coli.

Walters says her whole family broke out in rashes, and they stopped drinking the water in December.

Then, in February of this year, the city tested her water for lead.

"And I got a frantic phone call from the water department telling me to please make sure my kids didn't drink the water, don't mix their juice with it, because they had never seen a number that high for lead," she says.

After that, Walters decided to take Gavin in to be tested for lead.

He'd been tested before the city switched its water source. At that time, he had a level of 2 micrograms of lead per deciliter of blood. After the switch, his level was 6.5.

The Centers for Disease Control and Prevention says a level of 5 is considered "much higher" than that found in most children. It also says there is no safe level of lead exposure — and the effects, like lower IQ, are irreversible.

A Failure Of Government?

The day after Hanna-Attisha released her findings, the city put out a lead advisory, urging people to flush their pipes, install inexpensive filters, and use cold water for mixing baby formula.

"As a father, I want every family and household in the city of Flint to be safe and secure," Mayor Dayne Walling said at a press conference to announce the advisory.

Over the summer, researchers from Virginia Tech found that Flint River water is highly corrosive. That means when it comes into contact with lead from service lines, household pipes or solder, it eats away at the lead and sends it right to people's faucets.

City officials and state regulators say they're now putting together a corrosion control plan to reduce lead exposure.

"Flint is the only city in America that I'm aware of that does not have a corrosion control plan," said Virginia Tech's Marc Edwards, who led the research.

Edwards also uncovered lead contamination in Washington, D.C. He says Flint's lead levels are not as high, and the exposure period is not as long as it was in that city. But he has some harsh criticism of city and state officials for how they've handled the Flint situation.

"It was clearly a failure of government agencies to do their job to protect the public," says Edwards, citing the absence of a corrosion control plan from the outset.

A draft report from the EPA that was obtained by the ACLU of Michigan also takes the city and state to task.

"Prior to April 30, 2014, the City of Flint purchased finished water from the City of Detroit which contained orthophosphate, a treatment chemical used to control lead and copper levels in the drinking water," the report read, adding that the treatment was discontinued after the switch to Flint River water.

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But officials with the Michigan Department of Environmental Quality dispute the findings of the draft report. MDEQ spokesman Brad Wurfel says the report was the work of a "rogue employee," and promised the final report — not yet released — would tell a much different story.

"You have to have to do a full year of studying" the water chemistry as it behaves across the system before implementing corrosion control, Wurfel says, adding that's the only way to know how much phosphate to add to the water.

An announcement about the corrosion control plan is expected soon. Meanwhile, city officials are showing increasing interest in returning to Detroit's water system — something that even a few days ago they dismissed as economically unfeasible for the cash-strapped city.

Whatever the solution, residents like Lee Anne Walters say they hope the city can reach one soon.

"I want them to take responsibility," Walters says. "I want them to quit poisoning their citizens."

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http://michiganradio.org/post/report-using-flint-river-proving-costly-citys-water-system#stream/0

Report: Using Flint River proving costly to city's water system

Steve Carmody, Michigan Radio • 28 minutes ago

A new report (http://flintwaterstudy.org/) estimates it will cost the city of Flint $1.5 billion to repair the damage done since the switch to the Flint River as a water source.

Researchers from Virginia Tech based their estimate on the tests of the corrosiveness of the Flint River.

The researchers say the corrosiveness is “eating away” lead pipes, aging the system by more than 11.5 years in just the last 16 months.

City and state leaders are talking about taking steps to fix Flint’s water problems.

One option on the table might be returning to Detroit water. But Flint will probably need help from the state to do that.

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http://www.detroitnews.com/story/news/politics/2015/09/29/govs-office-helps-get-water-filters-flint-families/73055442/

Gov’s office helps get water filters to Flint families

Chad Livengood, Detroit News Lansing Bureau 6:30 p.m. EDT September 29, 2015

Gov. Rick Snyder’s office quietly orchestrated the distribution of 1,500 water filters to Flint families this summer while insisting the city’s water is safe to drink.

In July, Snyder’s office worked with an anonymous corporate donor to distribute the faucet filters through a group of Flint pastors, Snyder spokesman Dave Murray said Tuesday. It was unclear who initiated the plan — the donor, the governor’s office or someone else.

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"People have complained about the color and the odor, and faucet filters will help with those challenges as well as improving water quality overall," Murray said.

The governor's office is in discussions with "a number of groups that are interested" in distributing more faucet filters, Murray said.

The water filters can remove chemical compounds as well as lead, a toxic metal that can hinder brain development in young children even at low levels, according to the U.S. Environmental Protection Agency.

Flint residents began complaining about the taste and color of the city's water in April 2014 when the city halted a half-century of purchasing water from the Detroit Water and Sewerage Department and started pumping drinking water from the Flint River.

River water is a trickier source for municipal cleaning and distribution than Lake Huron, where the Detroit system gets its water. The deeper, still waters of the lake contain few of the organic materials found in river water and require a different treatment protocol.

The Flint River is serving as a temporary water source until the city can connect to a new regional water pipeline from Lake Huron that won't be ready until late 2016.

A year ago, General Motors' Flint Engine Operations plant stopped using the city's river because of concerns about corrosive effects and now gets its water from Flint Township.

Last week, pediatricians at Hurley Medical Center released a study of blood levels of Flint children younger than 5 between January 2013 and September 2013 when Flint used Detroit's water and January and September of this year when residents drank Flint River water.

But Flint's water tested below the federal limit for lead in the Michigan Department of Environmental Quality's 2014 testing, DEQ spokesman Brad Wurfel said Tuesday.

Still, the state agency is working closely to address a "crisis of confidence" among Flint residents, Wurfel said. "Even though it is meeting standards, there is a significant concern in the city of Flint," he said.

Senate Minority Leader Jim Ananich, D-Flint, has urged Snyder to seek emergency funding to distribute faucet filters to about 15,000 Flint homes.

Ananich also wants the governor to get Flint reconnected to Detroit's water system.

In January, the Detroit water system offered to reconnect water service to Flint because of the complaints. Flint officials rebuffed the offer, saying an analysis concluded it would cost Flint an additional $12 million per year or more.

Snyder has been non-committal to Ananich's proposals, but said Tuesday his administration will be taking action soon.

"I have a large team of people working on the Flint water issue as we speak," Snyder said after an event in Lansing. "What I would say is during the course of the week or early next week, hopefully we'll be coming out with more public action steps ... and more action steps to take in the future.

"I take it as a serious issue, the Flint water situation. Lead's a serious issue, so we're spending a lot of time and effort looking at that and trying to partner with the people in Flint on that issue."

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http://michiganradio.org/post/flint-mayor-state-approve-plan-fast-humanly-possible-help-keep-lead-out-water#stream/0

Flint mayor to state: Approve plan "as fast as humanly possible" to help keep lead out of water

Lindsey Smith , Michigan Radio • 14 hours ago

Flint hasn't been using any corrosion-control method since it switched from Detroit's water system in April 2014. Corrosion-control treatment helps keep lead out of drinking water. Since the switch, more kids are showing up with elevated levels of lead in their blood.

Flint Mayor Dayne Walling says he wants to put corrosion-control treatment back in place, but he needs state approval first. The state says it's going to take a little while to implement.

"One of my requests to (Michigan's) Department of Environmental Quality director is that (approval) be accelerated as fast as humanly possible," Walling said.

“Whatever decisions are coming next, we need that corrosion control in the water treatment process that we have now,” he said.

Walling was a guest today on Stateside with Cynthia Canty. (Listen to Flint Mayor Dayne Walling on Stateside: http://cpa.ds.npr.org/michigan/audio/2015/09/20150929-SS-FLINT-WATER.mp3)

Flint spokesman Jason Lorenz says MDEQ made the recommendation to put corrosion-control treatment into the water supply last month. But, he says, it needs MDEQ Director Dan Wyant’s official approval.

There’s been some debate over whether Flint should have had corrosion control in place the entire time.

MDEQ officials have argued to the U.S. Environmental Protection Agency that corrosion control is not technically required yet, because the Flint River is a new water source.

“You have to have to do a full year of studying” the water chemistry as it behaves across the system before implementing corrosion control, MDEQ spokesman Brad Wurfel said. He says that’s the only way to know what corrosion-control treatment to use.

That period of study was to be completed by June 30.

As the DEQ reads federal regulations, Flint technically has up to two years after the study to install treatment. But Wurfel says an announcement on the state's decision will come by the end of this week, and "the prescription for optimizing the system for corrosion control is going to be done in Flint by the end of this year."

"We have a plan to expedite this with the city ... and folks can take some comfort in that," Wurfel said.

It's not clear yet how much the treatment will cost, but Wurfel says "this won't break the bank." A state-appointed emergency manager made the interim switch to the Flint River to save the city money.

The U.S. Environmental Protection Agency has not yet answered this question: Was Flint required to have some form of corrosion-control treatment the whole time?

At face value, the EPA rules are clear, all water systems that serve more than 50,000 people must have some kind of corrosion control.

But when you switch water sources, there is apparently some room for interpretation.

In approving updates to this federal regulation in 2000, the EPA noted that "water systems need to make treatment changes, on occasion, to react to changing circumstances."

In these cases, the rule does not "prevent a state from approving treatment changes," but it's not entirely clear if the state can approve having zero corrosion-control treatment.

One key section of the rule change reads:

"One commenter requested that EPA clarify in the rule language that (large water) systems are not required to have (corrosion-control treatment) physically present. EPA disagrees that this is appropriate."

“For large water systems, (the federal rule) does not eliminate the need to have any (corrosion-control treatment) in place, unless the water system can demonstrate to the satisfaction of the State that such treatment will have no effect on reducing the levels of lead and copper at the tap … EPA expects few, if any, large water systems can make this demonstration without (corrosion-control treatment).”

Flint residents can be sure about one thing: This period of study and approval won’t happen the next time the city switches water sources.

The city expects to stop using the Flint River when a new regional water system in Genesee County is completed, slated for the end of 2016. According the MDEQ’s Brad Wurfel, that’s because they won’t need to study the nature of the new water source – Lake Huron. Because Detroit’s water system uses water from Lake Huron, Flint will be able to use the same corrosion-control treatment it did when it was hooked up to Detroit’s system.

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Have you missed parts of the Flint water story? Here's a quick rundown.

Michigan Radio Newsroom • Sep 25, 2015

Flint switched its drinking water source in April of 2014. The city went from Detroit water to water from the Flint River, and there have been problems ever since.

Most recently, residents have been enraged to hear about elevated lead levels in kids. At this point, Flint residents have been unsure about the safety of their water for over a year.

Here's a quick rundown of the problems some Flint residents have been complaining about.

Discoloration and smell

Water issues started right after the switch as residents complained that the new water smelled and tasted different. City officials issued boil water advisories but insisted this was not connected to the switch.

E. coli

Tests of Flint water showed high levels of bacteria, including E. coli. Residents were issued a number of boil water notices.

Chlorine

To address the increased E. coli levels, the city pumped more chlorine into the system as a disinfectant.

TTHM

In January of 2015, residents received warnings that their water didn't meet federal safety standards because tests were showing higher rates of total trihalomethane. TTHM is a byproduct of the chlorine that had been used to address earlier problems. Too much TTHM increases the risk of cancer. Average TTHM levels did not fall to acceptable levels againuntil late this summer.

Lead

In January 2015, the University of Michigan-Flint conducted tests of its own water. Some of their samples contained "high levels of lead." At that time, researchers said the lead levels were high in those samples because the water was spending a lot of time sitting in old pipes.

Activists started asking for courts to force the city to go back to Detroit water in April. Those requests fell short.

An EPA memo leaked in July documented "extremely high levels at one woman's home, high enough that her son got lead poisoning."

Researchers from Virginia Tech tested samples from nearly 300 Flint homes in September. Their findings showed 'seriously' high levels of lead.

On September 24, Flint pediatricians announced their findings that the percentage of Flint children with elevated blood levels has almost doubled since the water source switch.

Jeff Kelley
Director, Office of External Communications
U.S. EPA Region 5
ph: 312-353-1159

To: Meiburg, Stan[Meiburg.Stan@epa.gov]; Burke, Thomas[Burke.Thomas@epa.gov]; Kopocis, Ken[Kopocis.Ken@epa.gov]; Reynolds, Thomas[Reynolds.Thomas@epa.gov]; Vaught, Laura[Vaught.Laura@epa.gov]; Fritz, Matthew[Fritz.Matthew@epa.gov]
From: Hedman, Susan
Sent: Wed 9/30/2015 5:46:21 PM
Subject: RE: Flint water clips for the morning of Sept. 30

Can we invite Peter Grevatt to join our call later today?

From: Hedman, Susan
Sent: Wednesday, September 30, 2015 8:55 AM
To: Meiburg, Stan; Burke, Thomas; Kopocis, Ken; Reynolds, Thomas; Vaught, Laura; Fritz, Matthew
Subject: Fwd: Flint water clips for the morning of Sept. 30

Please pay close attention to the first clip -- which aired on NPR last night. The MDEQ spokesman's reference to an EPA "rogue employee" is something that we are going to need to address -- both with MDEQ and the public. As I understand it, this employee had been asked to prepare a memo on with the Flint water system to update R5 Water Division management on the situation in Flint -- and he shared a draft internal memo with Citizen name / Ex. 6 to get her OK to include data about her child's lead levels (and she subsequently gave the draft to the ACLU.) While EPA employees should not be sharing internal draft documents with the public -- I think he was well-intentioned and I don't think he should be publicly branded as a "rogue employee." Moreover, many of the recommendations in the draft memo are the very steps that MDEQ and the City are now taking to address the lead problem. When we talk later today, I'd like some advice on how best to address this.

- High Lead Levels In Michigan Kids After City Switches Water Source (NPR)
- Report: Using Flint River proving costly to city's water system (Michigan Radio)
- Gov's office helps get water filters to Flint families (Detroit News)
- Flint mayor to state: Approve plan "as fast as humanly possible" to help keep lead out of water (Michigan Radio)
- Have you missed parts of the Flint water story? Here's a quick rundown. (Michigan Radio)

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http://www.npr.org/2015/09/29/444497051/high-lead-levels-in-michigan-kids-after-city-switches-water-source

High Lead Levels In Michigan Kids After City Switches Water Source

NPR All Things Considered

September 29, 2015 6:01 PM ET

Doctors are finding elevated levels of lead in the children in Flint, Mich., and local tap water is the likely cause.

That's the latest alarming news to come out of the city, which switched its water source about a year and a half ago.

A pediatrician with Hurley Medical Center analyzed lead levels of hundreds of children. She compared blood tests before and after April 2014. That's when Flint, unable to come to an agreement on a short-term contract with Detroit, quit buying water from its system, and signed on with a new system that will draw water from Lake Huron.

But that system won't be online until next year. So in the interim, with assurances from the state that it would be safe, the city decided to pump water from the Flint River.

Dr. Mona Hanna-Attisha's research found that the percentage of Flint children 5 years and younger with elevated lead levels nearly doubled after the switch, from 2.1 percent to 4 percent.

"My research shows that lead levels have gone up," Hanna-Attisha says. "I cannot say it's from the water. But that's, you know, the thing that has happened."

A Cascade Of Problems

The news did not surprise Lee Anne Walters. She suspected the water had something to do with health problems in her 4-year-old son, Gavin.

"I kept talking to the doctors, trying to figure out why he wasn't growing," she says. "He was 27 pounds at 4 years old. His hair was thinning, breaking out in rashes."

Complaints about foul-smelling, discolored water began soon after the city started drawing water from the Flint River. In the summer of 2014, the city issued a notice for residents to boil their water because of E. coli contamination.

Then the city was found to be in violation of the Safe Drinking Water Act because of high levels of a disinfectant byproduct called total trihalomethanes — an unintended consequence from all the chlorine the city had to use to kill the E. coli.

Walters says her whole family broke out in rashes, and they stopped drinking the water in December.

Then, in February of this year, the city tested her water for lead.

"And I got a frantic phone call from the water department telling me to please make sure my kids didn't drink the water, don't mix their juice with it, because they had never seen a number that high for lead," she says.

After that, Walters decided to take Gavin in to be tested for lead.

He'd been tested before the city switched its water source. At that time, he had a level of 2 micrograms of lead per deciliter of blood. After the switch, his level was 6.5.

The Centers for Disease Control and Prevention says a level of 5 is considered "much higher" than that found in most children. It also says there is no safe level of lead exposure — and the effects, like lower IQ, are irreversible.

A Failure Of Government?

The day after Hanna-Attisha released her findings, the city put out a lead advisory, urging people to flush their pipes, install inexpensive filters, and use cold water for mixing baby formula.

"As a father, I want every family and household in the city of Flint to be safe and secure," Mayor Dayne Walling said at a press conference to announce the advisory.

Over the summer, researchers from Virginia Tech found that Flint River water is highly corrosive. That means when it comes into contact with lead from service lines, household pipes or solder, it eats away at the lead and sends it right to people's faucets.

City officials and state regulators say they're now putting together a corrosion control plan to reduce lead exposure.

"Flint is the only city in America that I'm aware of that does not have a corrosion control plan," said Virginia Tech's Marc Edwards, who led the research.

Edwards also uncovered lead contamination in Washington, D.C. He says Flint's lead levels are not as high, and the exposure period is not as long as it was in that city. But he has some harsh criticism of city and state officials for how they've handled the Flint situation.

"It was clearly a failure of government agencies to do their job to protect the public," says Edwards, citing the absence of a corrosion control plan from the outset.

A draft report from the EPA that was obtained by the ACLU of Michigan also takes the city and state to task.

"Prior to April 30, 2014, the City of Flint purchased finished water from the City of Detroit which contained orthophosphate, a treatment chemical used to control lead and copper levels in the drinking water," the report read, adding that the treatment was discontinued after the switch to Flint River water.

"In accordance with the Lead and Copper Rule (LCR), all large systems ... are required to install and maintain corrosion control treatment for lead and copper. In the absence of any corrosion control treatment, lead levels in drinking water can be expected to increase," the report continued.

A Solution May Be Near

But officials with the Michigan Department of Environmental Quality dispute the findings of the draft report. MDEQ spokesman Brad Wurfel says the report was the work of a "rogue employee," and promised the final report — not yet released — would tell a much different story.

"You have to have to do a full year of studying" the water chemistry as it behaves across the system before implementing corrosion control, Wurfel says, adding that's the only way to know how much phosphate to add to the water.

An announcement about the corrosion control plan is expected soon. Meanwhile, city officials are showing increasing interest in returning to Detroit's water system — something that even a few days ago they dismissed as economically unfeasible for the cash-strapped city.

Whatever the solution, residents like Lee Anne Walters say they hope the city can reach one soon.

"I want them to take responsibility," Walters says. "I want them to quit poisoning their citizens."

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http://michiganradio.org/post/report-using-flint-river-proving-costly-citys-water-system#stream/0

Report: Using Flint River proving costly to city's water system

Steve Carmody, Michigan Radio • 28 minutes ago

A new report (http://flintwaterstudy.org/) estimates it will cost the city of Flint $1.5 billion to repair the damage done since the switch to the Flint River as a water source.

Researchers from Virginia Tech based their estimate on the tests of the corrosiveness of the Flint River.

The researchers say the corrosiveness is “eating away” lead pipes, aging the system by more than 11.5 years in just the last 16 months.

City and state leaders are talking about taking steps to fix Flint’s water problems.

One option on the table might be returning to Detroit water. But Flint will probably need help from the state to do that.

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http://www.detroitnews.com/story/news/politics/2015/09/29/govs-office-helps-get-water-filters-flint-families/73055442/

Gov’s office helps get water filters to Flint families

Chad Livengood, Detroit News Lansing Bureau 6:30 p.m. EDT September 29, 2015

Gov. Rick Snyder’s office quietly orchestrated the distribution of 1,500 water filters to Flint families this summer while insisting the city’s water is safe to drink.

In July, Snyder’s office worked with an anonymous corporate donor to distribute the faucet filters through a group of Flint pastors, Snyder spokesman Dave Murray said Tuesday. It was unclear who initiated the plan — the donor, the governor’s office or someone else.

“We worked with the pastors’ group to distribute the filters and asked that members respect the donor’s wishes not to be identified,” Murray said. “We told the group that we’re not looking for credit and appreciated the pastors’ efforts in working with the community on this effort.”

Snyder’s office acknowledged its role Tuesday in handing out the free filters to Flint residents while pressure is mounting on state agencies to fix Flint’s troubled water system. A study last week showed elevated levels of lead in the blood of Flint children younger than 5.

“People have complained about the color and the odor, and faucet filters will help with those challenges as well as improving water quality overall,” Murray said.

The governor’s office is in discussions with “a number of groups that are interested” in distributing more faucet filters, Murray said.

The water filters can remove chemical compounds as well as lead, a toxic metal that can hinder brain development in young children even at low levels, according to the U.S. Environmental Protection Agency.

Flint residents began complaining about the taste and color of the city’s water in April 2014 when the city halted a half-century of purchasing water from the Detroit Water and Sewerage Department and started pumping drinking water from the Flint River.

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A year ago, General Motors' Flint Engine Operations plant stopped using the city's river because of concerns about corrosive effects and now gets its water from Flint Township.

Last week, pediatricians at Hurley Medical Center released a study of blood levels of Flint children younger than 5 between January 2013 and September 2013 when Flint used Detroit's water and January and September of this year when residents drank Flint River water.

But Flint's water tested below the federal limit for lead in the Michigan Department of Environmental Quality's 2014 testing, DEQ spokesman Brad Wurfel said Tuesday.

Still, the state agency is working closely to address a "crisis of confidence" among Flint residents, Wurfel said. "Even though it is meeting standards, there is a significant concern in the city of Flint," he said.

Senate Minority Leader Jim Ananich, D-Flint, has urged Snyder to seek emergency funding to distribute faucet filters to about 15,000 Flint homes.

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Lindsey Smith , Michigan Radio • 14 hours ago

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ph: 312-353-1159

To: Kelley, Jeff[kelley.jeff@epa.gov]
From: Hedman, Susan
Sent: Wed 9/30/2015 5:47:41 PM
Subject: RE: Flint water clips for the morning of Sept. 30

Thanks – please keep these coming.

From: Kelley, Jeff
Sent: Wednesday, September 30, 2015 7:49 AM
To: Hedman, Susan; Kaplan, Robert; Hyde, Tinka
Cc: Fortin, Denise; Deamer, Eileen; Rowan, Anne; Cassell, Peter; Beckmann, Ronna Erin; Harrison, Melissa; Arcaute, Francisco; Poy, Thomas
Subject: Flint water clips for the morning of Sept. 30

This morning's clips:

•□□□□□□□ High Lead Levels In Michigan Kids After City Switches Water Source (NPR)

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September 29, 2015 6:01 PM ET

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The news did not surprise Citizen name / Ex. 6 She suspected the water had something to do with health problems in her 4-year-old son, Citizen name / Ex. 6

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The Centers for Disease Control and Prevention says a level of 5 is considered "much higher" than that found in most children. It also says there is no safe level of lead exposure — and the effects, like lower IQ, are irreversible.

A Failure Of Government?

The day after Citizen name / Ex. 6 released her findings, the city put out a lead advisory, urging people to flush their pipes, install inexpensive filters, and use cold water for mixing baby formula.

"As a father, I want every family and household in the city of Flint to be safe and secure," Mayor Dayne Walling said at a press conference to announce the advisory.

Over the summer, researchers from Virginia Tech found that Flint River water is highly corrosive. That means when it comes into contact with lead from service lines, household pipes or solder, it eats away at the lead and sends it right to people's faucets.

City officials and state regulators say they're now putting together a corrosion control plan to reduce lead exposure.

"Flint is the only city in America that I'm aware of that does not have a corrosion control plan," said Virginia Tech's Marc Edwards, who led the research.

Edwards also uncovered lead contamination in Washington, D.C. He says Flint's lead levels are not as high, and the exposure period is not as long as it was in that city. But he has some harsh criticism of city and state officials for how they've handled the Flint situation.

"It was clearly a failure of government agencies to do their job to protect the public," says Edwards, citing the absence of a corrosion control plan from the outset.

A draft report from the EPA that was obtained by the ACLU of Michigan also takes the city and state to task.

"Prior to April 30, 2014, the City of Flint purchased finished water from the City of Detroit which contained orthophosphate, a treatment chemical used to control lead and copper levels in the drinking water," the report read, adding that the treatment was discontinued after the switch to Flint River water.

"In accordance with the Lead and Copper Rule (LCR), all large systems ... are required to install and maintain corrosion control treatment for lead and copper. In the absence of any corrosion control treatment, lead levels in drinking water can be expected to increase," the report continued.

A Solution May Be Near

But officials with the Michigan Department of Environmental Quality dispute the findings of the draft report. MDEQ spokesman Brad Wurfel says the report was the work of a "rogue employee," and promised the final report — not yet released — would tell a much different story.

"You have to have to do a full year of studying" the water chemistry as it behaves across the system before implementing corrosion control, Wurfel says, adding that's the only way to know how much phosphate to add to the water.

An announcement about the corrosion control plan is expected soon. Meanwhile, city officials are showing increasing interest in returning to Detroit's water system — something that even a few days ago they dismissed as economically unfeasible for the cash-strapped city.

Whatever the solution, residents like Citizen name / Ex. 6 say they hope the city can reach one soon.

"I want them to take responsibility," [redacted] says. "I want them to quit poisoning their citizens."

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http://michiganradio.org/post/report-using-flint-river-proving-costly-citys-water-system#stream/0

Report: Using Flint River proving costly to city's water system

Steve Carmody, Michigan Radio • 28 minutes ago

A new report (http://flintwaterstudy.org/) estimates it will cost the city of Flint $1.5 billion to repair the damage done since the switch to the Flint River as a water source.

Researchers from Virginia Tech based their estimate on the tests of the corrosiveness of the Flint River.

The researchers say the corrosiveness is “eating away” lead pipes, aging the system by more than 11.5 years in just the last 16 months.

City and state leaders are talking about taking steps to fix Flint’s water problems.

One option on the table might be returning to Detroit water. But Flint will probably need help from the state to do that.

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http://www.detroitnews.com/story/news/politics/2015/09/29/govs-office-helps-get-water-filters-flint-families/73055442/

Gov’s office helps get water filters to Flint families

Chad Livengood, Detroit News Lansing Bureau 6:30 p.m. EDT September 29, 2015

Gov. Rick Snyder’s office quietly orchestrated the distribution of 1,500 water filters to Flint families this summer while insisting the city’s water is safe to drink.

In July, Snyder’s office worked with an anonymous corporate donor to distribute the faucet filters through a group of Flint pastors, Snyder spokesman Dave Murray said Tuesday. It was unclear who initiated the plan — the donor, the governor’s office or someone else.

“We worked with the pastors’ group to distribute the filters and asked that members respect the donor’s wishes not to be identified,” Murray said. “We told the group that we’re not looking for credit and appreciated the pastors’ efforts in working with the community on this effort.”

Snyder’s office acknowledged its role Tuesday in handing out the free filters to Flint residents while pressure is mounting on state agencies to fix Flint’s troubled water system. A study last week showed elevated levels of lead in the blood of Flint children younger than 5.

“People have complained about the color and the odor, and faucet filters will help with those challenges as well as improving water quality overall,” Murray said.

The governor's office is in discussions with "a number of groups that are interested" in distributing more faucet filters, Murray said.

The water filters can remove chemical compounds as well as lead, a toxic metal that can hinder brain development in young children even at low levels, according to the U.S. Environmental Protection Agency.

Flint residents began complaining about the taste and color of the city's water in April 2014 when the city halted a half-century of purchasing water from the Detroit Water and Sewerage Department and started pumping drinking water from the Flint River.

River water is a trickier source for municipal cleaning and distribution than Lake Huron, where the Detroit system gets its water. The deeper, still waters of the lake contain few of the organic materials found in river water and require a different treatment protocol.

The Flint River is serving as a temporary water source until the city can connect to a new regional water pipeline from Lake Huron that won't be ready until late 2016.

A year ago, General Motors' Flint Engine Operations plant stopped using the city's river because of concerns about corrosive effects and now gets its water from Flint Township.

Last week, pediatricians at Hurley Medical Center released a study of blood levels of Flint children younger than 5 between January 2013 and September 2013 when Flint used Detroit's water and January and September of this year when residents drank Flint River water.

But Flint's water tested below the federal limit for lead in the Michigan Department of Environmental Quality's 2014 testing, DEQ spokesman Brad Wurfel said Tuesday.

Still, the state agency is working closely to address a “crisis of confidence” among Flint residents, Wurfel said. “Even though it is meeting standards, there is a significant concern in the city of Flint,” he said.

Senate Minority Leader Jim Ananich, D-Flint, has urged Snyder to seek emergency funding to distribute faucet filters to about 15,000 Flint homes.

Ananich also wants the governor to get Flint reconnected to Detroit’s water system.

In January, the Detroit water system offered to reconnect water service to Flint because of the complaints. Flint officials rebuffed the offer, saying an analysis concluded it would cost Flint an additional $12 million per year or more.

Snyder has been non-committal to Ananich’s proposals, but said Tuesday his administration will be taking action soon.

“I have a large team of people working on the Flint water issue as we speak,” Snyder said after an event in Lansing. “What I would say is during the course of the week or early next week, hopefully we’ll be coming out with more public action steps ... and more action steps to take in the future.

“I take it as a serious issue, the Flint water situation. Lead’s a serious issue, so we’re spending a lot of time and effort looking at that and trying to partner with the people in Flint on that issue.”

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http://michiganradio.org/post/flint-mayor-state-approve-plan-fast-humanly-possible-help-keep-lead-out-water#stream/0

Flint mayor to state: Approve plan "as fast as humanly possible" to help keep lead out of water

Lindsey Smith , Michigan Radio • 14 hours ago

Flint hasn't been using any corrosion-control method since it switched from Detroit's water system in April 2014. Corrosion-control treatment helps keep lead out of drinking water. Since the switch, more kids are showing up with elevated levels of lead in their blood.

Flint Mayor Dayne Walling says he wants to put corrosion-control treatment back in place, but he needs state approval first. The state says it's going to take a little while to implement.

"One of my requests to (Michigan's) Department of Environmental Quality director is that (approval) be accelerated as fast as humanly possible," Walling said.

"Whatever decisions are coming next, we need that corrosion control in the water treatment process that we have now," he said.

Walling was a guest today on Stateside with Cynthia Canty. (Listen to Flint Mayor Dayne Walling on Stateside: http://cpa.ds.npr.org/michigan/audio/2015/09/20150929-SS-FLINT-WATER.mp3)

Flint spokesman Jason Lorenz says MDEQ made the recommendation to put corrosion-control treatment into the water supply last month. But, he says, it needs MDEQ Director Dan Wyant's official approval.

There’s been some debate over whether Flint should have had corrosion control in place the entire time.

MDEQ officials have argued to the U.S. Environmental Protection Agency that corrosion control is not technically required yet, because the Flint River is a new water source.

“You have to have to do a full year of studying” the water chemistry as it behaves across the system before implementing corrosion control, MDEQ spokesman Brad Wurfel said. He says that’s the only way to know what corrosion-control treatment to use.

That period of study was to be completed by June 30.

As the DEQ reads federal regulations, Flint technically has up to two years after the study to install treatment. But Wurfel says an announcement on the state's decision will come by the end of this week, and "the prescription for optimizing the system for corrosion control is going to be done in Flint by the end of this year."

"We have a plan to expedite this with the city ... and folks can take some comfort in that," Wurfel said.

It's not clear yet how much the treatment will cost, but Wurfel says "this won't break the bank." A state-appointed emergency manager made the interim switch to the Flint River to save the city money.

The U.S. Environmental Protection Agency has not yet answered this question: Was Flint required to have some form of corrosion-control treatment the whole time?

At face value, the EPA rules are clear, all water systems that serve more than 50,000 people must have some kind of corrosion control.

But when you switch water sources, there is apparently some room for interpretation.

In approving updates to this federal regulation in 2000, the EPA noted that “water systems need to make treatment changes, on occasion, to react to changing circumstances.”

In these cases, the rule does not “prevent a state from approving treatment changes,” but it’s not entirely clear if the state can approve having zero corrosion-control treatment.

One key section of the rule change reads:

“One commenter requested that EPA clarify in the rule language that (large water) systems are not required to have (corrosion-control treatment) physically present. EPA disagrees that this is appropriate.”

“For large water systems, (the federal rule) does not eliminate the need to have any (corrosion-control treatment) in place, unless the water system can demonstrate to the satisfaction of the State that such treatment will have no effect on reducing the levels of lead and copper at the tap … EPA expects few, if any, large water systems can make this demonstration without (corrosion-control treatment).”

Flint residents can be sure about one thing: This period of study and approval won’t happen the next time the city switches water sources.

The city expects to stop using the Flint River when a new regional water system in Genesee County is completed, slated for the end of 2016. According the MDEQ’s Brad Wurfel, that’s because they won’t need to study the nature of the new water source – Lake Huron. Because Detroit’s water system uses water from Lake Huron, Flint will be able to use the same corrosion-control treatment it did when it was hooked up to Detroit’s system.

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http://michiganradio.org/post/have-you-missed-parts-flint-water-story-heres-quick-rundown#stream/0

Have you missed parts of the Flint water story? Here's a quick rundown.

Michigan Radio Newsroom • Sep 25, 2015

Flint switched its drinking water source in April of 2014. The city went from Detroit water to water from the Flint River, and there have been problems ever since.

Most recently, residents have been enraged to hear about elevated lead levels in kids. At this point, Flint residents have been unsure about the safety of their water for over a year.

Here's a quick rundown of the problems some Flint residents have been complaining about.

Discoloration and smell

Water issues started right after the switch as residents complained that the new water smelled and tasted different. City officials issued boil water advisories but insisted this was not connected to the switch.

E. coli

Tests of Flint water showed high levels of bacteria, including E. coli. Residents were issued a number of boil water notices.

Chlorine

To address the increased E. coli levels, the city pumped more chlorine into the system as a disinfectant.

TTHM

In January of 2015, residents received warnings that their water didn't meet federal safety standards because tests were showing higher rates of total trihalomethane. TTHM is a byproduct of the chlorine that had been used to address earlier problems. Too much TTHM increases the risk of cancer. Average TTHM levels did not fall to acceptable levels againuntil late this summer.

Lead

In January 2015, the University of Michigan-Flint conducted tests of its own water. Some of their samples contained "high levels of lead." At that time, researchers said the lead levels were high in those samples because the water was spending a lot of time sitting in old pipes.

Activists started asking for courts to force the city to go back to Detroit water in April. Those requests fell short.

An EPA memo leaked in July documented "extremely high levels at one woman's home, high enough that her son got lead poisoning."

Researchers from Virginia Tech tested samples from nearly 300 Flint homes in September. Their findings showed 'seriously' high levels of lead.

On September 24, Flint pediatricians announced their findings that the percentage of Flint children with elevated blood levels has almost doubled since the water source switch.

Jeff Kelley
Director, Office of External Communications
U.S. EPA Region 5
ph: 312-353-1159

To: Moriarty, Edward[Moriarty.EdwardJ@epa.gov]
From: Deltoral, Miguel
Sent: Wed 9/30/2015 6:19:10 PM
Subject: Re: Follow-up from today's call -- Draft letters and next steps

Will do.

Miguel A. Del Toral
Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

From: Moriarty, Edward
Sent: Wednesday, September 30, 2015 01:00 PM
To: Deltoral, Miguel; Shoven, Heather; Viveiros, Edward
Cc: Glowacki, Joanna; King, Carol; Darman, Leslie; Poy, Thomas; Crooks, Jennifer; Damato, Nicholas; Bair, Rita; Porter, Andrea; Lopez-Carbo, Maria
Subject: RE: Follow-up from today's call -- Draft letters and next steps

Thanks and please regarding Flint would you copy Eddy Viveiros and Victoria Banks who will be taking over LCR? We will ease them through the transition.

Ed

Ed Moriarty - Team Lead

OGWDW - Protection Branch

1200 Constitution Ave., NW

Washington, DC 20460

202-564-3864

From: Deltoral, Miguel
Sent: Wednesday, September 30, 2015 1:16 PM
To: Shoven, Heather; Moriarty, Edward

Cc: Glowacki, Joanna; King, Carol; Darman, Leslie; Poy, Thomas; Crooks, Jennifer; Damato, Nicholas; Bair, Rita; Porter, Andrea; Lopez-Carbo, Maria
Subject: Re: Follow-up from today's call -- Draft letters and next steps

Here's the other piece (memo).

Miguel A. Del Toral

Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

From: Shoven, Heather
Sent: Wednesday, September 30, 2015 12:12 PM
To: Moriarty, Edward
Cc: Deltoral, Miguel; Glowacki, Joanna; King, Carol; Darman, Leslie; Poy, Thomas; Crooks, Jennifer; Damato, Nicholas; Bair, Rita; Porter, Andrea; Lopez-Carbo, Maria
Subject: Follow-up from today's call -- Draft letters and next steps

DRAFT: EPA INTERNAL DELIBERATIVE

Hi Ed,

Attorney Client / Ex. 5

Attorney Client / Ex. 5

Attorney Client / Ex. 5

We appreciate your time. Please let me know if you'd like me to set up a meeting when Maria is back in the office tomorrow.

Best wishes,

Heather

Heather A. Shoven | Enforcement Team Leader | U.S. Environmental Protection Agency, Region 5

Ground Water and Drinking Water Branch | 77 W. Jackson Blvd (WG-15J) | Chicago, IL 60604 | 312-886-0153

To: Poy, Thomas[poy.thomas@epa.gov]; Damato, Nicholas[damato.nicholas@epa.gov]; Bair, Rita[bair.rita@epa.gov]; Deltoral, Miguel[deltoral.miguel@epa.gov]; Porter, Andrea[porter.andrea@epa.gov]; Crooks, Jennifer[crooks.jennifer@epa.gov]; Glowacki, Joanna[glowacki.joanna@epa.gov]; Kempic, Jeffrey[Kempic.Jeffrey@epa.gov]; Darman, Leslie[Darman.Leslie@epa.gov]; King, Carol[King.Carol@epa.gov]; Moriarty, Edward[Moriarty.EdwardJ@epa.gov]; Lopez-Carbo, Maria[Lopez-Carbo.Maria@epa.gov]; Viveiros, Edward[Viveiros.Edward@epa.gov]; Banks, Victoria[Banks.Victoria@epa.gov]
From: Shoven, Heather
Sent: Wed 9/30/2015 7:44:58 PM
Subject: FYI: New Commentary posted at http://flintwaterstudy.org/

http://flintwaterstudy.org/

I have pasted the commentary below.

COMMENTARY: MDEQ Mistakes and Deception Created the Flint Water Crisis

September 30, 2015September 30, 2015 Siddhartha Roy Articles

Primary Author: Dr. Marc Edwards

Acknowledgements: Curt Guyette, LeeAnne Walters, Melissa Mays, Siddhartha Roy

As results of our collaborative research with Flint residents exposed widespread problems with elevated levels of lead in Flint's water, the Michigan Department of Environmental Quality (MDEQ) repeatedly attempted to discredit our findings and downplay the public health threat. For example, MDEQ's Communications Director Brad Wurfel wrote to The Flint Journal's Ronald Fonger:

"…the state DEQ is just as perplexed by Edwards' results as he seems to be by the City's test results. When I said we were unsure how the Virginia Tech team got its results, that's not the same as being surprised that they got them. …this group specializes in looking for high lead problems. They pull that rabbit out of that hat everywhere they go. Nobody should be

surprised when the rabbit comes out of the hat, even if they can't figure out how it is done.....while the state appreciates academic participation in this discussion, offering broad, dire public health advice based on some quick testing could be seen as fanning political flames irresponsibly. Residents of Flint concerned about the health of their community don't need more of that."

Now that Dr. Mona Hanna-Attisha and Hurley Medical Center researchers have revealed that the rising levels of lead in Flint water have been associated with increased blood lead of Flint's children, our early health advice has been vindicated by most accounts. But MDEQ still dismisses the water controversy as "near-hysteria," and characterizes the Hurley study conclusions as ***"unfortunate"*** if not quite ***"irresponsible."***

Given MDEQ's insistence that there is absolutely nothing wrong with Flint water, we have created a timeline that illustrates how MDEQ's mistakes and deception created the Flint Water Crisis in the first place. Our analysis relies on e-mails and documents obtained through Freedom of Information Act (FOIA) requests by the American Civil Liberties Union-Michigan (ACLU of Michigan) and FlintWaterStudy.org.

All FOIA documents are provided at the end of this article for review.

Phase 1. MDEQ Fails to Require Corrosion Control for Flint River Water (April 2014)

Effective July 1998, the federal Lead and Copper Rule (LCR) has required that all large public water systems maintain a program to control levels of lead in drinking water from corrosion. Moreover, the law also requires the City of Flint to have a state approved plan, with enforceable regulatory limits for "Water Quality Parameters" including pH, alkalinity and/or corrosion inhibitor dose measured in the water distribution system.

MDEQ never required Flint to have a corrosion control program, nor did it set water quality parameters for the new Flint River source water. While MDEQ asserts that they are acting proactively to get a corrosion control program in Flint, there is no provision in the LCR that allows for corrosion control to ever be interrupted.

As a direct result of this mistake, Flint residents have been completely unprotected from elevated lead in water from the moment the switch to Flint River water was made. This has created a conflict of interest for MDEQ ever since. Specifically, MDEQ's failure to require a corrosion control program is what created the Flint water crisis in the first place–they now have a vested interest in covering up the problem.

Phase 2. MDEQ misinforms the USEPA about Flint's Corrosion Control (February-March 2015)

Even if we assume MDEQ was confused about its obligations under the LCR, when problems with high lead started to crop up in February 2015, they should have quickly acted to correct the mistake. Samples with high lead were reported at the University of Michigan-Flint Campus, and on February 26, 2015 Mike Glasgow (City of Flint) did excellent detective work discovering high lead (over 100 ppb) in water samples from Flint resident Lee-Anne Walters' home.

Ms. Walters immediately forwarded her results to representatives of USEPA Region 5, who in turn immediately forwarded the results to Stephen Busch and Mike Prysby (MDEQ) with the subject line **"HIGH LEAD: FLINT Water testing Results"** The EPA e-mail correctly informed MDEQ that Ms. Walters' high lead was likely due to ***"… the different chemistry water…leaching out contaminants from the insides of…the pipes."*** But MDEQ denied to EPA that that Flint had a lead in water problem.

At that point, EPA Region 5 lead-in-water expert Miguel Del Toral asked MDEQ a question through another EPA employee:

"Miguel was wondering if Flint is feeding Phosphates. Flint must have Optimal Corrosion Control Treatment-is it Phosphates?"

On February 27th, 2015, MDEQ's Stephen Busch unequivocally and falsely responded to EPA that:

"The City of Flint…Has an Optimized Corrosion Control Program <and> Conducts quarterly Water Quality Parameter monitoring at 25 sites and has not had any unusual results."

Reassured by MDEQ's false statement, Del Toral ended USEPA's February conversation with MDEQ by stating:

"If I remember correctly, Detroit is feeding PO4 for the LCR, but since Flint is no longer part of that interconnection, I was wondering what their <Optimal Corrosion Control> was. They are required to have <Optimal Corrosion Control> in place which is why I was asking what they were using."

On March 18, 2015, Lee-Anne Walters' home was retested after flushing her system thoroughly. This time the test result came back even worse with 397 ppb lead– almost 40 times higher than the World Health Organization 10 ppb safety threshold. EPA Region 5 forwarded the results to MDEQ, with a query ***"Any thoughts on how to respond to her? I'm running out of ideas."***

MDEQ's response, delivered in a voicemail to Del Toral on March 19, 2015, stated that ***MDEQ had investigated and found Ms. Walters' high lead was due to lead sources in her plumbing***. On March 27, 2015, Walters' son, who had been having health problems, was tested for lead in his blood. The blood lead results came back high– well over the 5 ug/dL CDC threshold of concern.

Phase 3. Walters and Del Toral Investigate the Veracity of MDEQ Statements (April to June 2015)

With good reason, Lee-Anne Walters did not accept the MDEQ's explanation to Del Toral for the high lead in her water. The internal plumbing had been stolen from the house before it was purchased, and they had installed new (lead free) plastic plumbing before moving in.

Walters also checked up on the MDEQ statement that Flint had "an Optimized Corrosion Control Program." She called the City of Flint, and city officials correctly informed her that there was no program at all.

Walters then passed this alarming information along to EPA's Del Toral, who on April 23rd e-mailed MDEQ, and again asked what corrosion control program Flint was using. It was only then that MDEQ finally acknowledged that there was NO program. Concerned due to the very high occurrence of lead service lines (LSLs) in Flint, on April 27th Del Toral wrote an EPA Region 5 internal e-mail stating:

"Flint has not been operating any corrosion control treatment, which is very concerning given the likelihood of LSLs in the City."

That night Del Toral also stopped at Walters' house on a trip north, and personally inspected her plumbing first hand. He confirmed it was plastic and lead-free. Del Toral also dropped off sample bottles at the Walters' home, and told her that if she wanted an analysis to contact Professor Marc Edwards (the author of this article and Principal Investigator of FlintWaterStudy.org) at Virginia Tech.

The next morning Edwards talked Walters through an intensive 30 bottle sampling protocol. When the bottles were returned to Virginia Tech and analyzed, Edwards and his senior research scientist Dr. Jeff Parks were stunned by the results. The average lead in was 2,429 ppb lead, the high was 13,200 ppb, and even after 25 minutes flushing the water never dropped below 200 ppb. After Walters told Del Toral about the high lead results, he drove back to Flint, just in time to observe the City replacing the service line to Walters' home. He personally collected a sample of the pipe and verified it to be pure lead.

In a follow-up memo dated June 24, 2015, which was sent to both Walters and Edwards, Del Toral outlined numerous concerns about the situation regarding the serious lead corrosion problem in Flint. *He included a clear recommendation that the USEPA investigate whether* *the City of Flint was in compliance with federal laws for lead corrosion control.*

Phase 4. MDEQ "Handles" the LCR Report, ACLU-Michigan, Virginia Tech and Miguel Del Toral (July to August 2015)

> "Revising" the Original LCR Report. In spite of all the problems documented with lead in Flint water from February to June 2015, Flint and MDEQ took a lackadaisical approach to the federally required LCR sampling program. Specifically, just 5 days before the June 30th deadline to collect the 100 samples that MDEQ required, the City had only collected 39 samples.

Adam Rosenthal (MDEQ) e-mailed Mike Glasgow at the City of Flint:

> ***"We hope you have 61 more lead/copper samples collected and sent to the lab by 6/30/15, and that they will be below the AL for lead. As of now with 39 results, Flint's 90th percentile is over the AL for lead."***

In the next five days the City collected 30 samples, all of which were below the action level, and did not reach the 100 sample target. If all 71 submitted samples had been considered valid, the City would have exceeded the 15 ppb action level. *Federal law would then require that Flint residents be provided information about how to protect themselves and their children from lead in water. MDEQ's failure to install corrosion control would have been flagged as an obvious mistake. But none of that happened.*

Instead, the MDEQ "revised" the City's original LCR report, invalidating two high lead results, so that the 90%'ile was under the 15 ppb action level. The validity of samples showing low lead in the City's sampling was never questioned. This is a problem, because the City has now admitted that they do not know which homes had lead pipe, even though it is stated in writing in the report that all sampled homes had lead pipe. By law, at least 50 percent of the homes sampled must be verified to have lead pipe, and the remainder of homes sampled must have been built before 1986 and known to have lead solder.

There is no basis for believing that this requirement was met in either the 2014 or 2015 LCR sampling events conducted by the City. Hence, the City of Flint has not had a valid LCR sampling event since the switch to Flint River water.

MDEQ then lowered the minimum number of required samples from 100 to 60, making it look like the City of Flint had met the target. MDEQ also did not question the City's open acknowledgement that homes from 2014 had not been re-sampled, or that high risk (Tier 1) sites were not used. The original report, due July 10th, was also late by several weeks. All of these violations of federal law were glossed over, to make it appear that the City had passed its lead testing with flying colors. Just like that, according to MDEQ at least, the City of Flint had no LCR violations at all.

> ACLU-Michigan FOIA. The timing by which the "revised" LCR report was created, is also of interest. On July 22, 2015, the ACLU-Michigan submitted a FOIA to MDEQ, requesting the City of Flint's LCR report supposedly due on July 10, 2015. The City's original LCR report with all the obvious problems is dated July 28, 2015. MDEQ never provided the ACLU-Michigan with the original LCR report. Instead, they created the scrubbed revised report, on August 20, 2015, and sent that report to ALCU-Michigan (from the City of Flint) the next day. In the comments section of the report, Flint openly states ***"Revised report after conference call with DEQ staff. Two samples were removed from list for not meeting sample criteria, and due to population the number of samples was reduced to 60."***

> MDEQ to FlintWaterStudy.org FOIA: What conference call? On September 9, 2015, Virginia Tech submitted a FOIA to MDEQ explicitly requesting records and minutes of the conference call between DEQ staff and Flint cited in the revised LCR report. This FOIA request has been denied by MDEQ, because ***"Your request does not include the date/time of the conference call and who from the Department of Environmental Quality participated on the conference call."*** FlintWaterStudy.org immediately appealed the withholding of documents related to the conference call to the State of

Michigan. On September 28th, our appeal was denied. We may commence a civil action if we do not agree with the decision.

> Handling Miguel Del Toral. MDEQ obviously had a major problem on its hands with EPA's lead-in-water expert Miguel Del Toral. On August 4th 2015, Lee-Anne Walters and Melissa Mays met with MDEQ officials to discuss Flint's lead in water problems. The MDEQ officials participating in the meeting were identified by Mays and Walters, as Liane Shekter-Smith (Chief of the Office of Drinking Water and Municipal Assistance), Stephen Busch and Brad Wurfel.

According to Walters and Mays, Shekter-Smith bragged that ***"Mr. Del Toral has been handled,"*** and that Flint residents would not be hearing from him again. Moreover, MDEQ asserted that Mr. Del Toral's interim memo detailing the many problems with Flint's (non-existent) corrosion control program ***"would never be finalized."*** Just yesterday, NPR released a slightly different, but enlightening version of Wurfel's take on Del Toral and the memo:

MDEQ spokesman Brad Wurfel says the report was the work of a "rogue employee," and promised the final report — not yet released — would tell a much different story.

Mays and Walters vividly recall Wurfel, smirking or laughing, whenever they expressed concern about elevated lead in Flint's water. Looking back on the exchange yesterday, Mays stated ***"It is shocking how their refusal to admit they made a mistake, trumped the dangers their actions pose to Flint's children."***

Angered, Lee-Anne Walters then called Edwards, and informed him that Del Toral would no longer be working on Flint water issues, and the two discussed the clear implication that EPA bureaucrats had intervened to prevent Del Toral from further exposing MDEQ's numerous blunders and the health threat to Flint residents. She further stated that ***"It is too late for my son, but I will not stand by and let this happen to another other innocent child in Flint."***

Clearly, the MDEQ, City of Flint and even the USEPA (with the obvious exception of Del Toral) have proved themselves unworthy of the public trust. Flint residents have been left to fend for themselves, when it comes to dealing with the dangers of high lead in their water.

FlintWaterStudy was launched an hour after the phone call from Ms. Walters, to help the citizens of Flint deal with the lead-in-water crisis that MDEQ created, and to correct any false statements by uncaring agencies that have left Flint's children in harm's way.

FOIA Documents:

Emails between MDEQ, USEPA, and Ms. LeeAnne Walters:

Download (PDF, 169KB)

Original LCR Report from City of Flint to MDEQ:

Download (PDF, 94KB)

Revised LCR Report from City of Flint to MDEQ:

Download (PDF, 357KB)

FlintWaterStudy.org's FOIA Appeal Denied:

Download (PDF, 15KB)

To: Susan Hedman[Hedman.Susan@epa.gov]; Robert Kaplan[Kaplan.Robert@epa.gov]; Hyde, Tinka[hyde.tinka@epa.gov]
From: Frey, Bert
Sent: Wed 9/30/2015 7:52:14 PM
Subject: FW: FYI: New Commentary posted at http://flintwaterstudy.org/

FYI

From: Glowacki, Joanna
Sent: Wednesday, September 30, 2015 2:50 PM
To: Frey, Bert; Lupton, Jane; Lee, Sandra
Subject: FW: FYI: New Commentary posted at http://flintwaterstudy.org/

FYI

Joanna S. Glowacki

Associate Regional Counsel

U.S. Environmental Protection Agency

Region 5

77 West Jackson Boulevard (C-14J)

Chicago, Illinois 60604

312-353-3757

312-385-5464 fax

From: Shoven, Heather
Sent: Wednesday, September 30, 2015 2:45 PM
To: Poy, Thomas; Damato, Nicholas; Bair, Rita; Deltoral, Miguel; Porter, Andrea; Crooks, Jennifer; Glowacki, Joanna; Kempic, Jeffrey; Darman, Leslie; King, Carol; Moriarty, Edward; Lopez-Carbo, Maria; Viveiros, Edward; Banks, Victoria
Subject: FYI: New Commentary posted at http://flintwaterstudy.org/

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I have pasted the commentary below.

COMMENTARY: MDEQ Mistakes and Deception Created the Flint Water Crisis

September 30, 2015September 30, 2015 Siddhartha Roy Articles

Primary Author: Dr. Marc Edwards

Acknowledgements: Curt Guyette, LeeAnne Walters, Melissa Mays, Siddhartha Roy

As results of our collaborative research with Flint residents exposed widespread problems with elevated levels of lead in Flint's water, the Michigan Department of Environmental Quality (MDEQ) repeatedly attempted to discredit our findings and downplay the public health threat. For example, MDEQ's Communications Director Brad Wurfel wrote to The Flint Journal's Ronald Fonger:

> ***"…the state DEQ is just as perplexed by Edwards' results as he seems to be by the City's test results. When I said we were unsure how the Virginia Tech team got its results, that's not the same as being surprised that they got them. …this group specializes in looking for high lead problems. They pull that rabbit out of that hat everywhere they go. Nobody should be surprised when the rabbit comes out of the hat, even if they can't figure out how it is done…..while the state appreciates academic participation in this discussion, offering broad, dire public health advice based on some quick testing could be seen as fanning political flames irresponsibly. Residents of Flint concerned about the health of their community don't need more of that."***

Now that Dr. Mona Hanna-Attisha and Hurley Medical Center researchers have revealed that the rising levels of lead in Flint water have been associated with increased blood lead of Flint's children, our early health advice has been vindicated by most accounts. But MDEQ still dismisses the water controversy as "near-hysteria," and characterizes the Hurley study conclusions as ***"unfortunate"*** if not quite ***"irresponsible."***

Given MDEQ's insistence that there is absolutely nothing wrong with Flint water, we have created a timeline that illustrates how MDEQ's mistakes and deception created the Flint Water Crisis in the first place. Our analysis relies on e-mails and documents obtained through Freedom of Information Act (FOIA) requests by the American Civil Liberties Union-Michigan (ACLU of Michigan) and FlintWaterStudy.org.

All FOIA documents are provided at the end of this article for review.

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Effective July 1998, the federal Lead and Copper Rule (LCR) has required that all large public water systems maintain a program to control levels of lead in drinking water from corrosion. Moreover, the law also requires the City of Flint to have a state approved plan, with enforceable regulatory limits for "Water Quality Parameters" including pH, alkalinity and/or corrosion inhibitor dose measured in the water distribution system.

MDEQ never required Flint to have a corrosion control program, nor did it set water quality parameters for the new Flint River source water. While MDEQ asserts that they are acting proactively to get a corrosion control program in Flint, there is no provision in the LCR that allows for corrosion control to ever be interrupted.

As a direct result of this mistake, Flint residents have been completely unprotected from elevated lead in water from the moment the switch to Flint River water was made. This has created a conflict of interest for MDEQ ever since. Specifically, MDEQ's failure to require a corrosion control program is what created the Flint water crisis in the first place–they now have a vested interest in covering up the problem.

Phase 2. MDEQ misinforms the USEPA about Flint's Corrosion Control (February-March 2015)

Even if we assume MDEQ was confused about its obligations under the LCR, when problems with high lead started to crop up in February 2015, they should have quickly acted to correct the mistake. Samples with high lead were reported at the University of Michigan-Flint Campus, and on February 26, 2015 Mike Glasgow (City of Flint) did excellent detective work discovering high lead (over 100 ppb) in water samples from Flint resident Lee-Anne Walters' home.

Ms. Walters immediately forwarded her results to representatives of USEPA Region 5, who in turn immediately forwarded the results to Stephen Busch and Mike Prysby (MDEQ) with the subject line **"HIGH LEAD: FLINT Water testing Results"** The EPA e-mail correctly informed MDEQ that Ms. Walters' high lead was likely due to ***"... the different chemistry water…leaching out contaminants from the insides of…the pipes."*** But MDEQ denied to EPA that that Flint had a lead in water problem.

At that point, EPA Region 5 lead-in-water expert Miguel Del Toral asked MDEQ a question through another EPA employee:

"Miguel was wondering if Flint is feeding Phosphates. Flint must have Optimal Corrosion Control Treatment-is it Phosphates?"

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"The City of Flint…Has an Optimized Corrosion Control Program <and> Conducts quarterly Water Quality Parameter monitoring at 25 sites and has not had any unusual results."

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"If I remember correctly, Detroit is feeding PO4 for the LCR, but since Flint is no longer part of that interconnection, I was wondering what their <Optimal Corrosion Control> was. They are required to have <Optimal Corrosion Control> in place which is why I was asking what they were using."

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Phase 3. Walters and Del Toral Investigate the Veracity of MDEQ Statements (April to June 2015)

With good reason, Lee-Anne Walters did not accept the MDEQ's explanation to Del Toral for the high lead in her water. The internal plumbing had been stolen from the house before it was purchased, and they had installed new (lead free) plastic plumbing before moving in.

Walters also checked up on the MDEQ statement that Flint had "an Optimized Corrosion Control Program." She called the City of Flint, and city officials correctly informed her that there was no program at all.

Walters then passed this alarming information along to EPA's Del Toral, who on April 23rd e-mailed MDEQ, and again asked what corrosion control program Flint was using. It was only then that MDEQ finally acknowledged that there was NO program. Concerned due to the very high occurrence of lead service lines (LSLs) in Flint, on April 27th Del Toral wrote an EPA Region 5 internal e-mail stating:

"Flint has not been operating any corrosion control treatment, which is very concerning given the likelihood of LSLs in the City."

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The next morning Edwards talked Walters through an intensive 30 bottle sampling protocol. When the bottles were returned to Virginia Tech and analyzed, Edwards and his senior research scientist Dr. Jeff Parks were stunned by the results. The average lead in was 2,429 ppb lead, the high was 13,200 ppb, and even after 25 minutes flushing the water never dropped below 200 ppb. After Walters told Del Toral about the high lead results, he drove back to Flint, just in time to observe the City replacing the service line to Walters' home. He personally collected a sample of the pipe and verified it to be pure lead.

In a follow-up memo dated June 24, 2015, which was sent to both Walters and Edwards, Del Toral outlined numerous concerns about the situation regarding the serious lead corrosion problem in Flint. *He included a clear recommendation that the USEPA investigate whether the City of Flint was in compliance with federal laws for lead corrosion control.*

Phase 4. MDEQ "Handles" the LCR Report, ACLU-Michigan, Virginia Tech and Miguel Del Toral (July to August 2015)

> "Revising" the Original LCR Report. In spite of all the problems documented with lead in Flint water from February to June 2015, Flint and MDEQ took a lackadaisical approach to the federally required LCR sampling program. Specifically, just 5 days before the June 30th deadline to collect the 100 samples that MDEQ required, the City had only collected 39 samples.

Adam Rosenthal (MDEQ) e-mailed Mike Glasgow at the City of Flint:

"We hope you have 61 more lead/copper samples collected and sent to the lab by 6/30/15, and that they will be below the AL for lead. As of now with 39 results, Flint's 90th percentile is over the AL for lead."

In the next five days the City collected 30 samples, all of which were below the action level, and did not reach the 100 sample target. If all 71 submitted samples had been considered valid, the City would have exceeded the 15 ppb action level. *Federal law would then require that Flint residents be provided information about how to protect themselves and their children from lead in water. MDEQ's failure to install corrosion control would have been flagged as an obvious mistake. But none of that happened.*

Instead, the MDEQ "revised" the City's original LCR report, invalidating two high lead results, so that the 90%'ile was under the 15 ppb action level. The validity of samples showing low lead in the City's sampling was never questioned. This is a problem, because the City has now admitted that they do not know which homes had lead pipe, even though it is stated in writing in the report that all sampled homes had lead pipe. By law, at least 50 percent of the homes sampled must be verified to have lead pipe, and the remainder of homes sampled must have been built before 1986 and known to have lead solder. There is no basis for believing that this requirement was met in either the 2014 or 2015 LCR sampling events conducted by the City. Hence, the City of Flint has not had a valid LCR sampling event since the switch to Flint River water.

MDEQ then lowered the minimum number of required samples from 100 to 60, making it look like the City of Flint had met the target.

MDEQ also did not question the City's open acknowledgement that homes from 2014 had not been re-sampled, or that high risk (Tier 1) sites were not used. The original report, due July 10th, was also late by several weeks. All of these violations of federal law were glossed over, to make it appear that the City had passed its lead testing with flying colors. Just like that, according to MDEQ at least, the City of Flint had no LCR violations at all.

> **ACLU-Michigan FOIA**. The timing by which the "revised" LCR report was created, is also of interest. On July 22, 2015, the ACLU-Michigan submitted a FOIA to MDEQ, requesting the City of Flint's LCR report supposedly due on July 10, 2015. The City's original LCR report with all the obvious problems is dated July 28, 2015. MDEQ never provided the ACLU-Michigan with the original LCR report. Instead, they created the scrubbed revised report, on August 20, 2015, and sent that report to ALCU-Michigan (from the City of Flint) the next day. In the comments section of the report, Flint openly states ***"Revised report after conference call with DEQ staff. Two samples were removed from list for not meeting sample criteria, and due to population the number of samples was reduced to 60."***

> **MDEQ to FlintWaterStudy.org FOIA: What conference call?** On September 9, 2015, Virginia Tech submitted a FOIA to MDEQ explicitly requesting records and minutes of the conference call between DEQ staff and Flint cited in the revised LCR report. This FOIA request has been denied by MDEQ, because ***"Your request does not include the date/time of the conference call and who from the Department of Environmental Quality participated on the conference call."*** FlintWaterStudy.org immediately appealed the withholding of documents related to the conference call to the State of Michigan. On September 28th, our appeal was denied. We may commence a civil action if we do not agree with the decision.

> **Handling Miguel Del Toral.** MDEQ obviously had a major problem on its hands with EPA's lead-in-water expert Miguel Del Toral. On August 4th 2015, Lee-Anne Walters and Melissa Mays met with MDEQ officials to discuss Flint's lead in water problems. The MDEQ officials

participating in the meeting were identified by Mays and Walters, as Liane Shekter-Smith (Chief of the Office of Drinking Water and Municipal Assistance), Stephen Busch and Brad Wurfel.

According to Walters and Mays, Shekter-Smith bragged that ***"Mr. Del Toral has been handled,"*** and that Flint residents would not be hearing from him again. Moreover, MDEQ asserted that Mr. Del Toral's interim memo detailing the many problems with Flint's (non-existent) corrosion control program ***"would never be finalized."*** Just yesterday, NPR released a slightly different, but enlightening version of Wurfel's take on Del Toral and the memo:

MDEQ spokesman Brad Wurfel says the report was the work of a "rogue employee," and promised the final report — not yet released — would tell a much different story.

Mays and Walters vividly recall Wurfel, smirking or laughing, whenever they expressed concern about elevated lead in Flint's water. Looking back on the exchange yesterday, Mays stated ***"It is shocking how their refusal to admit they made a mistake, trumped the dangers their actions pose to Flint's children."***

Angered, Lee-Anne Walters then called Edwards, and informed him that Del Toral would no longer be working on Flint water issues, and the two discussed the clear implication that EPA bureaucrats had intervened to prevent Del Toral from further exposing MDEQ's numerous blunders and the health threat to Flint residents. She further stated that ***"It is too late for my son, but I will not stand by and let this happen to another other innocent child in Flint."***

Clearly, the MDEQ, City of Flint and even the USEPA (with the obvious exception of Del Toral) have proved themselves unworthy of the public trust. Flint residents have been left to fend for themselves, when it comes to dealing with the dangers of high lead in their water.

FlintWaterStudy was launched an hour after the phone call from Ms. Walters, to help the citizens of Flint deal with the lead-in-water crisis that MDEQ created, and to correct any false statements by uncaring agencies that have left Flint's children in harm's way.

FOIA Documents:

Emails between MDEQ, USEPA, and Ms. LeeAnne Walters:

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Original LCR Report from City of Flint to MDEQ:

Download (PDF, 94KB)

Revised LCR Report from City of Flint to MDEQ:

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FlintWaterStudy.org's FOIA Appeal Denied:

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To: Lytle, Darren[Lytle.Darren@epa.gov]; Schock, Michael[Schock.Michael@epa.gov]
Cc: Deltoral, Miguel[deltoral.miguel@epa.gov]; Porter, Andrea[porter.andrea@epa.gov]; Bair, Rita[bair.rita@epa.gov]; Damato, Nicholas[damato.nicholas@epa.gov]; Crooks, Jennifer[crooks.jennifer@epa.gov]; Shoven, Heather[shoven.heather@epa.gov]
From: Poy, Thomas
Sent: Wed 9/30/2015 8:58:07 PM
Subject: Flint

Darren/Mike: Unless you've gotten different instructions from your management chain, I'm looking for you to provide technical assistance to Flint/MDEQ on how to best implement corrosion control for lead. Flint needs to do something as soon as possible. When the technical experts get together, there may be parallel tracks of what to do in the short-term while Flint is us using the Flint River and what is the long-term solution. Even if the long-term solution is to go back to Detroit, it will take time and in the meantime the Flint River will still be used.

Obviously, knowing where lead is being found and at what concentrations will be helpful in the consideration of corrosion control implementation. The lab slips that we have of their last round of compliance monitoring is not enough to determine whether the right homes were sampled. More information from MDEQ and/or Flint will be needed and possibly collecting additional samples that the TAC may need.

Tom

Tom Poy

Chief, Ground Water and Drinking Water Branch

USEPA - Region 5

(312) 886-5991

To: Meiburg, Stan[Meiburg.Stan@epa.gov]; Burke, Thomas[Burke.Thomas@epa.gov]; Vaught, Laura[Vaught.Laura@epa.gov]; Fritz, Matthew[Fritz.Matthew@epa.gov]
From: Hedman, Susan
Sent: Wed 9/30/2015 9:13:36 PM
Subject: Fwd: FYI: New Commentary posted at http://flintwaterstudy.org/

Please take a look at the most recent posting by Marc Edwards

Sent from my iPhone

Begin forwarded message:

From: "Frey, Bert" <frey.bertram@epa.gov>
Date: September 30, 2015 at 2:52:13 PM CDT
To: "Hedman, Susan" <hedman.susan@epa.gov>, "Kaplan, Robert" <kaplan.robert@epa.gov>, "Hyde, Tinka" <hyde.tinka@epa.gov>
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From: Glowacki, Joanna
Sent: Wednesday, September 30, 2015 2:50 PM
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FYI

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September 30, 2015September 30, 2015 Siddhartha Roy Articles

Primary Author: Dr. Marc Edwards

Acknowledgements: Citizen name / Ex. 6, Citizen name / Ex. 6 Citizen name / Ex. 6 Citizen name / Ex. 6 Citizen name / Ex. 6

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> MDEQ to FlintWaterStudy.org FOIA: What conference call? On September 9, 2015, Virginia Tech submitted a FOIA to MDEQ explicitly requesting records and minutes of the conference call between DEQ staff and Flint cited in the revised LCR report. This FOIA request has been denied by MDEQ, because ***"Your request does not include the date/time of the conference call and who from the Department of Environmental Quality participated on the conference call."*** FlintWaterStudy.org immediately appealed the withholding of documents related to the conference call to the State of Michigan. On September 28th, our appeal was denied. We may commence a civil action if we do not agree with the decision.

> Handling Miguel Del Toral. MDEQ obviously had a major problem on its hands with EPA's lead-in-water expert Miguel Del Toral. On August 4th 2015, Citizen name / Ex. 6 and Citizen name / Ex. 6 met with MDEQ officials to discuss Flint's lead in water problems. The MDEQ officials participating in the meeting were identified by Citizen name / Ex. 6 and Citizen name / Ex. 6 as Liane Shekter-Smith (Chief of the Office of Drinking Water and Municipal Assistance), Stephen Busch and Brad Wurfel.

According to Citizen name / Ex. 6 and Citizen name / Ex. 6 Shekter-Smith bragged that ***"Mr. Del Toral has been handled,"*** and that Flint residents would not be hearing from him again. Moreover, MDEQ asserted that Mr. Del Toral's interim memo detailing the many problems with Flint's (non-existent) corrosion control program ***"would never be finalized."*** Just yesterday, NPR released a slightly different, but enlightening version of Wurfel's take on Del Toral and the memo:

MDEQ spokesman Brad Wurfel says the report was the work of a "rogue employee," and promised the final report — not yet released — would tell a much different story.

Citizen name / Ex. 6 and Citizen name / Ex. 6 vividly recall Wurfel, smirking or laughing, whenever they expressed concern about elevated lead in Flint's water. Looking back on the exchange yesterday, Mays stated ***"It is shocking how their refusal to admit they made a mistake, trumped the dangers their actions pose to Flint's children."***

Angered, Citizen name / Ex. 6 then called Edwards, and informed him that Del Toral would no longer be working on Flint water issues, and the two discussed the clear implication that EPA bureaucrats had intervened to prevent Del Toral from further exposing MDEQ's numerous blunders and the health threat to Flint residents. She further stated that ***"It is too late for my son, but I will not stand by and let this happen to another other innocent child in Flint."***

Clearly, the MDEQ, City of Flint and even the USEPA (with the obvious exception of Del Toral) have proved themselves unworthy of the public trust. Flint residents have been left to fend for themselves, when it comes to dealing with the dangers of high lead in their water.

FlintWaterStudy was launched an hour after the phone call from Citizen name / Ex. 6 o help the citizens of Flint deal with the lead-in-water crisis that MDEQ created, and to correct any false statements by uncaring agencies that have left Flint's children in harm's way.

FOIA Documents:

Emails between MDEQ, USEPA, and Citizen name / Ex. 6

Download (PDF, 169KB)

Original LCR Report from City of Flint to MDEQ:

Download (PDF, 94KB)

Revised LCR Report from City of Flint to MDEQ:

Download (PDF, 357KB)

FlintWaterStudy.org's FOIA Appeal Denied:

Download (PDF, 15KB)

To: Hedman, Susan[hedman.susan@epa.gov]; Kaplan, Robert[kaplan.robert@epa.gov]; Hyde, Tinka[hyde.tinka@epa.gov]
Cc: Fortin, Denise[Fortin.Denise@epa.gov]; Deamer, Eileen[deamer.eileen@epa.gov]; Beckmann, Ronna Erin[beckmann.ronna@epa.gov]; Harrison, Melissa[Harrison.Melissa@epa.gov]; Rowan, Anne[rowan.anne@epa.gov]; Arcaute, Francisco[Arcaute.Francisco@epa.gov]; Cassell, Peter[cassell.peter@epa.gov]; Poy, Thomas[poy.thomas@epa.gov]
From: Kelley, Jeff
Sent: Wed 9/30/2015 9:40:45 PM
Subject: Flint water clips for the afternoon of Sept. 30

- □□□□□□□□ Governor says fallout from Flint water switch wasn't fully understood (Flint Journal)
- □□□□□□□□ Detroit water for Flint? DWSD lawyers say 'no comment' (Flint Journal)
- □□□□□□□□ Snyder acknowledges some mistakes in tapping Flint River (WNEM/AP)
- □□□□□□□□ 500 cases of water to be handed out in giveaway (WNEM/AP)

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http://www.mlive.com/news/flint/index.ssf/2015/09/snyder_says_he_helped_bring_wa.html

Governor says fallout from Flint water switch wasn't fully understood

By Ron Fonger | rfonger1@mlive.com The Flint Journal

on September 30, 2015 at 4:32 PM

FLINT, MI -- Gov. Rick Snyder says "There are probably things that weren't as fully understood" as they should have been before the city tapped into the Flint River for drinking water.

Snyder, speaking to reporters in Lansing Wednesday, Sept. 30, said the decision to use the river rather than buying Lake Huron water from Detroit was "made with the community" while Flint was run by a state-appointed emergency manager.

The governor made the comments after announcing the appointment of University of Michigan attorney and law professor Joan Larsen to the state Supreme Court.

Snyder said the state is examining how to address Flint's water problems, including reports of increased levels of lead in tap water. "We've been actively working that issue for a significant period of time, and we've put a lot of additional resources in more recent days towards the issue," he said.

In response to a question about whether it was a mistake to use the Flint River for water in the city, Snyder said, "In terms of a mistake, we found there are probably things that weren't as fully understood when that switch was made."

"Again, we're looking at making sure they're within safe limits according to the federal government, and I would expect us to have more to talk about this subject before the end of the week, in terms of more tangible action items, not just what we're doing, but who we're partnering with -- Flint and the federal government."

Flint is in the midst of a health advisory after a study showing a sharp rise in the percentage of Flint children with elevated blood levels was released by a Hurley Medical Center doctor last week.

The study followed water testing by Virginia Tech university, which showed much higher lead in Flint tap water than the city's own testing had revealed.

In recent days, Flint Mayor Dayne Walling has said he believes the switch to the river increased the level of lead in water. City Administrator Natasha Henderson has made overtures to the Detroit Water and Sewerage Department about reconnecting as a water customer until the Karegnondi Water Authority pipeline to Lake Huron is completed.

Flint has struggled to treat Flint River water since ending purchases of Lake Huron water from Detroit in April 2014.

Snyder said Wednesday that he assisted in delivering 1,500 water filters in Flint last month not because he believed water required filtering, but because he wanted to help "nonprofits and others in terms of hopefully providing some items that people would perceive as helpful and give them more confidence and comfort in their water supply."

"I thought it was the right thing to do, to try to help people in some constructive way, and that was a positive step forward by working with people to help find those filters we did, and that may be part of this continuing process," Snyder said. "Again, making sure, though, people understand what the lead levels are, what's safe and not safe levels, and how to manage that in thoughtful way."

Officials with the Concerned Pastors for Social Action told The Flint Journal-MLive this week that the filters were given to them to distribute under the condition that the pastors not reveal the state's involvement in the distribution.

Dave Murray, a spokesman for Snyder, said there may have been a misunderstanding between representatives of the governor's office and the pastors.

"We asked the pastors to respect the wishes of the (anonymous) donor. We told the group that we were not necessarily looking for credit," Murray said in an email.

State officials responsible for overseeing the city water system have defended Flint water as meeting all requirements of the Safe Drinking Water Act.

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http://www.mlive.com/news/flint/index.ssf/2015/09/detroit_water_spokesman_wont_c.html

Detroit water for Flint? DWSD lawyers say 'no comment'

By Ron Fonger | rfonger1@mlive.com The Flint Journal on September 30, 2015 at 12:19 PM

FLINT, MI -- A spokesman for the Detroit Water and Sewerage Department isn't commenting on the potential to reconnect the city of Flint to its water system.

"I have been advised by DWSD counsel that we have no comment at this time. I will let you know if that changes," DWSD spokesman Greg Eno said in an email to The Flint Journal-MLive.

The comment comes in the same week that Flint City Administrator Natasha Henderson said she and other Flint officials "have recognized there's a problem with lead" in the water Flint is producing from the Flint River.

Henderson said she left a message for DWSD Director Sue F. McCormick, who told the Flint City Council in January that the city could be reconnected to its supply of treated Lake Huron water.

The Journal could not reach McCormick for comment.

Henderson and other Flint officials declared a health advisory last week following the release of data showing an increase in the percentage of children showing elevated blood lead levels in Flint.

The city administrator is the latest public official to suggest reconnecting to the Detroit water system that Flint left in April 2014 after DWSD terminated an expired contract to sell the city water.

Unlike Genesee County, which continued to purchase water from Detroit on a short-term contract, former emergency manager Darnell Earley, supported by Mayor Dayne Walling, oversaw a shift by the city, which began treating water drawn from the Flint River.

Since that time, the city has struggled with issues including bacteria, elevated levels of total trihalomethanes and higher lead levels in tap water.

State Department of Environmental Quality and city officials have said the city currently meets all Safe Drinking Water Act requirements, including lead levels in tests distributed by the city and tested by the state.

Robert J. Daddow, chairman of the Great Lakes Water Authority, the group established to take over water and sewer operations in Wayne, Oakland and Macomb counties starting next year, said he spoke to Henderson this week but is not in a position to act.

Daddow said any deal to reconnect Flint to Detroit water would have to be struck with DWSD.

"I think DWSD approached Flint when they were having problems ... We (DWSD) were rebuffed," he said.

Genesee County Drain Commissioner Jeff Wright said Flint would be able to use a 9-mile section of water transmission pipe that the county purchased from the city last year if it goes back to buying DWSD water.

"But it has to be coordinated through Detroit," Wright said.

Wright proposed the purchase of the short section of pipe last year because the city no longer had a use for it and the county needed it as an intake to receive water from DWSD.

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http://www.wnem.com/story/30153710/snyder-acknowledges-some-mistakes-in-tapping-flint-river

Snyder acknowledges some mistakes in tapping Flint River

Posted: Sep 30, 2015 1:03 PM CDT Updated: Sep 30, 2015 2:22 PM CDT

FLINT, MI (AP) -Gov. Rick Snyder is promising action this week in response to Flint's water crisis and says the consequences of switching to the Flint River in 2014 weren't "fully understood."

Blood samples show significant levels of lead in Flint children, likely because corrosive water from the Flint River is agitating lead in old plumbing systems.

Snyder spoke to reporters Wednesday after introducing a new Supreme Court justice. He acknowledged that lead levels have increased. The governor says "tangible action items" are coming.

The switch to the Flint River occurred when an emergency manager appointed by Snyder was running Flint.

The city's schools have urged students to avoid fountains and instead carry bottled water. Doctors last week urged Flint to stop using the river.

WNEM TV5 asked Gov. Snyder the Tough Questions today. We'll have his answers, tonight starting at 5.

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http://www.wnem.com/story/30154062/500-cases-of-water-to-be-handed-out-in-giveaway

500 cases of water to be handed out in giveaway

Posted: Sep 30, 2015 1:40 PM CDT Updated: Sep 30, 2015 1:40 PM CDT

FLINT, MI (WNEM/AP) -Following reports of lead contamination in the Flint water system, a local church is looking to help.

The House of Prayer MBC Outreach Ministry is planning a water giveaway Wednesday from 4-6 p.m.

The ministry plans to hand out around 500 free cases of water to residents who may not be able to afford it.

The issue developed after Flint moved off the Detroit water system and to the Flint River in 2014. Blood samples have shown significant increases in the levels of lead in children in the area, likely because corrosive water from the Flint River is agitating lead in old plumbing systems.

Governor Rick Snyder is now promising action this week in regards to the issue.

This will be House of Prayer's 3rd time distributing free cases of bottled water to residents this year.

You can take advantage of the giveaway by going to the House of Prayer MBC located at 1851 Carpenter road in Flint.

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Jeff Kelley
Director, Office of External Communications
U.S. EPA Region 5
ph: 312-353-1159

To: Hedman, Susan[hedman.susan@epa.gov]; Kaplan, Robert[kaplan.robert@epa.gov]; Hyde, Tinka[hyde.tinka@epa.gov]
Cc: Fortin, Denise[Fortin.Denise@epa.gov]; Deamer, Eileen[deamer.eileen@epa.gov]; Beckmann, Ronna Erin[beckmann.ronna@epa.gov]; Harrison, Melissa[Harrison.Melissa@epa.gov]; Rowan, Anne[rowan.anne@epa.gov]; Arcaute, Francisco[Arcaute.Francisco@epa.gov]; Cassell, Peter[cassell.peter@epa.gov]; Poy, Thomas[poy.thomas@epa.gov]; Abrams, Dan[Abrams.Dan@epa.gov]
From: Kelley, Jeff
Sent: Thur 10/1/2015 1:04:46 PM
Subject: Flint drinking water clips for the morning of Oct. 1

•□□□□□□□□ Snyder finally says lead in Flint water may be problem (Detroit Free Press)

•□□□□□□□□ Snyder: Things "were not fully understood" in Flint water switch (Michigan Radio)

•□□□□□□□□ Legislative Black Caucus urges state of emergency for Flint water (Flint Journal)

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http://www.freep.com/story/opinion/columnists/nancy-kaffer/2015/09/30/time-gov-says-lead-flint-water-may-problem/73088666/

Snyder finally says lead in Flint water may be problem

By Nancy Kaffer, Detroit Free Press Columnist 8:38 p.m. EDT September 30, 2015

Almost a week after news broke that more Flint kids have been lead poisoned, two weeks after state data confirmed that lead levels in Flint's water had spiked, more than a year after residents first noticed something was hinky with the water coming out of their taps, Gov. Rick Snyder has publicly acknowledged that Flint's water supply "appears" to have problems.

Publicly, because despite his office's repeated efforts to downplay the severity of the situation, an anonymous water-filter distribution to Flint residents shepherded by

Snyder's office earlier this month, suggests that privately, the governor may have understood that something was amiss in this impoverished town.

It's a welcome, if weak, concession from Snyder.

Flint's decision to leave the Detroit Water and Sewerage Department and join a new water authority, and its subsequent decision to pump and locally treat water from the Flint River while the new system is under construction, were made while the city was under state oversight, led by emergency managers appointed by, and answerable to, Snyder.

Sara Wurfel, Snyder's press secretary, said Wednesday that a working group with members from the governor's office and the state departments of Health and Human Services, Treasury and Department of Environmental Quality has been meeting for months to develop a "more detailed action plan," which she expects to make public this week.

But Wurfel also insisted that elevated lead levels in Flint's water fall within federal guidelines, and thus aren't actionable. And she said that aging pipelines, which researchers say is the source of elevated lead levels in the Flint's water supply, are a problem across the state.

Lead poisoning is irreversible; children affected by it have behavioral and developmental problems. The rate of childhood lead poisoning had been declining in Flint and in the state for decades. But in some Flint ZIP codes, the percentage of lead-poisoned children has doubled since the city began to draw water from the Flint River, according to blood test results analyzed and released last week by a Hurley Medical Center researcher. A Free Press analysis of state data bolsters those findings.

Now, Snyder has conceded that "it appears that (water) lead levels could be higher or have increased," and that there are "probably things that weren’t fully understood when the switch was made."

By July of this year, the administration should have known.

A memo written in July by a U.S. Environmental Protection Agency water regulations manager and leaked to the American Civil Liberties Union details post-switch problems: The water Flint once purchased from DWSD had been treated with the appropriate chemicals to make it safe, not just for human consumption, but for passage through aging infrastructure.

Because Flint didn't continue that treatment after it began pumping river water, and because the service lines that carry water through Flint's system are rife with lead and copper, those metals have leached into the city's drinking water, the EPA manager wrote: "Which is to be expected in a public water system that is not providing corrosion control treatment."

The EPA manager also questioned the methods -- endorsed by the MDEQ -- used to collect Flint water samples, specifically, advice to "pre-flush" pipes. The memo's author said that samples taken using this method would likely return results that underestimate the amount of lead in drinking water.

(When asked about the EPA memo in July, MDEQ spokesman Brad Wurfel told Michigan Radio: “Let me start here – anyone who is concerned about lead in the drinking water in Flint can relax.” He went on to say that the home of the Flint resident whose son's blood-lead levels prompted the EPA's involvement was "an outlier," and that there didn't appear to be a "broad problem" with Flint River water releasing lead into drinking water.)

So, Snyder has acknowledged the problem, if in vague terms, and promised tangible assistance. When asked what the state has done so far, Snyder spokeswoman Sara Wurfel pointed to the working group and state funding for improvements to Flint's water infrastructure. The state also allowed Flint to restructure some loan payments; that freed up about $2.4 million over two years to fix immediate problems of discoloration and odor found in Flint water after the switch and more pipeline replacement.

Considering Flint's financial status, that's certainly welcome help. But none of these efforts provide an immediate response to the reported increase of lead levels in either the water system, or in Flint children's blood.

Wurfel said the city is working to gather additional data about the Flint water supply.

But I'm inclined to believe that the city's needs are more pressing.

U.S. Rep. Dan Kildee, D-Flint, asked Snyder in a Sept. 29 letter to provide state funding for lead-clearing filters for Flint residents, issue a state health advisory -- in addition to the advisories already released by Flint and Genesee County -- conduct independent, widespread water testing, and to formally request help from federal agencies.

Those would be good places to start. But not to stop.

---

http://michiganradio.org/post/snyder-things-were-not-fully-understood-flint-water-switch#stream/0

Snyder: Things "were not fully understood" in Flint water switch

Rick Pluta, Michigan Radio • 11 hours ago

Governor Rick Snyder acknowledges the decision to switch the city of Flint's water system was not vetted the way it should have been. The city faces a crisis now that the water going to homes is contaminated by lead.

“In terms of a mistake, I would say is there are probably things that were not as fully understood as when that switch was made,” he said.

What was not “fully understood” is how corrosive the Flint River’s water is and that the switch would result in elevated lead levels.

This is the first time the governor has said the decision to switch the city from the Detroit water system and draw water, instead, from the Flint River was not well planned.

The governor’s office also participated in a plan to distribute water filters in the city while insisting the water was safe to drink.

The governor says steps will be announced later this week to try to rectify the situation.

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http://www.mlive.com/news/flint/index.ssf/2015/09/michgans_black_causus_urges_go.html

Legislative Black Caucus urges state of emergency for Flint water

By Jiquanda Johnson | jjohns16@mlive.com
The Flint Journal on September 30, 2015 at 6:46 PM, updated September 30, 2015 at 11:14 PM

FLINT, MI — The Michigan Legislative Black Caucus is putting pressure on Gov. Rick Snyder to issue a state of emergency for the city of Flint's water problems.

The organization announced in a Wednesday, Sept. 30, release that its members are concerned about the residents of Flint and lead exposure from the city's water.

The release cited blood samples from Genesee County children that show lead levels have increased since the city severed ties from the Detroit Water and Sewerage Department and began using water from the Flint River last year.

According to the release, state Rep. Sheldon Neeley, D-Flint, is working with local, state and federal officials to find solutions and resources.

"Issuing a health emergency is the most responsible thing to do," said Neeley, first vice chairman of the Legislative Black Caucus. "This is a public health crisis, and our children are most at risk. We urge Gov. Snyder to issue the state of emergency so the city of Flint can get immediate monetary relief."

If Snyder declares a state of emergency, the city could gain access to federal funding, the caucus said.

---
Jeff Kelley
Director, Office of External Communications
U.S. EPA Region 5
ph: 312-353-1159

To: Garbow, Avi[Garbow.Avi@epa.gov]
Cc: Meiburg, Stan[Meiburg.Stan@epa.gov]
From: Hedman, Susan
Sent: Thur 10/1/2015 2:16:27 PM
Subject: Re: Confidential and Privileged Communication

Also -- I gather that someone named Leslie Darmen (sp?) may be working on this.

Sent from my iPhone

On Oct 1, 2015, at 9:09 AM, Hedman, Susan <hedman.susan@epa.gov> wrote:

> Avi -- This e-mail provides the names of some of the people in your shop who have been working with R5 on issues related to the issue Stan and I raised with you last night.
>
> Sent from my iPhone
>
> Begin forwarded message:
>
>> **From:** "Frey, Bert" <frey.bertram@epa.gov>
>> **Date:** October 1, 2015 at 8:41:06 AM CDT
>> **To:** "Hedman, Susan" <hedman.susan@epa.gov>, "Kaplan, Robert" <kaplan.robert@epa.gov>, "Hyde, Tinka" <hyde.tinka@epa.gov>
>> **Subject: FW: Follow-up from today's call -- Draft letters and next steps**
>>
>> State of response to concerns regarding Flint's drinking water. See below.
>>
>> **From:** Glowacki, Joanna
>> **Sent:** Thursday, October 01, 2015 8:36 AM
>> **To:** Frey, Bert
>> **Cc:** Lupton, Jane; Lee, Sandra
>> **Subject:** FW: Follow-up from today's call -- Draft letters and next steps
>>
>> Bert,
>>
>> As just discussed, here is the email Heather sent to OGWDW, memorializing our discussion with HQ yesterday.
>>
>> Thanks,

Joanna S. Glowacki

Associate Regional Counsel

U.S. Environmental Protection Agency

Region 5

77 West Jackson Boulevard (C-14J)

Chicago, Illinois 60604

312-353-3757

312-385-5464 fax

From: Shoven, Heather
Sent: Wednesday, September 30, 2015 12:13 PM
To: Moriarty, Edward
Cc: Deltoral, Miguel; Glowacki, Joanna; King, Carol; Darman, Leslie; Poy, Thomas; Crooks, Jennifer; Damato, Nicholas; Bair, Rita; Porter, Andrea; Lopez-Carbo, Maria
Subject: Follow-up from today's call -- Draft letters and next steps

DRAFT: EPA INTERNAL DELIBERATIVE

Attorney Client / Ex. 5

Attorney Client / Ex. 5

Attorney Client / Ex. 5

We appreciate your time. Please let me know if you'd like me to set up a meeting when Maria is back in the office tomorrow.

Best wishes,

Heather

Heather A. Shoven | Enforcement Team Leader | U.S. Environmental Protection Agency, Region 5

Ground Water and Drinking Water Branch | 77 W. Jackson Blvd (WG-15J) | Chicago, IL 60604 | 312-886-0153

<DRAFT Letter to R5 States Regarding LCR OCCT Requirements v9-30-15.docx>

<DRAFT Letter to MDEQ Re Flint and LCR Implementation v9-30-15.doc>

To: Porter, Andrea[porter.andrea@epa.gov]
Cc: Thomas Poy[Poy.Thomas@epa.gov]; Deltoral, Miguel[deltoral.miguel@epa.gov]
From: Crooks, Jennifer
Sent: Thur 10/1/2015 3:10:49 PM
Subject: FW: Use of Local Assistance Set-Aside to fund in-home water filtration

Andrea— Susan is asking STPB if the lead filters (capital expense) are DWSRF loan eligible, which they are. Now the question has gone to OGC as to whether the replacement filters are DWSRF-eligible; are they O&M—which I think they are, then they are not DWSRF eligible. Not sure if any replacement filter would not be considered O&M, even if it was a 12-month filter. Do you know what type of lead filters are being purchased currently for Flint citizens? I know the Brita pitcher filters don't remove lead; I think they're purchasing filters that attach to the home faucet, right?

Jennifer

From: Marquardt, Steve
Sent: Thursday, October 01, 2015 9:53 AM
To: Cossa, Laura; Crooks, Jennifer
Subject: FW: Use of Local Assistance Set-Aside to fund in-home water filtration

Fyi

Deb was asked to raise the eligibility of filters to HQ

Steve Marquardt

USEPA Region 5

77 West Jackson Blvd

Chicago, Illinois 60604

(312)353-3214

From: Job, Charles
Sent: Thursday, October 01, 2015 9:03 AM
To: Baltazar, Debbie
Cc: Hogan, Joanne; Marquardt, Steve
Subject: RE: Use of Local Assistance Set-Aside to fund in-home water filtration

Debbie,

If the filters are replaced each month or so, they would not be capital items but would fall under O&M. O&M expenditures are explicitly not permitted to be funded under the DWSRF for public water systems under either the loan fund or set asides by statute.

Joanne – is there any other angle on this question? Am I missing something?

Chuck

Chuck Job

Chief, Infrastructure Branch

Drinking Water Protection Division

OGWDW/OW/EPA

1200 Pennsylvania Ave, NW

Washington DC 20460

202-564-3941

job.charles@epa.gov

From: Baltazar, Debbie
Sent: Wednesday, September 30, 2015 6:01 PM
To: Job, Charles
Cc: Hogan, Joanne; Marquardt, Steve
Subject: RE: Use of Local Assistance Set-Aside to fund in-home water filtration

Hi Chuck – Thanks for the response. However, what I'm asking about is the smaller, Brita-type filters that attach at the faucet. They might cost about $50 or so. That type of filer would not be a capital item, would not have a service life of several years, and would not add value to a home. What about those?

Thanks.

Debbie

From: Job, Charles
Sent: Wednesday, September 30, 2015 4:50 PM
To: Baltazar, Debbie
Cc: Hogan, Joanne; Marquardt, Steve
Subject: Re: Use of Local Assistance Set-Aside to fund in-home water filtration

Debbie,

Thank you for your email regarding Flint, Michigan.

We have determined in the past that a water system can take a loan to fund home treatment units. Likewise, a water system can use a loan to replace lead service lines - even privately-owned. Set asides must not be used for what the loan fund was set up to do. The state could decide to forgive the principal for the home units or the lead service line replacement.

A home treatment unit is a capital item with a service life of several years and it adds value to the home.

If you would like to discuss this further, we can do so.

Chuck

202-564-3941

Sent from my iPhone

On Sep 28, 2015, at 5:43 PM, "Baltazar, Debbie" <baltazar.debbie@epa.gov> wrote:

Hi Joanne -

As you may be aware, there have been numerous discussions between EPA and the city of Flint, MI regarding their drinking water situation. One apparent result of their switch from Detroit water to Flint River water has been an increase of lead leaching into its drinking water from lead service lines. My Regional Administrator would like OGC's opinion on whether the purchase of home water filters (the kind that attach at the faucet) would be an eligible cost under the DWSRF Local Assistance set-aside. I'm writing to you directly as this is somewhat urgent. If there is some other protocol I should follow to request this, please let me know. Thanks for your help!

Here's a link to an article regarding a press conference this morning:

http://www.mlive.com/news/flin about a
t/index.ssf/2015/09/coalition_for_clean_water_dema.html

Clean water activists demand Detroit reconnection in Flint after lead study | MLive.com

The Coalition for Clean Water is demanding Flint's administration switch back to purchasing water from Detroit after recent studies showed a spike in lead levels in drinking water and in children since the switch to Flint River water more than a year ago.

Read more...

To: Marquardt, Steve[marquardt.steve@epa.gov]; Cossa, Laura[cossa.laura@epa.gov]
Cc: Baltazar, Debbie[baltazar.debbie@epa.gov]; Thomas Poy[Poy.Thomas@epa.gov]; Deltoral, Miguel[deltoral.miguel@epa.gov]; Porter, Andrea[porter.andrea@epa.gov]
From: Crooks, Jennifer
Sent: Thur 10/1/2015 3:14:14 PM
Subject: RE: Use of Local Assistance Set-Aside to fund in-home water filtration

Any filter that removes a contaminant, whether it is point-of-use (faucet) or point-of-entry into the home, is considered treatment—even it's a $50 faucet filter vs. a point-of-entry filtration device for the entire house. Thus, the purchase of any type of treatment (capital expense) should be DWSRF loan eligible.

Jennifer

From: Marquardt, Steve
Sent: Thursday, October 01, 2015 9:53 AM
To: Cossa, Laura; Crooks, Jennifer
Subject: FW: Use of Local Assistance Set-Aside to fund in-home water filtration

Fyi

Deb was asked to raise the eligibility of filters to HQ

Steve Marquardt

USEPA Region 5

77 West Jackson Blvd

Chicago, Illinois 60604

(312)353-3214

From: Job, Charles
Sent: Thursday, October 01, 2015 9:03 AM
To: Baltazar, Debbie
Cc: Hogan, Joanne; Marquardt, Steve
Subject: RE: Use of Local Assistance Set-Aside to fund in-home water filtration

Debbie,

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Joanne – is there any other angle on this question? Am I missing something?

Chuck

Chuck Job

Chief, Infrastructure Branch

Drinking Water Protection Division

OGWDW/OW/EPA

1200 Pennsylvania Ave, NW

Washington DC 20460

202-564-3941

job.charles@epa.gov

From: Baltazar, Debbie
Sent: Wednesday, September 30, 2015 6:01 PM
To: Job, Charles
Cc: Hogan, Joanne; Marquardt, Steve
Subject: RE: Use of Local Assistance Set-Aside to fund in-home water filtration

Hi Chuck – Thanks for the response. However, what I'm asking about is the smaller, Brita-type filters that attach at the faucet. They might cost about $50 or so. That type of filer would not be a capital item, would not have a service life of several years, and would not add value to a home. What about those?

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A home treatment unit is a capital item with a service life of several years and it adds value to the home.

If you would like to discuss this further, we can do so.

Chuck

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Sent from my iPhone

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http://www.mlive.com/news/flin about a
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Read more...

To: Crooks, Jennifer[crooks.jennifer@epa.gov]
From: Porter, Andrea
Sent: Thur 10/1/2015 3:37:35 PM
Subject: RE: Use of Local Assistance Set-Aside to fund in-home water filtration

Hi Jen,

The Flint Water Study website (http://flintwaterstudy.org/2015/09/lead-in-drinking-water-health-risks-to-flint-residents/) includes a table with links to home water filters certified (NSF standard) to remove lead. It does not include Brita pitcher filters, but it does include pitcher/pour over filters from other companies. There are also faucet-mount filters listed.

Let me know if you need more on this.

Thanks,

Andrea Porter

Environmental Engineer

Ground Water & Drinking Water Branch

U.S. EPA, Region 5 (WG-15J)

77 W. Jackson Blvd.

Chicago, IL 60604

Phone: 312-886-4427

Fax: 312-697-2656

From: Crooks, Jennifer
Sent: Thursday, October 01, 2015 10:11 AM
To: Porter, Andrea
Cc: Poy, Thomas; Deltoral, Miguel
Subject: FW: Use of Local Assistance Set-Aside to fund in-home water filtration

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Jennifer

From: Marquardt, Steve
Sent: Thursday, October 01, 2015 9:53 AM
To: Cossa, Laura; Crooks, Jennifer
Subject: FW: Use of Local Assistance Set-Aside to fund in-home water filtration

Fyi

Deb was asked to raise the eligibility of filters to HQ

Steve Marquardt

USEPA Region 5

77 West Jackson Blvd

Chicago, Illinois 60604

(312)353-3214

From: Job, Charles
Sent: Thursday, October 01, 2015 9:03 AM
To: Baltazar, Debbie
Cc: Hogan, Joanne; Marquardt, Steve
Subject: RE: Use of Local Assistance Set-Aside to fund in-home water filtration

Debbie,

If the filters are replaced each month or so, they would not be capital items but would fall under O&M. O&M expenditures are explicitly not permitted to be funded under the DWSRF for public water systems under either the loan fund or set asides by statute.

Joanne – is there any other angle on this question? Am I missing something?

Chuck

Chuck Job

Chief, Infrastructure Branch

Drinking Water Protection Division

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Read more...

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From: Porter, Andrea
Sent: Thur 10/1/2015 7:14:53 PM
Subject: RE: Use of Local Assistance Set-Aside to fund in-home water filtration

Hi Jennifer,

In case you haven't see State Sen. Ananich's Flint water website, here's the link:

http://flintwaterinfo.com/

It includes a button at the top to see pictures and prices of filters certified to remove lead:

http://flintwaterinfo.com/filterguide/

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To: Hedman, Susan[hedman.susan@epa.gov]; Kaplan, Robert[kaplan.robert@epa.gov]; Hyde, Tinka[hyde.tinka@epa.gov]
Cc: Beckmann, Ronna Erin[beckmann.ronna@epa.gov]; Cassell, Peter[cassell.peter@epa.gov]; Rowan, Anne[rowan.anne@epa.gov]; Harrison, Melissa[Harrison.Melissa@epa.gov]; Abrams, Dan[Abrams.Dan@epa.gov]; Poy, Thomas[poy.thomas@epa.gov]
From: Kelley, Jeff
Sent: Thur 10/1/2015 7:25:17 PM
Subject: Flint water clips for the afternoon of October 1

- □□□□□□□□ Public health emergency declared due to lead in Flint water (AP)
- □□□□□□□□ Legislators take action to fix Flint water supply (Detroit Free Press)
- □□□□□□□□ Flint data on lead water lines stored on 45,000 index cards (Flint Journal)
- □□□□□□□□ More than 5,000 in Flint to get lead water filters following donation (Flint Journal)
- □□□□□□□□ GM donates $50K for water filters for Flint residents (WNEM)
- □□□□□□□□ Flint resident: Water looks like urine, smells like sewer (Detroit News)

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http://www.ksl.com/index.php?nid=157&sid=36769991&title=public-health-emergency-declared-due-to-lead-in-flint-water

Public health emergency declared due to lead in Flint water

By The Associated Press | Posted Oct 1st, 2015 @ 1:01pm

FLINT, Mich. (AP) — Genesee County commissioners have declared a public health emergency for residents using water from the Flint River through the city's water system.

Tests have shown children with elevated levels of lead, months after Flint began drawing and treating water from the river. The water is aggravating lead in old pipes in thousands of homes.

Commissioners issued an advisory Thursday recommending that people not drink the water unless tests show lead levels are down or the water has gone through an approved filter.

The General Motors Foundation, the local United Way and others have given at least $105,000 to buy filters.

Gov. Rick Snyder has pledged to announce some type of action by the end of the week. He says the consequences of using the river weren't "fully understood."

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http://www.freep.com/story/news/2015/10/01/legislators-take-action-fix-flint-water-supply/73152540/

Legislators take action to fix Flint water supply

By Kathleen Gray, Detroit Free Press Lansing Bureau 2:31 p.m. EDT October 1, 2015

LANSING The Michigan Legislature is beginning to take notice of the ongoing controversy surrounding Flint’s water system, which has been plagued since the city disconnected from the Detroit water system and began pulling its water supply from the Flint River.

The state Senate approved a supplemental appropriations bill that included a $100 placeholder while the state looks for a solution to the water issue.

“We want to make sure we have an accurate number. We didn’t want to put too much in or not enough,” said state Sen. Jim Ananich, D-Flint. “We want to get an accurate understanding of what it’s going to cost to get us the help that we need.”

The appropriation comes on the heels of Gov. Rick Snyder telling reporters on Wednesday that he’ll have some more answers on the state’s role in fixing Flint’s water problems by the end of the week.

An anonymous benefactor and the state have begun distributing water filters to Flint residents in recent weeks after a Hurley Medical Center researcher found lead levels increasing in Flint.

“We’ve been actively working that issue for a significant period of time and providing additional resources recently,” Snyder said. “I would expect us to have more to talk about that by the end of of the week and how we’re partnering with Flint and the federal government on this.”

In 2014, city officials ended the city's contract with the Detroit Water and Sewerage Department, saying that water costs were too high. They opted instead to pull from the Karegnondi Water Authority, which is building a system to supply Genesee County with water pulled from Lake Huron. In the long run, this will mean lower water costs, officials have said, adding that water from the Detroit system will cost $1.5 million more a month than the city is paying now.

But until the new system comes online in 2016, Flint is temporarily pulling water from the Flint River. Since it made the switch, residents have complained that the water smells, is discolored and makes them sick.

And the Hurley researcher recently found that the number of Flint children with elevated blood-lead levels — 5 micrograms per deciliter or more — jumped from 2.1% in the 20 months prior to Sept. 15, 2013, to 4.0% between Jan. 1 and Sept. 15 this year. In certain ZIP codes, the change was even more troubling, she said — jumping from 2.5% of the children tested to 6.3%.

Ananich said filters need to be made available to affected residents, especially vulnerable citizens like children and senior citizens, and the corrosion in the water system pipes needs to be addressed.

“And I think we need to move to a new water source, potentially going back to Detroit,” he said. “Filters can do a lot of good, corrosion control can do some good. But a new water source has to happen and it has to happen soon.”

In addition to the money for Flint water issue, the appropriations bill approved by the Senate also included a $7.7-million settlement of a lawsuit filed by a Flint woman whose car was hit by a Michigan State Police trooper, who was pursuing a driver who refused to stop for a seat belt violation.

The woman and her daughter were injured in the July 3, 2014, crash and another passenger Jacqueline Nichols, 64, of Flint, was killed. Trooper Timothy Fagin received undisclosed discipline after the crash and remains a state trooper.

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http://www.mlive.com/news/flint/index.ssf/2015/10/flint_official_says_data_on_lo.html

Flint data on lead water lines stored on 45,000 index cards

By Ron Fonger | rfonger1@mlive.com The Flint Journal on October 01, 2015 at 12:18 PM

FLINT, MI -- The city knows which homes in Flint have pipes most likely to leach lead into tap water, but can't easily access the information because it's kept on about 45,000 index cards.

Department of Public Works Director Howard Croft said his office is trying to convert data from the cards, including whether homes have lead service lines, to an electronic spreadsheet program so that homes with the highest risk of lead in water can be easily identified.

The effort could be critical to the distribution of 5,250 lead-clearing water filters being funded by the United Way, General Motors and others.

A United Way news release today, Oct. 1, says filters will be distributed "to the highest-risk populations first to ensure the safety of the community."

Testing by Virginia Tech university and a study by the director of Hurley Medical Center's pediatric residency program have warned of a serious problem with lead in Flint's drinking water.

Croft said Wednesday, Sept. 30, that he "can't put a number on" how long it will take the city to convert its paper records into electronic data or maps that can be used to pinpoint lead hotspots. "It's on our to-do list."

Work on computerizing information on the index cards has started, but about 75 percent of the work remains, the DPW director told the City Council Wednesday.

Although the city's water is lead-free when it leaves Flint's water treatment plant, lead service lines that feed about half of homes and businesses in the city have the potential to leach lead as the water flows through the pipes.

Experiments by Virginia Tech university show Flint's treated water -- drawn from the Flint River -- is about 19 times more corrosive than Lake Huron water that had been purchased from the city of Detroit for decades, making the problem much worse than in the past.

Flint changed its drinking water source from Lake Huron to Flint River in April 2014, a decision that came as the city was being run by a state-appointed emergency manager.

Although Flint Mayor Dayne Walling has said the city will complete plans for making the river water less corrosive by the end of the year, there is no treatment for corrosion -- such as the addition of phosphates -- currently.

Gov. Rick Snyder said this week that the state is preparing to announce its plans for assisting the city with the lead in water problem.

After months of assurances by the DEQ that Flint water met all requirements of the Safe Drinking Water Act, Snyder said Wednesday, Sept. 30, that "it appears that lead levels could be higher or could be increased.".

While the governor said the decision to run Flint River water through the city's aging water distribution system, including lead service lines to homes, was made "with the community," Walling has said he had no involvement in the decision and privately questioned it.

Croft has said about half of Flint's homes have lead service lines and quickly identifying where they are located could be critical for water filter distribution or any program that involves the removal and replacement of lead pipes.

Walling asked Snyder in a Sept. 14 letter for $10 million for what he called a "healthy homes initiative" aimed at replacing lead service lines in "the most vulnerable households."

Croft said he's been in contact with the University of Michigan-Flint and Kettering University, asking if students might be available to help city employees with the task of computerizing data about lead pipes from the index cards.

City Councilwoman Vicki VanBuren said she was surprised that the city's information on lead service lines isn't an a format that's already easily accessible.

"I had asked if we could get a map," VanBuren said. "When I requested that information ... (Croft) responded, 'OK, no problem.' So I was surprised when there was nothing to see.

"That seems like basic information they should already be working with," she said.

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http://www.mlive.com/news/flint/index.ssf/2015/10/more_than_5000_in_flint_to_get.html

More than 5,000 in Flint to get lead water filters following donation

By Dominic Adams | dadams5@mlive.com The Flint Journal Follow on Twitter on October 01, 2015 at 11:35 AM, updated October 01, 2015 at 12:04 PM

FLINT, MI – More than 5,000 Flint residents will be able to get water filters following an influx of $105,000 from private and public sources.

The filters come as the city and county have issued lead advisories related to the city's drinking water.

A recent study by a Hurley Medical Center doctor says infants and children are being found with elevated levels of lead in their blood since the city switched to using the Flint River as its water source.

The General Motors Foundation donated $50,000, the United Way of Genesee County pitched in $25,000 and another $10,000 came from the Making Our Children Smile Foundation.

Another $20,000 from community development block grant funds was secured by the city, according to the United Way.

The United Way will work with the Genesee County Health Department to purchase the filters, which cost about $20 each. The health department is working with community partners to prioritize need and distribute filters to the highest risk populations first to ensure the safety of the community. Water filters are NSF certified to include removal of lead.

"Upon first learning of the water quality issue in the city of Flint the United Way partnered with Hurley Children's Hospital, Mott Children's Health Center, the Food Bank of Eastern Michigan and the Flint Diaper Bank to provide bottled water to families in the community," Jamie Gaskin, CEO of the United Way of Genesee County said in a statement. "Now is the time to provide a more economical and long-term solution to help residents until the water issue is resolved."

Information on distribution of the filters will be communicated through the Health Department website, as well as a hotline that is in the process of being established, the statement said.

The Flint School District also has stopped using the city as a water source and is seeking bottled water donations.

"This is a great example of community members, leaders and partners banding together to ensure people have access to clean drinking water," Flint Mayor Dayne Walling said in a statment.

The Community Foundation of Greater Flint also is working to get filters for the initiative.

"Giving back to our communities is more than investing in our facilities; it involves helping to improve the quality of life for those who live in our plant cities," Cathy Clegg, GM North American Manufacturing and Labor Relations vice president said in a statement. "The United Way is a long-time GM partner and is well positioned in the Flint area to help the residents most in need."

Cindy Estrada, UAW vice president and director of the union's GM Department, worked with Clegg to secure the $50,000 grant from the GM Foundation. The UAW was also involved in initial efforts to get bottled water into the community, the statement said.

"The UAW has a proud history of helping workers and their families, but we also take great pride in assisting people in our communities," Estrada said. "Together with the United Way of Genesee County, GM and the GM Foundation, we hope residents are able to access clean water for their families."

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http://www.wnem.com/story/30162800/gm-donates-50k-for-water-filters-for-flint-residents

GM donates $50K for water filters for Flint residents

Posted: Oct 01, 2015 10:22 AM CDT Updated: Oct 01, 2015 10:22 AM CDT

By Brianna Owczarzak, Managing Web Editor

FLINT, MI (WNEM) -General Motors is stepping up to help Flint residents with the water crisis.

The GM Foundation is donating $50,000 to purchase water filters for Flint residents. The donation went to the United Way of Genesee County.

The filters will remove contaminants from the water, allowing residents to use the water for drinking and cooking.

“Giving back to our communities is more than investing in our facilities; it involves helping to improve the quality of life for those who live in our plant cities,” said Cathy Clegg, GM North American Manufacturing and Labor Relations vice president. “The United Way is a long-time GM partner and is well positioned in the Flint area to help the residents most in need.”

Overall, the United Way of Genesee County and the city of Flint raised more than $100,000 for water filters.

Along with the $50,000 from GM, the United Way gave $25,000 from its general fund, the Making our Children Smile Foundation donated $10,000, and $20,000 came from Community Development Block Grant funds.

The water filters cost about $20 each, according to the United Way.

The highest risk populations will get the water filters first.

“This is a great example of community members, leaders and partners banding together to ensure people have access to clean drinking water,” Flint Mayor Dayne Walling said.

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http://www.detroitnews.com/story/news/local/michigan/2015/09/30/flint-water-woes-seep-city-state-politics/73129478/

Flint resident: Water looks like urine, smells like sewer

Jim Lynch and Chad Livengood, The Detroit News 8:50 a.m. EDT October 1, 2015

Flint — The questionable quality of the city's drinking water made headlines again this week, but not much of it has been news to Ashley Holt.

For almost a year, the water from her faucet has looked "like urine," smelled "like the sewer" and, if you're brave enough to sip it, hasn't tasted "normal," the 25-year-old Flint resident said. It's why she's limited for months how often her children — ages 5, 6 and 12 — come in contact with it.

But following last week's revelation that Flint children are showing higher amounts of lead in their blood, the situation has escalated for her cash-strapped family.

In a city where 41.5 percent of the population is below the poverty line, a lack of money is the reason Holt was walking instead of driving downtown this week to pick up her children from school. She scrambles to find enough to buy them bottled water.

"The only option I've got is just to not drink the water and stick with pop and juice," Holt said. "(I) go to the store and get a gallon of water a day, if I can afford it at the time."

The hardships experienced by residents here are having public health and political ripple effects that are being felt from city hall to the governor's office. Gov. Rick Snyder said Tuesday he could unveil "more action steps" as early as the end of this week.

Researchers from Virginia Tech and Hurley Children's Hospital in Flint said last week

that lead levels in local children have risen since the city, under Snyder's appointed emergency manager, started getting its water from the Flint River instead of the Detroit Water & Sewerage System. Studies showed that in some areas lead levels doubled and, in two local zip codes, the levels tripled.

Lead poisoning can cause learning disabilities, according to the Centers for Disease Control and Prevent. At very high levels, it also can lead to seizures, coma and even death.

Water quality has become the central issue in the mayoral election that is a month away. It also has put Snyder's administration — particularly the Michigan Department of Environmental Quality — under the microscope. There are questions about how the DEQ tests water quality, as well as the governor's back-channel efforts this summer to send 1,500 water filters to Flint families when state officials insisted the water was fine.

Sommer Adams said there are doctor's visits in the future for her three kids because she fears they may have been exposed to lead.

"Even though I don't see it in my water or haven't experienced no type of (problems) with drinking it, you never know," said Adams, 23.

Governor questioned

The idea of switching water systems seemed to make sense. Municipal officials didn't like the rates residents were forced to pay and wanted to be part of a new supply system being built to draw from Lake Huron, just like Detroit's system.

Tapping the river for a year or two was supposed to provide water until the Karegondi Water Authority was up and running. Almost immediately after the switch in April 2014, there were complaints about the treated river water's appearance, smell and taste.

A year later, the state-appointed successor emergency manager, Jerry Ambrose, rejected the city council's attempts to tie back to the Detroit system as "incomprehensible."

"(Lake Huron) water from Detroit is no safer than water from Flint," Ambrose said at the time.

The Snyder administration's confirmation Tuesday that it helped an anonymous donor send 1,500 water filters to Flint families seemed to undercut the decision. At an unrelated Wednesday press conference, the Capitol press corps grilled the governor about Flint's woes.

"It appears that lead levels could be higher or have increased... ," Snyder said. "We're looking at making sure they're within safe limits, according to the federal government."

Mayor election a focus

The water problems have ratcheted up interest in the Nov. 3 mayoral election, which figured to draw more scrutiny anyway since Flint emerged from state control in late April.

Business owner and candidate Karen Weaver has attacked incumbent Mayor Dayne Walling for failing to take back total control of the government from the city administrator left in place by the state's emergency manager. After the reporting of the lead results, Weaver has claimed that Walling knew about the problem as far back as June, thanks to a U.S. Environmental Protection Agency report that flagged the situation.

"You didn't speak up," she said Wednesday. "Yes, the emergency manager had power to make the final decision, but nobody takes your voice."

Walling countered that the first time he heard of the elevated lead levels was Sept. 21, a few days before the results were made public.

"I'm asking everyone to carefully consider my record because it has been a complicated four years with four different emergency managers that each involved myself and city council in different ways at different times," Walling said.

This month, Walling wrote to Snyder requesting the state help with $30 million in new infrastructure improvement aid.

Public Information Officer Jason Lorenz said the city hasn't received a response.

Old pipes complicate testing

Shervon Goss, 32, paints a disturbing picture of what she experiences in her townhouse complex in Flint's south end. Her tap water has an odor, Goss said, and showers result in dry skin and rashes.

"It's a complex with a whole lot of people and a whole lot of babies there," she said. "These are people who probably can't afford to go and buy bottled water. So they get forced into drinking the (tap) water that's unhealthy."

Like many residents, Goss wonders how this happened.

State officials admitted it is difficult to do consistent lead testing on water being pumped through old lead plumbing and service connection lines. Water tested at intake or upon release from the treatment plant can be exposed to lead when it reaches old lead connections on private property, the officials said.

“The testing protocol that we have tends to offer a systemwide assessment of how water interacts with that line and home plumbing,” said Brad Wurfel, DEQ’s spokesman. “There’s a lot we unfortunately don’t know about those (home lead) levels.”

Some local groups have stepped up to provide free water to residents. The House of Prayer Missionary Baptist Church gave away bottled water Wednesday, drawing a line of cars.

On Thursday, the Food Bank of Eastern Michigan will ship packages of diapers combined with gallon jugs of water to area social service organizations.

Local activists are prepared to hold protests and urge residents to stop paying their water bills if state and city officials don’t make the switch back to water from Detroit, said Rev. Alfred Harris, pastor of Saints Church in Flint.

“We’re praying that the governor will say we’ve got to go back to Detroit water,” Harris said.

---
Jeff Kelley
Director, Office of External Communications
U.S. EPA Region 5
ph: 312-353-1159

To: Glowacki, Joanna[glowacki.joanna@epa.gov]
From: Poy, Thomas
Sent: Thur 10/1/2015 8:26:48 PM
Subject: FW: FYI from HQ: Flint happenings

Tom Poy

Chief, Ground Water and Drinking Water Branch

USEPA - Region 5

(312) 886-5991

From: Shoven, Heather
Sent: Tuesday, September 29, 2015 11:59 AM
To: Bair, Rita; Deltoral, Miguel; Damato, Nicholas; Poy, Thomas; Porter, Andrea; Glowacki, Joanna; Darman, Leslie; Crooks, Jennifer
Subject: FYI from HQ: Flint happenings

From: King, Carol
Sent: Tuesday, September 29, 2015 11:53 AM
To: Shoven, Heather
Subject: FW: Flint happenings

From: Grevatt, Peter
Sent: Tuesday, September 29, 2015 12:48 PM
To: Hannon, Arnita
Cc: Asher, Jonathan; Clark, Becki; Christ, Lisa; King, Carol; Burneson, Eric; Lopez-Carbo, Maria; Hannon, Arnita; Galada, Heather; Greene, Ashley; Hedman, Susan
Subject: Re: Flint happenings

Thanks Arnita. I had not seen this. Please let me know if you need any assistance from us.

Sent from my iPhone

On Sep 29, 2015, at 11:40 AM, Hannon, Arnita <Hannon.Arnita@epa.gov> wrote:

> FYI! Sorry if you already have this but just making sure.
>
> Thank you!
>
> Sent from my iPhone
>
> Begin forwarded message:
>
> > **From:** "Rupp, Mark" <Rupp.Mark@epa.gov>
> > **Date:** September 29, 2015 at 12:33:36 PM EDT
> > **To:** "Hannon, Arnita" <Hannon.Arnita@epa.gov>, "Barbery, Andrea" <Barbery.Andrea@epa.gov>, "Cook-Shyovitz, Becky" <Cook-Shyovitz.Becky@epa.gov>, "Bowles, Jack" <Bowles.Jack@epa.gov>
> > **Subject: Flint happenings**
> >
> > The State and City are pulling together a “ten point plan” and they have asked for EPA's help to work out the details. The goal is to have a press conference on Thursday or Friday to announce the following:
> >
> > 1. Bottled water and pre-mixed formula for households with infants and children (the Michigan Department of Health and Human Services is working with USDA to do this through the WIC program)
> >
> > 2. Lead filters for households with infants and children (a group of nonprofits has pledged $1 million for this purpose and will be working with the Meijer discount chain to obtain filters at wholesale.)
> >
> > 3. Water will be tested for lead in all Flint schools. (MDEQ)

4. Water will be tested for lead in all Flint households with lead service lines that have infants and children. (MDEQ)

5. All other Flint households can request a free water test. (MDEQ)

6. The State will step up health advisory/public education efforts to encourage flushing and use of filters (MDEQ/MDHHS)

7. MDEQ will establish an end date for Flint to complete implementation of fully-optimized corrosion control – and move up the start date to commence implementation of corrosion control. (The current start date is 1/16)

8. MDEQ will expand the City's Technical Advisory Committee by adding several University of Michigan scientists and will immediately convene the committee. (This committee includes ORD scientists from the Cincinnati Lab)

9. The State of Michigan's "Chief Medical Executive" will oversee a review of data that has been collected on Flint children's blood lead levels.

10. MDEQ will help Flint finance accelerated replacement of lead service lines (using SRF)

The Mayor and Director Wyant have asked Susan to go to Flint to participate in the press conference. The Mayor has also asked Susan to meet with a group of faith leaders who have been very vocal on this issue: http://www.abc12.com/home/headlines/Rally-held--329788391.html

To: Susan Hedman[Hedman.Susan@epa.gov]; Robert Kaplan[Kaplan.Robert@epa.gov]; Hyde, Tinka[hyde.tinka@epa.gov]
From: Frey, Bert
Sent: Thur 10/1/2015 9:17:52 PM
Subject: FW: FYI from HQ: Flint happenings: Information of what the State and City plan to announce tomorrow

See the forwarded message from Mark Rupp below.

From: Glowacki, Joanna
Sent: Thursday, October 01, 2015 3:32 PM
To: Frey, Bert; Lupton, Jane; Lee, Sandra
Subject: FW: FYI from HQ: Flint happenings
Importance: High

Susan and Tinka plan to be in Flint tomorrow at a press conference, during which MDEQ will unveil the plan I referred to in my earlier message. Below is the email from HQ. The plan was a 10pt plan; I heard from Tom that it is now a 13pt. Regardless, the State has put something together to address the corrosion control and Pb issues and will be publicizing it tomorrow.

Thank you,

Joanna S. Glowacki

Associate Regional Counsel

U.S. Environmental Protection Agency

Region 5

77 West Jackson Boulevard (C-14J)

Chicago, Illinois 60604

312-353-3757

312-385-5464 fax

From: Shoven, Heather
Sent: Tuesday, September 29, 2015 11:59 AM

To: Bair, Rita; Deltoral, Miguel; Damato, Nicholas; Poy, Thomas; Porter, Andrea; Glowacki, Joanna; Darman, Leslie; Crooks, Jennifer
Subject: FYI from HQ: Flint happenings

From: King, Carol
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Sent: Tuesday, September 29, 2015 12:48 PM
To: Hannon, Arnita
Cc: Asher, Jonathan; Clark, Becki; Christ, Lisa; King, Carol; Burneson, Eric; Lopez-Carbo, Maria; Hannon, Arnita; Galada, Heather; Greene, Ashley; Hedman, Susan
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<Barbery.Andrea@epa.gov>, "Cook-Shyovitz, Becky" <Cook-Shyovitz.Becky@epa.gov>, "Bowles, Jack" <Bowles.Jack@epa.gov>
Subject: Flint happenings

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To: Hedman, Susan[hedman.susan@epa.gov]; Kaplan, Robert[kaplan.robert@epa.gov]; Hyde, Tinka[hyde.tinka@epa.gov]
Cc: Beckmann, Ronna Erin[beckmann.ronna@epa.gov]; Cassell, Peter[cassell.peter@epa.gov]; Rowan, Anne[rowan.anne@epa.gov]; Harrison, Melissa[Harrison.Melissa@epa.gov]; Abrams, Dan[Abrams.Dan@epa.gov]; Poy, Thomas[poy.thomas@epa.gov]
From: Kelley, Jeff
Sent: Thur 10/1/2015 9:35:28 PM
Subject: RE: Flint water clips for the afternoon of October 1

Here's another one …

http://www.detroitnews.com/story/news/local/michigan/2015/10/01/flint-water-epa/73160176/

Coalition asks EPA to intervene in Flint water issue

Jim Lynch, The Detroit News 3:38 p.m. EDT October 1, 2015

The federal government needs to step in to ensure residents in Flint have safe drinking water following health complaints and findings of elevated lead levels in children's blood, a group of environmental and civil rights groups said Thursday.

The coalition of the American Civil Liberties Union of Michigan, the National Resources Defense Council and the Flint-based group Water You Fighting For said they are petitioning the U.S. Environmental Protection Agency to intervene in the city's year-and-a-half-long water crisis.

State officials will be in Flint Friday to address concerns over the city's water situation.

That situation escalated in the past week after researchers from Virginia Tech and Hurley Children's Hospital in Flint said lead levels in local children have risen. Studies showed that in some areas lead levels doubled and, in two local ZIP codes, tripled. Those finding came on the heels of 19 months of complaints about the odor, appearance and taste of the tap water that is drawn from the Flint River.

“Neither the City of Flint nor the State of Michigan is doing enough to fix the problem of lead in our drinking water," said LeeAnne Walters, a member of the Flint-based group Water You Fighting For. “As evidenced by the ongoing poisoning of the children of Flint, it’s time for the EPA to take immediate action to provide us with a safe water source. The city and state need to test for lead and copper as intended by the federal lead and copper rule.”

Walters’ organization was joined by the American Civil Liberties Union and the Natural Resources Defense Council in asking the federal government to step in. The groups want the EPA to compel the city to return to getting its water from the Detroit Water and Sewerage Department.

Flint is in the midst of a transition to a new water source to get out from under the rates charged by the Detroit water system. It’s a move that was instigated while the city was under the leadership of an emergency manager appointed by Gov. Rick Snyder.

The city is committed to getting its water from Lake Huron through the Karegondi Water Authority when the system comes online, possibly as soon as next year. In the interim, the Flint River has been providing drinking water to city residents since last spring.

But now there is evidence that the water is taking on lead from the plumbing connections that tie much of the city’s old housing stock to city waterlines.

State officials said Thursday they will outline their response to the lead problems in Flint on Friday.

“This issue is one that we’ve been actively engaged on and our administration will be outlining a collaborative, comprehensive action plan tomorrow afternoon,” said Snyder spokeswoman Sara Wurfel. “We believe protecting public health is paramount and safe, clean, accessible drinking water is essential. That’s what we are focused on helping ensure and working together across local, state and federal levels to bring all resources and ideas to bear.

“(I) would add that the governor and state agencies have been closely working with Flint leaders on their infrastructure challenges for a while, including providing $4.2 million in grants and restructured loan financing to provide resources needed to locate and fix infrastructure problems and add the carbon filtration system, additional testing and helping identify and provide filters.”

On Thursday, the groups asking for federal intervention charged city and state officials with moving too slowly to address the problems.

“Flint city officials, state-appointed emergency managers and the Michigan Department of Environmental Quality have all failed monumentally in their duty to provide the people of Flint with clean, safe drinking water," said Kary Moss, director of the ACLU of Michigan. “Now that the truth is revealed, further action is imperative.

“The devastating revelations from independent researchers, as well as our own nearly year-long investigation, demand an immediate, effective and comprehensive response. The EPA, along with and city officials, must exercise their full authority to guarantee that the people of Flint are protected from the hazardous water now flowing into their homes. The first step should be to overturn the emergency manager order and remove the Flint River as the city’s source of water.”

---
Jeff Kelley
Director, Office of External Communications
U.S. EPA Region 5
ph: 312-353-1159

From: Kelley, Jeff
Sent: Thursday, October 01, 2015 2:25 PM
To: Susan Hedman; Robert Kaplan (kaplan.robert@epa.gov); Hyde, Tinka
Cc: Ronna Beckmann; Cassell, Peter; Rowan, Anne (rowan.anne@epa.gov); Melissa Harrison (Harrison.Melissa@epa.gov); Abrams, Dan; Poy, Thomas

Subject: Flint water clips for the afternoon of October 1

- □□□□□□□□ Public health emergency declared due to lead in Flint water (AP)
- □□□□□□□□ Legislators take action to fix Flint water supply (Detroit Free Press)
- □□□□□□□□ Flint data on lead water lines stored on 45,000 index cards (Flint Journal)
- □□□□□□□□ More than 5,000 in Flint to get lead water filters following donation (Flint Journal)
- □□□□□□□□ GM donates $50K for water filters for Flint residents (WNEM)
- □□□□□□□□ Flint resident: Water looks like urine, smells like sewer (Detroit News)

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http://www.ksl.com/index.php?nid=157&sid=36769991&title=public-health-emergency-declared-due-to-lead-in-flint-water

Public health emergency declared due to lead in Flint water

By The Associated Press | Posted Oct 1st, 2015 @ 1:01pm

FLINT, Mich. (AP) — Genesee County commissioners have declared a public health emergency for residents using water from the Flint River through the city's water system.

Tests have shown children with elevated levels of lead, months after Flint began drawing and treating water from the river. The water is aggravating lead in old pipes in thousands of homes.

Commissioners issued an advisory Thursday recommending that people not drink the water unless tests show lead levels are down or the water has gone through an approved filter.

The General Motors Foundation, the local United Way and others have given at least $105,000 to buy filters.

Gov. Rick Snyder has pledged to announce some type of action by the end of the week. He says the consequences of using the river weren't "fully understood."

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http://www.freep.com/story/news/2015/10/01/legislators-take-action-fix-flint-water-supply/73152540/

Legislators take action to fix Flint water supply

By Kathleen Gray, Detroit Free Press Lansing Bureau 2:31 p.m. EDT October 1, 2015

LANSING The Michigan Legislature is beginning to take notice of the ongoing controversy surrounding Flint's water system, which has been plagued since the city disconnected from the Detroit water system and began pulling its water supply from the Flint River.

The state Senate approved a supplemental appropriations bill that included a $100 placeholder while the state looks for a solution to the water issue.

“We want to make sure we have an accurate number. We didn't want to put too much in or not enough," said state Sen. Jim Ananich, D-Flint. "We want to get an accurate understanding of what it's going to cost to get us the help that we need."

The appropriation comes on the heels of Gov. Rick Snyder telling reporters on Wednesday that he'll have some more answers on the state's role in fixing Flint's water problems by the end of the week.

An anonymous benefactor and the state have begun distributing water filters to Flint residents in recent weeks after a Hurley Medical Center researcher found lead levels increasing in Flint.

"We've been actively working that issue for a significant period of time and providing additional resources recently," Snyder said. "I would expect us to have more to talk about that by the end of of the week and how we're partnering with Flint and the federal government on this."

In 2014, city officials ended the city's contract with the Detroit Water and Sewerage Department, saying that water costs were too high. They opted instead to pull from the Karegnondi Water Authority, which is building a system to supply Genesee County with water pulled from Lake Huron. In the long run, this will mean lower water costs, officials have said, adding that water from the Detroit system will cost $1.5 million more a month than the city is paying now.

But until the new system comes online in 2016, Flint is temporarily pulling water from the Flint River. Since it made the switch, residents have complained that the water smells, is discolored and makes them sick.

And the Hurley researcher recently found that the number of Flint children with elevated blood-lead levels — 5 micrograms per deciliter or more — jumped from 2.1% in the 20 months prior to Sept. 15, 2013, to 4.0% between Jan. 1 and Sept. 15 this year. In certain ZIP codes, the change was even more troubling, she said — jumping from 2.5% of the children tested to 6.3%.

Ananich said filters need to be made available to affected residents, especially vulnerable citizens like children and senior citizens, and the corrosion in the water system pipes needs to be addressed.

“And I think we need to move to a new water source, potentially going back to Detroit,” he said. “Filters can do a lot of good, corrosion control can do some good. But a new water source has to happen and it has to happen soon.”

In addition to the money for Flint water issue, the appropriations bill approved by the Senate also included a $7.7-million settlement of a lawsuit filed by a Flint woman whose car was hit by a Michigan State Police trooper, who was pursuing a driver who refused to stop for a seat belt violation.

The woman and her daughter were injured in the July 3, 2014, crash and another passenger Jacqueline Nichols, 64, of Flint, was killed. Trooper Timothy Fagin received undisclosed discipline after the crash and remains a state trooper.

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http://www.mlive.com/news/flint/index.ssf/2015/10/flint_official_says_data_on_lo.html

Flint data on lead water lines stored on 45,000 index cards

By Ron Fonger | rfonger1@mlive.com The Flint Journal on October 01, 2015 at 12:18 PM

FLINT, MI -- The city knows which homes in Flint have pipes most likely to leach lead into tap water, but can't easily access the information because it's kept on about 45,000 index cards.

Department of Public Works Director Howard Croft said his office is trying to convert data from the cards, including whether homes have lead service lines, to an electronic spreadsheet program so that homes with the highest risk of lead in water can be easily identified.

The effort could be critical to the distribution of 5,250 lead-clearing water filters being funded by the United Way, General Motors and others.

A United Way news release today, Oct. 1, says filters will be distributed "to the highest-risk populations first to ensure the safety of the community."

Testing by Virginia Tech university and a study by the director of Hurley Medical Center's pediatric residency program have warned of a serious problem with lead in Flint's drinking water.

Croft said Wednesday, Sept. 30, that he "can't put a number on" how long it will take the city to convert its paper records into electronic data or maps that can be used to pinpoint lead hotspots. "It's on our to-do list."

Work on computerizing information on the index cards has started, but about 75 percent of the work remains, the DPW director told the City Council Wednesday.

Although the city's water is lead-free when it leaves Flint's water treatment plant, lead service lines that feed about half of homes and businesses in the city have the potential to leach lead as the water flows through the pipes.

Experiments by Virginia Tech university show Flint's treated water -- drawn from the Flint River -- is about 19 times more corrosive than Lake Huron water that had been purchased from the city of Detroit for decades, making the problem much worse than in the past.

Flint changed its drinking water source from Lake Huron to Flint River in April 2014, a decision that came as the city was being run by a state-appointed emergency manager.

Although Flint Mayor Dayne Walling has said the city will complete plans for making the river water less corrosive by the end of the year, there is no treatment for corrosion -- such as the addition of phosphates -- currently.

Gov. Rick Snyder said this week that the state is preparing to announce its plans for assisting the city with the lead in water problem.

After months of assurances by the DEQ that Flint water met all requirements of the Safe Drinking Water Act, Snyder said Wednesday, Sept. 30, that "it appears that lead levels could be higher or could be increased.".

While the governor said the decision to run Flint River water through the city's aging water distribution system, including lead service lines to homes, was made "with the community," Walling has said he had no involvement in the decision and privately questioned it.

Croft has said about half of Flint's homes have lead service lines and quickly identifying where they are located could be critical for water filter distribution or any program that involves the removal and replacement of lead pipes.

Walling asked Snyder in a Sept. 14 letter for $10 million for what he called a "healthy homes initiative" aimed at replacing lead service lines in "the most vulnerable households."

Croft said he's been in contact with the University of Michigan-Flint and Kettering University, asking if students might be available to help city employees with the task of computerizing data about lead pipes from the index cards.

City Councilwoman Vicki VanBuren said she was surprised that the city's information on lead service lines isn't an a format that's already easily accessible.

"I had asked if we could get a map," VanBuren said. "When I requested that information ... (Croft) responded, 'OK, no problem.' So I was surprised when there was nothing to see.

"That seems like basic information they should already be working with," she said.

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http://www.mlive.com/news/flint/index.ssf/2015/10/more_than_5000_in_flint_to_get.html

More than 5,000 in Flint to get lead water filters following donation

By Dominic Adams | dadams5@mlive.com The Flint Journal Follow on Twitter on October 01, 2015 at 11:35 AM, updated October 01, 2015 at 12:04 PM

FLINT, MI – More than 5,000 Flint residents will be able to get water filters following an influx of $105,000 from private and public sources.

The filters come as the city and county have issued lead advisories related to the city's drinking water.

A recent study by a Hurley Medical Center doctor says infants and children are being found with elevated levels of lead in their blood since the city switched to using the Flint River as its water source.

The General Motors Foundation donated $50,000, the United Way of Genesee County pitched in $25,000 and another $10,000 came from the Making Our Children Smile Foundation.

Another $20,000 from community development block grant funds was secured by the city, according to the United Way.

The United Way will work with the Genesee County Health Department to purchase the filters, which cost about $20 each. The health department is working with community partners to prioritize need and distribute filters to the highest risk populations first to ensure the safety of the community. Water filters are NSF certified to include removal of lead.

"Upon first learning of the water quality issue in the city of Flint the United Way partnered with Hurley Children's Hospital, Mott Children's Health Center, the Food Bank of Eastern Michigan and the Flint Diaper Bank to provide bottled water to families in the community," Jamie Gaskin, CEO of the United Way of Genesee County said in a statement. "Now is the time to provide a more economical and long-term solution to help residents until the water issue is resolved."

Information on distribution of the filters will be communicated through the Health Department website, as well as a hotline that is in the process of being established, the statement said.

The Flint School District also has stopped using the city as a water source and is seeking bottled water donations.

"This is a great example of community members, leaders and partners banding together to ensure people have access to clean drinking water," Flint Mayor Dayne Walling said in a statment.

The Community Foundation of Greater Flint also is working to get filters for the initiative.

"Giving back to our communities is more than investing in our facilities; it involves helping to improve the quality of life for those who live in our plant cities," Cathy Clegg, GM North American Manufacturing and Labor Relations vice president said in a statement. "The United Way is a long-time GM partner and is well positioned in the Flint area to help the residents most in need."

Cindy Estrada, UAW vice president and director of the union's GM Department, worked with Clegg to secure the $50,000 grant from the GM Foundation. The UAW was also involved in initial efforts to get bottled water into the community, the statement said.

"The UAW has a proud history of helping workers and their families, but we also take great pride in assisting people in our communities," Estrada said. "Together with the United Way of Genesee County, GM and the GM Foundation, we hope residents are able to access clean water for their families."

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http://www.wnem.com/story/30162800/gm-donates-50k-for-water-filters-for-flint-residents

GM donates $50K for water filters for Flint residents

Posted: Oct 01, 2015 10:22 AM CDT Updated: Oct 01, 2015 10:22 AM CDT

By Brianna Owczarzak, Managing Web Editor

FLINT, MI (WNEM) -General Motors is stepping up to help Flint residents with the water crisis.

The GM Foundation is donating $50,000 to purchase water filters for Flint residents. The donation went to the United Way of Genesee County.

The filters will remove contaminants from the water, allowing residents to use the water for drinking and cooking.

“Giving back to our communities is more than investing in our facilities; it involves helping to improve the quality of life for those who live in our plant cities,” said Cathy Clegg, GM North American Manufacturing and Labor Relations vice president. “The United Way is a long-time GM partner and is well positioned in the Flint area to help the residents most in need.”

Overall, the United Way of Genesee County and the city of Flint raised more than $100,000 for water filters.

Along with the $50,000 from GM, the United Way gave $25,000 from its general fund, the Making our Children Smile Foundation donated $10,000, and $20,000 came from Community Development Block Grant funds.

The water filters cost about $20 each, according to the United Way.

The highest risk populations will get the water filters first.

“This is a great example of community members, leaders and partners banding together to ensure people have access to clean drinking water,” Flint Mayor Dayne Walling said.

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http://www.detroitnews.com/story/news/local/michigan/2015/09/30/flint-water-woes-seep-city-state-politics/73129478/

Flint resident: Water looks like urine, smells like sewer

Jim Lynch and Chad Livengood, The Detroit News 8:50 a.m. EDT October 1, 2015

Flint — The questionable quality of the city's drinking water made headlines again this week, but not much of it has been news to Ashley Holt.

For almost a year, the water from her faucet has looked "like urine," smelled "like the sewer" and, if you're brave enough to sip it, hasn't tasted "normal," the 25-year-old Flint resident said. It's why she's limited for months how often her children — ages 5, 6 and 12 — come in contact with it.

But following last week's revelation that Flint children are showing higher amounts of lead in their blood, the situation has escalated for her cash-strapped family.

In a city where 41.5 percent of the population is below the poverty line, a lack of money is the reason Holt was walking instead of driving downtown this week to pick up her children from school. She scrambles to find enough to buy them bottled water.

"The only option I've got is just to not drink the water and stick with pop and juice," Holt said. "(I) go to the store and get a gallon of water a day, if I can afford it at the time."

The hardships experienced by residents here are having public health and political ripple effects that are being felt from city hall to the governor's office. Gov. Rick Snyder said Tuesday he could unveil "more action steps" as early as the end of this week.

Researchers from Virginia Tech and Hurley Children's Hospital in Flint said last week

that lead levels in local children have risen since the city, under Snyder's appointed emergency manager, started getting its water from the Flint River instead of the Detroit Water & Sewerage System. Studies showed that in some areas lead levels doubled and, in two local zip codes, the levels tripled.

Lead poisoning can cause learning disabilities, according to the Centers for Disease Control and Prevent. At very high levels, it also can lead to seizures, coma and even death.

Water quality has become the central issue in the mayoral election that is a month away. It also has put Snyder's administration — particularly the Michigan Department of Environmental Quality — under the microscope. There are questions about how the DEQ tests water quality, as well as the governor's back-channel efforts this summer to send 1,500 water filters to Flint families when state officials insisted the water was fine.

Sommer Adams said there are doctor's visits in the future for her three kids because she fears they may have been exposed to lead.

“Even though I don't see it in my water or haven't experienced no type of (problems) with drinking it, you never know,” said Adams, 23.

Governor questioned

The idea of switching water systems seemed to make sense. Municipal officials didn't like the rates residents were forced to pay and wanted to be part of a new supply system being built to draw from Lake Huron, just like Detroit's system.

Tapping the river for a year or two was supposed to provide water until the Karegondi Water Authority was up and running. Almost immediately after the switch in April 2014, there were complaints about the treated river water's appearance, smell and taste.

A year later, the state-appointed successor emergency manager, Jerry Ambrose, rejected the city council's attempts to tie back to the Detroit system as "incomprehensible."

"(Lake Huron) water from Detroit is no safer than water from Flint," Ambrose said at the time.

The Snyder administration's confirmation Tuesday that it helped an anonymous donor send 1,500 water filters to Flint families seemed to undercut the decision. At an unrelated Wednesday press conference, the Capitol press corps grilled the governor about Flint's woes.

"It appears that lead levels could be higher or have increased... ," Snyder said. "We're looking at making sure they're within safe limits, according to the federal government."

Mayor election a focus

The water problems have ratcheted up interest in the Nov. 3 mayoral election, which figured to draw more scrutiny anyway since Flint emerged from state control in late April.

Business owner and candidate Karen Weaver has attacked incumbent Mayor Dayne Walling for failing to take back total control of the government from the city administrator left in place by the state's emergency manager. After the reporting of the lead results, Weaver has claimed that Walling knew about the problem as far back as June, thanks to a U.S. Environmental Protection Agency report that flagged the situation.

"You didn't speak up," she said Wednesday. "Yes, the emergency manager had power to make the final decision, but nobody takes your voice."

Walling countered that the first time he heard of the elevated lead levels was Sept. 21, a few days before the results were made public.

“I’m asking everyone to carefully consider my record because it has been a complicated four years with four different emergency managers that each involved myself and city council in different ways at different times,” Walling said.

This month, Walling wrote to Snyder requesting the state help with $30 million in new infrastructure improvement aid.

Public Information Officer Jason Lorenz said the city hasn’t received a response.

Old pipes complicate testing

Shervon Goss, 32, paints a disturbing picture of what she experiences in her townhouse complex in Flint’s south end. Her tap water has an odor, Goss said, and showers result in dry skin and rashes.

“It’s a complex with a whole lot of people and a whole lot of babies there,” she said. “These are people who probably can’t afford to go and buy bottled water. So they get forced into drinking the (tap) water that’s unhealthy.”

Like many residents, Goss wonders how this happened.

State officials admitted it is difficult to do consistent lead testing on water being pumped through old lead plumbing and service connection lines. Water tested at intake or upon release from the treatment plant can be exposed to lead when it reaches old lead connections on private property, the officials said.

“The testing protocol that we have tends to offer a systemwide assessment of how water interacts with that line and home plumbing,” said Brad Wurfel, DEQ’s spokesman. “There’s a lot we unfortunately don’t know about those (home lead) levels.”

Some local groups have stepped up to provide free water to residents. The House of Prayer Missionary Baptist Church gave away bottled water Wednesday, drawing a line of cars.

On Thursday, the Food Bank of Eastern Michigan will ship packages of diapers combined with gallon jugs of water to area social service organizations.

Local activists are prepared to hold protests and urge residents to stop paying their water bills if state and city officials don’t make the switch back to water from Detroit, said Rev. Alfred Harris, pastor of Saints Church in Flint.

“We’re praying that the governor will say we’ve got to go back to Detroit water,” Harris said.

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To: Meiburg, Stan[Meiburg.Stan@epa.gov]; Fritz, Matthew[Fritz.Matthew@epa.gov]; Burke, Thomas[Burke.Thomas@epa.gov]; Reynolds, Thomas[Reynolds.Thomas@epa.gov]; Vaught, Laura[Vaught.Laura@epa.gov]; Harrison, Melissa[Harrison.Melissa@epa.gov]; Kopocis, Ken[Kopocis.Ken@epa.gov]; Garbow, Avi[Garbow.Avi@epa.gov]; Giles-AA, Cynthia[Giles-AA.Cynthia@epa.gov]; Grevatt, Peter[Grevatt.Peter@epa.gov]
From: Hedman, Susan
Sent: Fri 10/2/2015 12:28:56 AM
Subject: Proposed EPA comment on Michigan/Flint press conference announcing steps to address lead levels in Flint drinking water

As promised, we have drafted a brief statement to be released after the Michigan/Flint press conference that will be held tomorrow in Flint at 1:30 eastern. We have also drafted answers to two follow up questions that we expect to get tomorrow and are asking OGC to assist with an answer to a third question that we expect to receive. Please let us know if you have any suggestions.

US EPA Regional Administrator comment on the State of Michigan and City of Flint press conference on October 2, 2015: Actions that the State of Michigan and the City of Flint announced today will protect public health. The immediate steps being taken to implement corrosion control will reduce lead in drinking water, as required by the Safe Drinking Water Act. US EPA will continue to provide technical assistance to the State of Michigan and the City of Flint to support their joint effort.

1. **What about the interim report that has been attributed to a "rogue" EPA employee?** The interim report was prepared by a Region 5 employee as part of his regular duties at EPA. It was intended to be an internal document to brief EPA managers on lead levels in drinking water at three residential properties in Flint. The interim report notes that a "final report will be submitted once additional analyses have been completed on pipe and water samples." **Has a final report been prepared?** Yes. **Can I get a copy of the report?** The report contains Personally Identifiable Information and other confidential health data. If a FOIA request is submitted for the document, EPA attorneys will determine the extent to which a redacted document can be released. **Why was the interim report released without redaction?** EPA did not release the interim report to the public.

2. **What about the SDWA petition that was submitted to EPA on 10/1/2015?** EPA will review the petition.

3. **Are all large drinking water systems required to implement corrosion control?** OGC to draft answer consistent with the discussion earlier today.

Susan Hedman

Region 5 Administrator/Great Lakes National Program Manager

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To: Meiburg, Stan[Meiburg.Stan@epa.gov]; Fritz, Matthew[Fritz.Matthew@epa.gov]; Burke, Thomas[Burke.Thomas@epa.gov]; Reynolds, Thomas[Reynolds.Thomas@epa.gov]; Vaught, Laura[Vaught.Laura@epa.gov]; Harrison, Melissa[Harrison.Melissa@epa.gov]; Kopocis, Ken[Kopocis.Ken@epa.gov]; Avi Garbow[Garbow.Avi@epa.gov]; Cynthia Giles-AA[Giles-AA.Cynthia@epa.gov]; Grevatt, Peter[Grevatt.Peter@epa.gov]
From: Hedman, Susan
Sent: Fri 10/2/2015 12:37:24 AM
Subject: Latest Flint drinking water clips

http://michiganradio.org/post/whos-blame-flints-water-crisis-virginia-tech-researcher-points-finger-mdeq#stream/0

Who's to blame for Flint's water crisis? Virginia Tech researcher points the finger at MDEQ

Yesterday, Gov. Rick Snyder admitted that the decision to switch the city of Flint's water supply from Detroit's system over to the Flint River was not well planned.

“In terms of a mistake, what I would say is, is there are probably things that were not as fully understood as when that switch was made,” Snyder said.

At the direction of the state-appointed emergency manager, the city made the switch in April 2014, and problems with the drinking water started soon after.

People complained of brown water. There were boil-water advisories after the water was found to have E. coli contamination, and the drinking water also had unsafe levels of a chlorine byproduct (total trihalomethanes).

Fast forward almost a year and a half, and now we learn some residents in the city are being exposed to unsafe levels of lead in their drinking water.

How could one of Michigan’s major cities be facing this problem?

Marc Edwards, a civil engineering professor from Virginia Tech University and a nationally renowned expert on water treatment, has put the blame squarely on the agency in charge of overseeing the safety of Flint’s drinking water, the Michigan Department of Environmental Quality.

Marc Edwards of Virginia Tech explains why he thinks the Michigan Department of Environmental Quality is to blame for Flint's water crisis. Edwards published a blog post yesterday in which he writes:

Given MDEQ's insistence that there is absolutely nothing wrong with Flint water, we have created a timeline that illustrates how MDEQ's mistakes and deception created the Flint water crisis in the first place.

In his timeline, Edwards says the state failed to require that the city have a corrosion-control program in place when the city switched over to Flint River water.

Edwards says current estimates are that Flint has about 15,000 drinking water service lines made of lead.

"What we discovered to our shock was that they switched to a new water source that was obviously very corrosive, meaning it would eat up the lead pipe and iron pipe and essentially put the metals into the water, without controlling the corrosion," Edwards says. "And this is a horrible idea in a city full of lead plumbing and lead pipe like Flint."

Edwards says current estimates are that Flint has about 15,000 drinking water service lines made of lead.

How dangerous metals can get into drinking water

When water flows through copper and lead pipes, it can take up some of the metal and make the water unsafe. To control for this problem, the Environmental Protection Agency has what's called a "lead and copper rule."

The purpose of the rule is listed in this "quick reference guide:"

Protect public health by minimizing lead (Pb) and copper (Cu) levels in drinking water, primarily by reducing water corrosivity. Pb and Cu enter drinking water mainly from corrosion of Pb and Cu containing plumbing materials.

To keep these metals from leaching into drinking water, municipal treatment plants can change the water chemistry to lower the water's ability to corrode these pipes.

It's called "corrosion control," and Edwards says the Michigan Department of Environmental Quality covered up the fact that Flint had no corrosion control program in place.

"Before you switch to a new water source, six months to a year ahead of time, you are supposed to do laboratory experiments to determine the corrosivity of the water," says Edwards. "And the chemistry – the pH, the alkalinity, and the phosphate that you need to make sure that the lead stays on the pipes and out of the water."

Edwards contends that the new water system had to have a "corrosion control" plan in place so that "you're not doing an uncontrolled human experiment on a city's population."

According to emails obtained by the ACLU of Michigan, a state MDEQ official, Stephen Busch, responded to a request from EPA Region 5, the federal agency that oversees MDEQ, that the new water system in Flint did have a corrosion control program in place.

That exchange occurred in February of this year.

In April, according to the emails, the EPA Region 5 official later found out that was not true. Flint, it turns out, did not have a corrosion-control program in place.

From the emails:

Pat Cook [of MDEQ] has confirmed that following the disconnection from Detroit, Flint has not been operating any corrosion control treatment, which is very concerning given the likelihood of LSLs [lead service lines] in the city.

The state has maintained that it is not required under the EPA's lead and copper rule to have a corrosion-control plan in place until two rounds of testing are completed to determine what that plan looks like.

More from Michigan Radio's Lindsey Smith:

At face value, the EPA rules are clear, all water systems that serve more than 50,000 people must have some kind of corrosion control.

But when you switch water sources, there is apparently some room for interpretation.

In approving updates to this federal regulation in 2000, the EPA noted that "water systems need to make treatment changes, on occasion, to react to changing circumstances."

In these cases, the rule does not "prevent a state from approving treatment changes," but it's not entirely clear if the state can approve having zero corrosion-control treatment.

As Edwards understands it, the EPA should have acted once the agency found out the state had no corrosion-control plan in place in Flint.

"If there was ever a case where [the] EPA should exert emergency powers and take primacy away from an agency, this is it."

“If there was ever a case where [the] EPA should exert emergency powers and take primacy away from an agency, this is it,” he said.

Edwards says the city was also not conducting tests for lead and copper properly.

The point of the lead and copper rule is to make sure cities are sampling homes that are high risk – that is, homes serviced by lead pipe.

An ACLU of Michigan investigation found that the city did not know whether it was testing homes serviced by lead pipes.

In this video, Michael Glasgow, the utilities manager for Flint, indicated the city doesn't know where the lead pipes are.

http://www.detroitnews.com/story/news/local/michigan/2015/10/01/flint-water-epa/73160176/

Coalition asks EPA to intervene in Flint water issue

Jim Lynch, The Detroit News 3:38 p.m. EDT October 1, 2015

The federal government needs to step in to ensure residents in Flint have safe drinking water following health complaints and findings of elevated lead levels in children's blood, a group of environmental and civil rights groups said Thursday.

The coalition of the American Civil Liberties Union of Michigan, the National Resources Defense Council and the Flint-based group Water You Fighting For said they are petitioning the U.S. Environmental Protection Agency to intervene in the city's year-and-a-half-long water crisis.

State officials will be in Flint Friday to address concerns over the city's water situation.

That situation escalated in the past week after researchers from Virginia Tech and Hurley Children's Hospital in Flint said lead levels in local children have risen. Studies showed that in some areas lead levels doubled and, in two local ZIP codes, tripled. Those finding came on the heels of 19 months of complaints about the odor, appearance and taste of the tap water that is drawn from the Flint River.

"Neither the City of Flint nor the State of Michigan is doing enough to fix the problem of lead in our drinking water," said LeeAnne Walters, a member of the Flint-based group Water You Fighting For. "As evidenced by the ongoing poisoning of the children of Flint, it's time for the EPA to take immediate action to provide us with a safe water source. The city and state need to test for lead and copper as intended by the federal lead and copper rule."

Walters' organization was joined by the American Civil Liberties Union and the Natural Resources Defense Council in asking the federal government to step in. The groups want the EPA to compel the city to return to getting its water from the Detroit Water and Sewerage Department.

Flint is in the midst of a transition to a new water source to get out from under the rates charged by the Detroit water system. It's a move that was instigated while the city was under the leadership of an emergency manager appointed by Gov. Rick Snyder.

The city is committed to getting its water from Lake Huron through the Karegondi Water Authority when the system comes online, possibly as soon as next year. In the interim, the Flint River has been providing drinking water to city residents since last spring.

But now there is evidence that the water is taking on lead from the plumbing connections that tie much of the city's old housing stock to city waterlines.

State officials said Thursday they will outline their response to the lead problems in Flint on Friday.

"This issue is one that we've been actively engaged on and our administration will be outlining a collaborative, comprehensive action plan tomorrow afternoon," said Snyder spokeswoman Sara Wurfel. "We believe protecting public health is paramount and safe, clean, accessible drinking water is essential. That's what we are focused on helping ensure and working together across local, state and federal levels to bring all resources and ideas to bear.

"(I) would add that the governor and state agencies have been closely working with Flint leaders on their infrastructure challenges for a while, including providing $4.2 million in grants and restructured loan financing to provide resources needed to locate and fix infrastructure problems and add the carbon filtration system, additional testing and helping identify and provide filters."

On Thursday, the groups asking for federal intervention charged city and state officials with moving too slowly to address the problems.

"Flint city officials, state-appointed emergency managers and the Michigan Department of Environmental Quality have all failed monumentally in their duty to provide the people of Flint with clean, safe drinking water," said Kary Moss, director of the ACLU of Michigan. "Now that the truth is revealed, further action is imperative.

"The devastating revelations from independent researchers, as well as our own nearly year-long investigation, demand an immediate, effective and comprehensive response. The EPA, along with and city officials, must exercise their full authority to guarantee that the people of Flint are protected from the hazardous water now flowing into their homes. The first step should be to overturn the emergency manager order and remove the Flint River as the city's source of water."

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From: Kelley, Jeff
Sent: Thursday, October 01, 2015 2:25 PM
To: Susan Hedman; Robert Kaplan (kaplan.robert@epa.gov); Hyde, Tinka
Cc: Ronna Beckmann; Cassell, Peter; Rowan, Anne (rowan.anne@epa.gov); Melissa Harrison (Harrison.Melissa@epa.gov); Abrams, Dan; Poy, Thomas
Subject: Flint water clips for the afternoon of October 1

- □□□□□□□ Public health emergency declared due to lead in Flint water (AP)
- □□□□□□□ Legislators take action to fix Flint water supply (Detroit Free Press)
- □□□□□□□ Flint data on lead water lines stored on 45,000 index cards (Flint Journal)
- □□□□□□□ More than 5,000 in Flint to get lead water filters following donation (Flint Journal)
- □□□□□□□ GM donates $50K for water filters for Flint residents (WNEM)
- □□□□□□□ Flint resident: Water looks like urine, smells like sewer (Detroit News)

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http://www.ksl.com/index.php?nid=157&sid=36769991&title=public-health-emergency-declared-due-to-lead-in-flint-water

Public health emergency declared due to lead in Flint water

By The Associated Press | Posted Oct 1st, 2015 @ 1:01pm

FLINT, Mich. (AP) — Genesee County commissioners have declared a public health emergency for residents using water from the Flint River through the city's water system.

Tests have shown children with elevated levels of lead, months after Flint began drawing and treating water from the river. The water is aggravating lead in old pipes in thousands of homes.

Commissioners issued an advisory Thursday recommending that people not drink the water unless tests show lead levels are down or the water has gone through an approved filter.

The General Motors Foundation, the local United Way and others have given at least $105,000 to buy filters.

Gov. Rick Snyder has pledged to announce some type of action by the end of the week. He says the consequences of using the river weren't "fully understood."

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http://www.freep.com/story/news/2015/10/01/legislators-take-action-fix-flint-water-supply/73152540/

Legislators take action to fix Flint water supply

By Kathleen Gray, Detroit Free Press Lansing Bureau 2:31 p.m. EDT October 1, 2015

LANSING The Michigan Legislature is beginning to take notice of the ongoing controversy surrounding Flint’s water system, which has been plagued since the city disconnected from the Detroit water system and began pulling its water supply from the Flint River.

The state Senate approved a supplemental appropriations bill that included a $100 placeholder while the state looks for a solution to the water issue.

“We want to make sure we have an accurate number. We didn’t want to put too much in or not enough,” said state Sen. Jim Ananich, D-Flint. “We want to get an accurate understanding of what it’s going to cost to get us the help that we need.”

The appropriation comes on the heels of Gov. Rick Snyder telling reporters on Wednesday that he’ll have some more answers on the state’s role in fixing Flint’s water problems by the end of the week.

An anonymous benefactor and the state have begun distributing water filters to Flint residents in recent weeks after a Hurley Medical Center researcher found lead levels increasing in Flint.

“We’ve been actively working that issue for a significant period of time and providing additional resources recently,” Snyder said. “I would expect us to have more to talk about that by the end of of the week and how we’re partnering with Flint and the federal government on this.”

In 2014, city officials ended the city's contract with the Detroit Water and Sewerage Department, saying that water costs were too high. They opted instead to pull from the Karegnondi Water Authority, which is building a system to supply Genesee County with water pulled from Lake Huron. In the long run, this will mean lower water costs, officials have said, adding that water from the Detroit system will cost $1.5 million more a month than the city is paying now.

But until the new system comes online in 2016, Flint is temporarily pulling water from the Flint River. Since it made the switch, residents have complained that the water smells, is discolored and makes them sick.

And the Hurley researcher recently found that the number of Flint children with elevated blood-lead levels — 5 micrograms per deciliter or more — jumped from 2.1% in the 20 months prior to Sept. 15, 2013, to 4.0% between Jan. 1 and Sept. 15 this year. In certain ZIP codes, the change was even more troubling, she said — jumping from 2.5% of the children tested to 6.3%.

Ananich said filters need to be made available to affected residents, especially vulnerable citizens like children and senior citizens, and the corrosion in the water system pipes needs to be addressed.

“And I think we need to move to a new water source, potentially going back to Detroit,” he said. “Filters can do a lot of good, corrosion control can do some good. But a new water source has to happen and it has to happen soon.”

In addition to the money for Flint water issue, the appropriations bill approved by the Senate also included a $7.7-million settlement of a lawsuit filed by a Flint woman whose car was hit by a Michigan State Police trooper, who was pursuing a driver who refused to stop for a seat belt violation.

The woman and her daughter were injured in the July 3, 2014, crash and another passenger Jacqueline Nichols, 64, of Flint, was killed. Trooper Timothy Fagin received undisclosed discipline after the crash and remains a state trooper.

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http://www.mlive.com/news/flint/index.ssf/2015/10/flint_official_says_data_on_lo.html

Flint data on lead water lines stored on 45,000 index cards

By Ron Fonger | rfonger1@mlive.com The Flint Journal on October 01, 2015 at 12:18 PM

FLINT, MI -- The city knows which homes in Flint have pipes most likely to leach lead into tap water, but can't easily access the information because it's kept on about 45,000 index cards.

Department of Public Works Director Howard Croft said his office is trying to convert data from the cards, including whether homes have lead service lines, to an electronic spreadsheet program so that homes with the highest risk of lead in water can be easily identified.

The effort could be critical to the distribution of 5,250 lead-clearing water filters being funded by the United Way, General Motors and others.

A United Way news release today, Oct. 1, says filters will be distributed "to the highest-risk populations first to ensure the safety of the community."

Testing by Virginia Tech university and a study by the director of Hurley Medical Center's pediatric residency program have warned of a serious problem with lead in Flint's drinking water.

Croft said Wednesday, Sept. 30, that he "can't put a number on" how long it will take the city to convert its paper records into electronic data or maps that can be used to pinpoint lead hotspots. "It's on our to-do list."

Work on computerizing information on the index cards has started, but about 75 percent of the work remains, the DPW director told the City Council Wednesday.

Although the city's water is lead-free when it leaves Flint's water treatment plant, lead service lines that feed about half of homes and businesses in the city have the potential to leach lead as the water flows through the pipes.

Experiments by Virginia Tech university show Flint's treated water -- drawn from the Flint River -- is about 19 times more corrosive than Lake Huron water that had been purchased from the city of Detroit for decades, making the problem much worse than in the past.

Flint changed its drinking water source from Lake Huron to Flint River in April 2014, a decision that came as the city was being run by a state-appointed emergency manager.

Although Flint Mayor Dayne Walling has said the city will complete plans for making the river water less corrosive by the end of the year, there is no treatment for corrosion -- such as the addition of phosphates -- currently.

Gov. Rick Snyder said this week that the state is preparing to announce its plans for assisting the city with the lead in water problem.

After months of assurances by the DEQ that Flint water met all requirements of the Safe Drinking Water Act, Snyder said Wednesday, Sept. 30, that "it appears that lead levels could be higher or could be increased.".

While the governor said the decision to run Flint River water through the city's aging water distribution system, including lead service lines to homes, was made "with the community," Walling has said he had no involvement in the decision and privately questioned it.

Croft has said about half of Flint's homes have lead service lines and quickly identifying where they are located could be critical for water filter distribution or any program that involves the removal and replacement of lead pipes.

Walling asked Snyder in a Sept. 14 letter for $10 million for what he called a "healthy homes initiative" aimed at replacing lead service lines in "the most vulnerable households."

Croft said he's been in contact with the University of Michigan-Flint and Kettering University, asking if students might be available to help city employees with the task of computerizing data about lead pipes from the index cards.

City Councilwoman Vicki VanBuren said she was surprised that the city's information on lead service lines isn't an a format that's already easily accessible.

"I had asked if we could get a map," VanBuren said. "When I requested that information ... (Croft) responded, 'OK, no problem.' So I was surprised when there was nothing to see.

"That seems like basic information they should already be working with," she said.

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http://www.mlive.com/news/flint/index.ssf/2015/10/more_than_5000_in_flint_to_get.html

More than 5,000 in Flint to get lead water filters following donation

By Dominic Adams | dadams5@mlive.com The Flint Journal Follow on Twitter on October 01, 2015 at 11:35 AM, updated October 01, 2015 at 12:04 PM

FLINT, MI – More than 5,000 Flint residents will be able to get water filters following an influx of $105,000 from private and public sources.

The filters come as the city and county have issued lead advisories related to the city's drinking water.

A recent study by a Hurley Medical Center doctor says infants and children are being found with elevated levels of lead in their blood since the city switched to using the Flint River as its water source.

The General Motors Foundation donated $50,000, the United Way of Genesee County pitched in $25,000 and another $10,000 came from the Making Our Children Smile Foundation.

Another $20,000 from community development block grant funds was secured by the city, according to the United Way.

The United Way will work with the Genesee County Health Department to purchase the filters, which cost about $20 each. The health department is working with community partners to prioritize need and distribute filters to the highest risk populations first to ensure the safety of the community. Water filters are NSF certified to include removal of lead.

"Upon first learning of the water quality issue in the city of Flint the United Way partnered with Hurley Children's Hospital, Mott Children's Health Center, the Food Bank of Eastern Michigan and the Flint Diaper Bank to provide bottled water to families in the community," Jamie Gaskin, CEO of the United Way of Genesee County said in a statement. "Now is the time to provide a more economical and long-term solution to help residents until the water issue is resolved."

Information on distribution of the filters will be communicated through the Health Department website, as well as a hotline that is in the process of being established, the statement said.

The Flint School District also has stopped using the city as a water source and is seeking bottled water donations.

"This is a great example of community members, leaders and partners banding together to ensure people have access to clean drinking water," Flint Mayor Dayne Walling said in a statment.

The Community Foundation of Greater Flint also is working to get filters for the initiative.

"Giving back to our communities is more than investing in our facilities; it involves helping to improve the quality of life for those who live in our plant cities," Cathy Clegg, GM North American Manufacturing and Labor Relations vice president said in a statement. "The United Way is a long-time GM partner and is well positioned in the Flint area to help the residents most in need."

Cindy Estrada, UAW vice president and director of the union's GM Department, worked with Clegg to secure the $50,000 grant from the GM Foundation. The UAW was also involved in initial efforts to get bottled water into the community, the statement said.

"The UAW has a proud history of helping workers and their families, but we also take great pride in assisting people in our communities," Estrada said. "Together with the United Way of Genesee County, GM and the GM Foundation, we hope residents are able to access clean water for their families."

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http://www.wnem.com/story/30162800/gm-donates-50k-for-water-filters-for-flint-residents

GM donates $50K for water filters for Flint residents

Posted: Oct 01, 2015 10:22 AM CDT Updated: Oct 01, 2015 10:22 AM CDT

By Brianna Owczarzak, Managing Web Editor

FLINT, MI (WNEM) -General Motors is stepping up to help Flint residents with the water crisis.

The GM Foundation is donating $50,000 to purchase water filters for Flint residents. The donation went to the United Way of Genesee County.

The filters will remove contaminants from the water, allowing residents to use the water for drinking and cooking.

“Giving back to our communities is more than investing in our facilities; it involves helping to improve the quality of life for those who live in our plant cities,” said Cathy Clegg, GM North American Manufacturing and Labor Relations vice president. “The United Way is a long-time GM partner and is well positioned in the Flint area to help the residents most in need.”

Overall, the United Way of Genesee County and the city of Flint raised more than $100,000 for water filters.

Along with the $50,000 from GM, the United Way gave $25,000 from its general fund, the Making our Children Smile Foundation donated $10,000, and $20,000 came from Community Development Block Grant funds.

The water filters cost about $20 each, according to the United Way.

The highest risk populations will get the water filters first.

"This is a great example of community members, leaders and partners banding together to ensure people have access to clean drinking water," Flint Mayor Dayne Walling said.

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http://www.detroitnews.com/story/news/local/michigan/2015/09/30/flint-water-woes-seep-city-state-politics/73129478/

Flint resident: Water looks like urine, smells like sewer

Jim Lynch and Chad Livengood, The Detroit News 8:50 a.m. EDT October 1, 2015

Flint — The questionable quality of the city's drinking water made headlines again this week, but not much of it has been news to Ashley Holt.

For almost a year, the water from her faucet has looked "like urine," smelled "like the sewer" and, if you're brave enough to sip it, hasn't tasted "normal," the 25-year-old Flint resident said. It's why she's limited for months how often her children — ages 5, 6 and 12 — come in contact with it.

But following last week's revelation that Flint children are showing higher amounts of lead in their blood, the situation has escalated for her cash-strapped family.

In a city where 41.5 percent of the population is below the poverty line, a lack of money is the reason Holt was walking instead of driving downtown this week to pick up her children from school. She scrambles to find enough to buy them bottled water.

“The only option I’ve got is just to not drink the water and stick with pop and juice,” Holt said. “(I) go to the store and get a gallon of water a day, if I can afford it at the time.”

The hardships experienced by residents here are having public health and political ripple effects that are being felt from city hall to the governor’s office. Gov. Rick Snyder said Tuesday he could unveil “more action steps” as early as the end of this week.

Researchers from Virginia Tech and Hurley Children’s Hospital in Flint said last week that lead levels in local children have risen since the city, under Snyder’s appointed emergency manager, started getting its water from the Flint River instead of the Detroit Water & Sewerage System. Studies showed that in some areas lead levels doubled and, in two local zip codes, the levels tripled.

Lead poisoning can cause learning disabilities, according to the Centers for Disease Control and Prevent. At very high levels, it also can lead to seizures, coma and even death.

Water quality has become the central issue in the mayoral election that is a month away. It also has put Snyder’s administration — particularly the Michigan Department of Environmental Quality — under the microscope. There are questions about how the DEQ tests water quality, as well as the governor’s back-channel efforts this summer to send 1,500 water filters to Flint families when state officials insisted the water was fine.

Sommer Adams said there are doctor’s visits in the future for her three kids because she fears they may have been exposed to lead.

“Even though I don’t see it in my water or haven’t experienced no type of (problems) with drinking it, you never know,” said Adams, 23.

Governor questioned

The idea of switching water systems seemed to make sense. Municipal officials didn't like the rates residents were forced to pay and wanted to be part of a new supply system being built to draw from Lake Huron, just like Detroit's system.

Tapping the river for a year or two was supposed to provide water until the Karegondi Water Authority was up and running. Almost immediately after the switch in April 2014, there were complaints about the treated river water's appearance, smell and taste.

A year later, the state-appointed successor emergency manager, Jerry Ambrose, rejected the city council's attempts to tie back to the Detroit system as "incomprehensible."

"(Lake Huron) water from Detroit is no safer than water from Flint," Ambrose said at the time.

The Snyder administration's confirmation Tuesday that it helped an anonymous donor send 1,500 water filters to Flint families seemed to undercut the decision. At an unrelated Wednesday press conference, the Capitol press corps grilled the governor about Flint's woes.

"It appears that lead levels could be higher or have increased... ," Snyder said. "We're looking at making sure they're within safe limits, according to the federal government."

Mayor election a focus

The water problems have ratcheted up interest in the Nov. 3 mayoral election, which figured to draw more scrutiny anyway since Flint emerged from state control in late April.

Business owner and candidate Karen Weaver has attacked incumbent Mayor Dayne Walling for failing to take back total control of the government from the city administrator left in place by the state's emergency manager. After the reporting of the lead results, Weaver has claimed that Walling knew about the problem as far back as June, thanks to a U.S. Environmental Protection Agency report that flagged the situation.

“You didn't speak up,” she said Wednesday. “Yes, the emergency manager had power to make the final decision, but nobody takes your voice.”

Walling countered that the first time he heard of the elevated lead levels was Sept. 21, a few days before the results were made public.

“I'm asking everyone to carefully consider my record because it has been a complicated four years with four different emergency managers that each involved myself and city council in different ways at different times,” Walling said.

This month, Walling wrote to Snyder requesting the state help with $30 million in new infrastructure improvement aid.

Public Information Officer Jason Lorenz said the city hasn't received a response.

Old pipes complicate testing

Shervon Goss, 32, paints a disturbing picture of what she experiences in her townhouse complex in Flint's south end. Her tap water has an odor, Goss said, and showers result in dry skin and rashes.

“It’s a complex with a whole lot of people and a whole lot of babies there,” she said. “These are people who probably can’t afford to go and buy bottled water. So they get forced into drinking the (tap) water that’s unhealthy.”

Like many residents, Goss wonders how this happened.

State officials admitted it is difficult to do consistent lead testing on water being pumped through old lead plumbing and service connection lines. Water tested at intake or upon release from the treatment plant can be exposed to lead when it reaches old lead connections on private property, the officials said.

“The testing protocol that we have tends to offer a systemwide assessment of how water interacts with that line and home plumbing,” said Brad Wurfel, DEQ’s spokesman. “There’s a lot we unfortunately don’t know about those (home lead) levels.”

Some local groups have stepped up to provide free water to residents. The House of Prayer Missionary Baptist Church gave away bottled water Wednesday, drawing a line of cars.

On Thursday, the Food Bank of Eastern Michigan will ship packages of diapers combined with gallon jugs of water to area social service organizations.

Local activists are prepared to hold protests and urge residents to stop paying their water bills if state and city officials don’t make the switch back to water from Detroit, said Rev. Alfred Harris, pastor of Saints Church in Flint.

“We’re praying that the governor will say we’ve got to go back to Detroit water,” Harris said.

To: Hyde, Tinka[hyde.tinka@epa.gov]; Kelley, Jeff[kelley.jeff@epa.gov]
From: Hedman, Susan
Sent: Fri 10/2/2015 12:37:55 AM
Subject: FW: Proposed EPA comment on Michigan/Flint press conference announcing steps to address lead levels in Flint drinking water

From: Hedman, Susan
Sent: Thursday, October 01, 2015 7:29 PM
To: Meiburg, Stan; Fritz, Matthew; Burke, Thomas; Reynolds, Thomas; Vaught, Laura; Harrison, Melissa; Kopocis, Ken; Avi Garbow; Cynthia Giles-AA; Grevatt, Peter
Subject: Proposed EPA comment on Michigan/Flint press conference announcing steps to address lead levels in Flint drinking water

As promised, we have drafted a brief statement to be released after the Michigan/Flint press conference that will be held tomorrow in Flint at 1:30 eastern. We have also drafted answers to two follow up questions that we expect to get tomorrow and are asking OGC to assist with an answer to a third question that we expect to receive. Please let us know if you have any suggestions.

US EPA Regional Administrator comment on the State of Michigan and City of Flint press conference on October 2, 2015: Actions that the State of Michigan and the City of Flint announced today will protect public health. The immediate steps being taken to implement corrosion control will reduce lead in drinking water, as required by the Safe Drinking Water Act. US EPA will continue to provide technical assistance to the State of Michigan and the City of Flint to support their joint effort.

1. What about the interim report that has been attributed to a “rogue” EPA employee? The interim report was prepared by a Region 5 employee as part of his regular duties at EPA. It was intended to be an internal document to brief EPA managers on lead levels in drinking water at three residential properties in Flint. The interim report notes that a “final report will be submitted once additional analyses have been completed on pipe and water samples.” **Has a final report been prepared?** Yes. **Can I get a copy of the report?** The report contains Personally Identifiable Information and other confidential health data. If a FOIA request is submitted for the document, EPA attorneys will determine the extent to which a redacted document can be released. **Why was the interim report released without redaction?** EPA did not release the interim report to the public.

2. What about the SDWA petition that was submitted to EPA on 10/1/2015? EPA will review the petition.

3. Are all large drinking water systems required to implement corrosion control? OGC to draft answer consistent with the discussion earlier today.

Susan Hedman

Region 5 Administrator/Great Lakes National Program Manager

U.S. Environmental Protection Agency

77 West Jackson Blvd - 19th Floor

Chicago, Illinois 60604-3590

To: Poy, Thomas[poy.thomas@epa.gov]
Cc: Henry, Timothy[henry.timothy@epa.gov]
From: Hyde, Tinka
Sent: Fri 10/2/2015 1:03:01 PM
Subject: FW: Proposed EPA comment on Michigan/Flint press conference announcing steps to address lead levels in Flint drinking water

Below is the proposed EPA statement and Q&As for today – I'll keep you posted and on whether additional information is needed. Thanks

From: Hedman, Susan
Sent: Thursday, October 01, 2015 7:38 PM
To: Hyde, Tinka; Kelley, Jeff
Subject: FW: Proposed EPA comment on Michigan/Flint press conference announcing steps to address lead levels in Flint drinking water

From: Hedman, Susan
Sent: Thursday, October 01, 2015 7:29 PM
To: Meiburg, Stan; Fritz, Matthew; Burke, Thomas; Reynolds, Thomas; Vaught, Laura; Harrison, Melissa; Kopocis, Ken; Avi Garbow; Cynthia Giles-AA; Grevatt, Peter
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Cc: Rowan, Anne[rowan.anne@epa.gov]; Cassell, Peter[cassell.peter@epa.gov]; Beckmann, Ronna Erin[beckmann.ronna@epa.gov]; Harrison, Melissa[Harrison.Melissa@epa.gov]; Abrams, Dan[Abrams.Dan@epa.gov]; Poy, Thomas[poy.thomas@epa.gov]
From: Kelley, Jeff
Sent: Fri 10/2/2015 1:20:08 PM
Subject: Flint water clips for the morning of Oct. 2

•□□□□□□□□□ State to announce Flint water action plan Friday at Kettering (Flint Journal)

•□□□□□□□□□ Petition launched for EPA intervention in Flint water crisis (Flint Journal)

•□□□□□□□□□ Residents, ACLU Ask EPA to Take Action on Flint Water (Michigan Public Radio Network)

•□□□□□□□□□ Budget bill add-on awaits future state funds for Flint water (Flint Journal)

•□□□□□□□□□ Don't drink Flint's water, Genesee County leaders warn (Flint Journal)

•□□□□□□□□□ Genesee County declares public health emergency (Michigan Radio)

•□□□□□□□□□ Who's to blame for Flint's water crisis? Virginia Tech researcher points the finger at MDEQ (Michigan Radio)

•□□□□□□□□□ Our Editorial: Get Flint residents drinkable water (Detroit News)

•□□□□□□□□□ Efforts to get the lead out of Flint's water awash in finger-pointing (Toledo Blade)

•□□□□□□□□□ Public health emergency declared due to lead in Flint water (Associated Press)

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http://www.mlive.com/news/flint/index.ssf/2015/10/state_will_announce_flint_wate.html

State to announce Flint water action plan Friday at Kettering

By Ron Fonger | rfonger1@mlive.com The Flint Journal on October 01, 2015 at 8:12 PM, updated October 01, 2015 at 11:12 PM

FLINT, MI — Local, state and federal officials are set to announce a plan for addressing concerns with lead in Flint's drinking water at a news conference Friday, Oct. 2.

An advisory from the Michigan Department of Environmental Quality said leaders will announce the plan at 1:30 p.m. at Kettering University.

The news conference comes after weeks of worrisome news about rising levels of lead in the city's tap water, documented by researchers from Virginia Tech university and a study by a Hurley Medical Center doctor that showed the number of children in the city with elevated blood levels nearly doubled after the city started using the Flint River as its water source in 2014.

Brad Wurfel, director of communications for the DEQ, said Thursday, Oct. 1, that Gov. Rick Snyder cannot attend the news conference.

Snyder said earlier this week that he expected state officials to announce plans to deal with the lead in water issue by Friday, saying, "There are probably some things that weren't as fully understood when that switch was made."

The state oversees water quality in Flint, and state-appointed emergency managers were running city government when decisions were made not to negotiate a short-term agreement to continue buying Lake Huron water from Detroit and to instead use the river as a water source.

Although the city is not currently in violation of the Safe Drinking Water Act, bacteria, the level of total trihalomethanes and lead have been problems in the water system since then.

Among those scheduled to attend the news conference are Mayor Dayne Walling; Harvey Hollins, director of the state Office of Urban Initiatives; Dan Wyant, director of the Michigan DEQ; Nick Lyon, director of the Michigan Department of Health and Human Services; and Dr. Eden Wells, chief medical executive of the state Department of Health and Human Services, the news release said.

Wurfel would not discuss the plan in advance of the news conference, but officials in local, state and the federal government have called for a variety of actions in recent weeks.

Among them: Funding for home water filters, additional testing of city water and reconnection of Flint to the Detroit water system.

"We're looking forward to coming to Flint. We recognize lead is a concern in the city," Wurfel said.

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http://www.mlive.com/news/flint/index.ssf/2015/10/greater_flint_aclu_holds_meeti.html#incart_story_pa

Petition launched for EPA intervention in Flint water crisis

By Amanda Emery | aemery@mlive.com The Flint Journal Follow on Twitter on October 02, 2015 at 8:20 AM, updated October 02, 2015 at 8:21 AM

FLINT, MI -- As the American Civil Liberties Union of Michigan joined a petition urging an immediate federal response to Flint's water crisis, the Greater Flint chapter held its board meeting Thursday to update residents on Flint's water situation.

The petition urges the U.S. Environmental Protection Agency to order Flint to reconnect to the Detroit Water and Sewerage Department system, among other requests.

The board meeting was held Thursday, Oct. 1 at the IINN's Great Lakes Center, 4800 South Saginaw Street in Flint. About 15 people attended the meeting as ACLU of Michigan investigative reporter Curt Guyette talked about the investigation into lead in the water and what's to come.

Woodside Church Pastor Deborah Conrad attended the meeting to get updates on the water situation. Conrad said she is looking to see what can be done to make it better.

"I've been following a lot of the reports, so it was helpful to put it in a context, to hear some new updates," Conrad said. "To hear some fiery rhetoric about the time for indictments, the time for holding people accountable. I worry that filing lawsuits will just drain the tax base of the state, or the city, or the county, but we need some individuals to be held accountable for their role as agents of government acting in individual capacities, frankly in their individual interests and harming the residents of the city."

Guyette said the ACLU was involved in helping coordinate and conduct the tests on residents' water in Flint. He said a partnership with Virginia Tech was born following the testing of water at the home of Flint resident LeeAnne Walters.

A number of groups from the Flint-area have signed on to the petition asking the EPA to take action that will decrease the danger to Flint residents' health from lead contamination in the drinking water.

A recent study by a Hurley Medical Center doctor found more children in Flint have elevated blood lead levels since Flint switched from the Detroit water system to using the Flint River as its primary water source in April 2014.

The groups include the Coalition for Clean Water, Concerned Pastors for Social Change, Water You Fighting For, Democracy Defense League Water Task Force, Flint

Water Study Team, Michigan Nurses Association, NAACP - Michigan State Conference, Michigan Chapter of the National Conference of Black Lawyers, American Civil Liberties Union of Michigan, and the Natural Resources Defense Council.

Genesee County Commissioners Brenda Clack, Jamie Curtis and Bryant Nolden, along with Genesee County Health Officer Mark Valacak, held a news conference Thursday, Oct. 1, urging residents to not drink the city's water until it is checked for lead or they have installed an approved water filter.

The warning came just before an announcement that local, state and federal officials will announce a plan for addressing concerns with lead in Flint's drinking water at a news conference Friday, Oct. 2.

An advisory from the Michigan Department of Environmental Quality said leaders will announce the plan at 1:30 p.m. at Kettering University.

Guyette said the next move in the water saga will depend on what comes Friday.

"Well, a lot of that's going to depend on what the governor has to say," Guyette said, adding that there are more questions that need to be answered.

Frustrations have mounted since the water saga unfolded more than a year ago.

An order signed by Genesee County Circuit Court Judge Archie Hayman on Aug. 17, lowered water and sewer rates and halted the city from shutting off water to customers. Since then an average of 100 fewer customers are paying their water bills.

On Thursday during a news conference honoring the Flint Farmers' Market as one of the top six great public spaces on the American Planning Association's annual "Great Places in America" list a scuffle broke out between a water protestor and a market security guard.

City of Flint Spokesman Jason Lorenz said there were a couple of protestors at the market holding up signs. Lorenz said toward the end of the presentation some of the protestors began shouting.

One woman pulled out a bullhorn and security escorted the group out. Lorenz said that is when a scuffle ensued between the woman and the security guard. He said the woman was arrested on assault and battery charges.

In an effort to relieve the frustration and struggle for city residents, a water filter program has been put in place. Women and children receiving public assistance are on the top of the list to receive free water filters.

The announcement came Thursday that the United Way of Genesee County and the city have raised $105,000 from private and public sources to purchase 5,250 water filters for Flint residents.

The filter program announcement comes a week after the director of Hurley Medical Center's pediatric residency program warned in a study that the number of young children with elevated lead in their blood has doubled since the city changed its water source from Lake Huron to the Flint River.

Details on distribution of the filters will be communicated through the Genesee County Health Department Web site as well as a hotline that is in the process of being established.

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http://wmuk.org/post/residents-aclu-ask-epa-take-action-flint-water

Residents, ACLU Ask EPA to Take Action on Flint Water

Rick Pluta • 13 hours ago

(MPRN-Flint) The American Civil Liberties Union and some Flint residents are asking the federal government to step in to deal with the city's water crisis.

A complaint filed with the Environmental Protection Agency seeks an order for the city and the state to stop drawing water from the Flint River and re-connect with the Detroit water system.

The switch was ordered by a state-appointed emergency manager to save money. But the Flint River's water is highly corrosive, and caused lead to leach into the city's drinking water.

"There is no level of lead in water that is safe and it's having a devastating impact on the children in the city of Flint," said Michael Steinberg, an attorney with the ACLU. "In an attempt to save money, the emergency manager in Flint, acting in collusion with the state, provided unsafe drinking water to the residents of Flint, and the results have been catastrophic."

State and city officials are expected to outline the next plans to deal with the city's water crisis as soon as tomorrow.

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http://www.mlive.com/news/flint/index.ssf/2015/10/state_sen_ananich_sets_stage_f.html

Budget bill add-on awaits future state funds for Flint water

By Ron Fonger | rfonger1@mlive.com The Flint Journal on October 01, 2015 at 6:21 PM, updated October 01, 2015 at 6:22 PM

FLINT, MI -- A funding mechanism aimed at the state paying for measures to reduce lead levels in Flint's drinking water has been added to a budget bill in the Michigan Senate.

Jim Ananich, a Flint Democrat and Senate minority leader, successfully sought the placeholder of $100 to the Department of Environmental Quality for emergency water services for Flint.

The amount of the placeholder is expected to be changed after the true cost of the state's contribution is known, and details of that plan could be revealed as soon as Friday, Oct. 2.

"I worked with the administration (of Gov. Rick Snyder) and my colleagues on the Republican side to put a placeholder in place so that when we determine what resources are needed ... to fix the problem, we can go from there," Ananich said after the vote.

Gov. Rick Snyder earlier this week said he expected to announce those measures by Friday after saying "There are probably some things that weren't as fully understood (as should have been) when that switch (in Flint's water source) was made."

Flint changed its drinking water source from Lake Huron to Flint River in April 2014, a decision that came as the city was being run by a state-appointed emergency manager.

The city has struggled to effectively treat that river water since, and a recent study published by a Hurley Medical Center doctor says the number of children and infants with elevated blood lead levels since the change has nearly doubled.

Experiments by Virginia Tech university point to the source of Flint's water as the culprit, showing it is about 19 times more corrosive than the Lake Huron water that had been purchased from the city of Detroit for decades.

Virginia Tech researchers have said that corrosivity, interacting with lead in city service lines, has resulted in higher lead levels in water.

City officials have asked the state for assistance ranging from lead filters for faucets to help paying the Detroit Water and Sewerage Department to reconnect Flint to the DWSD water supply again until the Karegnondi Water Authority pipeline is completed.

The pipeline is expected to be available to service the city and Genesee County at some point in 2016.

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http://www.mlive.com/news/flint/index.ssf/2015/10/genesee_county_leaders_warn_do.html#incart_sto

Don't drink Flint's water, Genesee County leaders warn

By Jiquanda Johnson | jjohns16@mlive.com The Flint Journal Follow on Twitter on October 01, 2015 at 6:13 PM, updated October 01, 2015 at 11:33 PM

GENESEE COUNTY, MI — Don't drink the water. That's one message Genesee County officials are pushing to residents who get their water supply from the city of Flint.

Genesee County Commissioners Brenda Clack, Jamie Curtis and Bryant Nolden, along with Genesee County Health Officer Mark Valacak, held a news conference Thursday, Oct. 1, urging residents to not drink the city's water until it is checked for lead or they have installed an approved water filter.

The commissioners declared a public health emergency and said they are hoping their declaration will move Gov. Rick Snyder to declare a state of emergency to handle Flint's water crisis.

"This falls directly on the doorstep of the governor," said Nolden. "If we look at what happened with going to the Flint River, this falls smack-dab on the emergency manager and the governor. Now, I think it's imperative that the state step up and help us fix this problem. We're just imploring that the state actively engage and look at ways we can connect to the Detroit River. ... This is a major health situation for this entire community."

Flint Mayor Dayne Walling issued a statement on the commissioners' declaration, saying Flint water customers should filter their water before drinking it.

Commissioners said they have issued various communications with Snyder's office but still haven't heard any word from the governor about the state's plans.

"Flint residents need safe, clean water, and they need accurate information about their health and their homes," said David Murray, Snyder's deputy press secretary, in a statement issued Thursday. "Gov. Snyder has an action plan that builds on existing efforts to help Flint city leaders and their residents. ... It addresses short- and long-term challenges and will keep city residents safe."

A batch of water filters is expected to arrive in the city sometime Friday, Oct. 2. The filters came from the combined efforts of the United Way, city of Flint, General Motors Foundation and a donation from the Making Our Children Smile Foundation. In total, $105,000 was donated to purchase 5,250 water filters — costing about $20 each — for Flint residents.

Valacak said he is hoping officials can start distributing the water filters as early as Friday afternoon, but they are going to focus on high-risk residents, including pregnant women and homes with children.

The county has partnered with the United Way and other community organizations, such as the University of Michigan-Flint, to help distribute the water filters. Valacak said they are looking to have details on distribution as soon as Friday morning, and updates can be found on the Health Department's website.

In addition, the Flint Department of Public Works is offering free water testing for Flint residents.

There are potentially 45,000 homes in the city that may have issues with lead. Clack, Curtis and Nolden represent the majority of the city on the county board. Nolden said his district is primarily in older areas of the city, where the infrastructure is older and residents may be at high risk for lead exposure.

On Tuesday, Sept. 29, the county issued an advisory warning the community of various health hazards associated with lead, including brain damage, stunted growth and hearing problems in children. Valacak said pregnant women and children 5 and younger are especially vulnerable.

Commissioners said they have reached out to Snyder in hopes of him declaring a state of emergency for the city but have not heard back from his office and also said his anonymous donation of 1,500 water filers nearly a month ago shows the governor's office knows there is a problem with Flint's water.

"To me, that's an admission of guilt," Curtis said. "You know there's a problem. ... We're not looking for anybody to point fingers and put the blame. ... We have lead in our water. Let's fix the problem."

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http://michiganradio.org/post/genesee-county-declares-public-health-emergency#stream/0

Genesee County declares public health emergency

Steve Carmody, Michigan Radio • 13 hours ago

Recent studies have shown blood lead levels in Flint children have doubled, even tripled in some parts of town, since the city started using the Flint River as its drinking water source.

So today Genesee County officials declared a public health emergency.

“We often use the phrase that children are our most valuable resource … then we got to begin acting like they are,” says County Commissioner Brenda Clack.

County commission chairman Jaime Curtis says lead levels in the city of Flint’s water are threatening people’s lives.

“We’ll take water. We’ll take filters. We’ll take money. We’ll take anything to keep our people safe,” Curtis said at a news conference.

The county hopes to start distributing thousands of water filters tomorrow.

The city of Flint issued a lead advisory last week.

Flint Mayor Dayne Walling issued a statement urging people in Flint to follow the guidelines in the county’s public health declaration.

"I encourage the public to follow the guidance in the declaration to use a certified filter, have water testing done, and flush cold water for five minutes before drinking," says Walling.

Tomorrow, a "comprehensive" plan will be announced for dealing with Flint's water crisis.

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http://michiganradio.org/post/whos-blame-flints-water-crisis-virginia-tech-researcher-points-finger-mdeq#stream/0

Who's to blame for Flint's water crisis? Virginia Tech researcher points the finger at MDEQ

Mark Brush, Michigan Radio • 15 hours ago

Yesterday, Gov. Rick Snyder admitted that the decision to switch the city of Flint's water supply from Detroit's system over to the Flint River was not well planned.

"In terms of a mistake, what I would say is, is there are probably things that were not as fully understood as when that switch was made," Snyder said.

At the direction of the state-appointed emergency manager, the city made the switch in April 2014, and problems with the drinking water started soon after.

People complained of brown water. There were boil-water advisories after the water was found to have E. coli contamination, and the drinking water also had unsafe levels of a chlorine byproduct (total trihalomethanes).

Fast forward almost a year and a half, and now we learn some residents in the city are being exposed to unsafe levels of lead in their drinking water. Pediatricians have concluded that the water in Flint is likely poisoning kids.

How could one of Michigan's major cities be facing this problem?

Marc Edwards, a civil engineering professor from Virginia Tech University and a nationally renowned expert on water treatment, has put the blame squarely on the agency in charge of overseeing the safety of Flint's drinking water, the Michigan Department of Environmental Quality.

Edwards published a blog post yesterday in which he writes:

Given MDEQ's insistence that there is absolutely nothing wrong with Flint water, we have created a timeline that illustrates how MDEQ's mistakes and deception created the Flint water crisis in the first place.

In his timeline, Edwards says the state failed to require that the city have a corrosion-control program in place when the city switched over to Flint River water.

"What we discovered to our shock was that they switched to a new water source that was obviously very corrosive, meaning it would eat up the lead pipe and iron pipe and essentially put the metals into the water, without controlling the corrosion," Edwards says. "And this is a horrible idea in a city full of lead plumbing and lead pipe like Flint."

Edwards says current estimates are that Flint has about 15,000 drinking water service lines made of lead.

How dangerous metals can get into drinking water

When water flows through copper and lead pipes, it can take up some of the metal and make the water unsafe. To control for this problem, the Environmental Protection Agency has what's called a "lead and copper rule."

The purpose of the rule is listed in this "quick reference guide:"

Protect public health by minimizing lead (Pb) and copper (Cu) levels in drinking water, primarily by reducing water corrosivity. Pb and Cu enter drinking water mainly from corrosion of Pb and Cu containing plumbing materials.

To keep these metals from leaching into drinking water, municipal treatment plants can change the water chemistry to lower the water's ability to corrode these pipes.

It's called "corrosion control," and Edwards says the Michigan Department of Environmental Quality covered up the fact that Flint had no corrosion control program in place.

"Before you switch to a new water source, six months to a year ahead of time, you are supposed to do laboratory experiments to determine the corrosivity of the water," says Edwards. "And the chemistry – the pH, the alkalinity, and the phosphate that you need to make sure that the lead stays on the pipes and out of the water."

Edwards contends that the new water system had to have a "corrosion control" plan in place so that "you're not doing an uncontrolled human experiment on a city's population."

According to emails obtained by the ACLU of Michigan, a state MDEQ official, Stephen Busch, responded to a request from EPA Region 5, the federal agency that oversees MDEQ, that the new water system in Flint did have a corrosion control program in place.

That exchange occurred in February of this year.

In April, according to the emails, the EPA Region 5 official later found out that was not true. Flint, it turns out, did not have a corrosion-control program in place.

From the emails:

Pat Cook [of MDEQ] has confirmed that following the disconnection from Detroit, Flint has not been operating any corrosion control treatment, which is very concerning given the likelihood of LSLs [lead service lines] in the city.

The state has maintained that it is not required under the EPA's lead and copper rule to have a corrosion-control plan in place until two rounds of testing are completed to determine what that plan looks like.

More from Michigan Radio's Lindsey Smith:

At face value, the EPA rules are clear, all water systems that serve more than 50,000 people must have some kind of corrosion control.

But when you switch water sources, there is apparently some room for interpretation.

In approving updates to this federal regulation in 2000, the EPA noted that "water systems need to make treatment changes, on occasion, to react to changing circumstances."

In these cases, the rule does not “prevent a state from approving treatment changes,” but it’s not entirely clear if the state can approve having zero corrosion-control treatment.

As Edwards understands it, the EPA should have acted once the agency found out the state had no corrosion-control plan in place in Flint.

“If there was ever a case where [the] EPA should exert emergency powers and take primacy away from an agency, this is it,” he said.

Edwards says the city was also not conducting tests for lead and copper properly.

The point of the lead and copper rule is to make sure cities are sampling homes that are high risk – that is, homes serviced by lead pipe.

An ACLU of Michigan investigation found that the city did not know whether it was testing homes serviced by lead pipes.

In this video, Michael Glasgow, the utilities manager for Flint, indicated the city doesn't know where the lead pipes are.

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http://www.detroitnews.com/story/opinion/editorials/2015/10/01/editorial-flint-drinkable-water/73172092/

Our Editorial: Get Flint residents drinkable water

The Detroit News 11:32 p.m. EDT October 1, 2015

It doesn't matter if official reports say Flint's water is safe to drink. If residents turn on the tap and the water that comes out is oddly colored — or any color but clear — and stinky, they aren't going to drink it. Nor should they have to.

Flint water customers have been complaining about the smell, taste and color of their water since the spring of 2014, after the city cut its ties to the Detroit Water system and started treating and delivering its own supply.

The move saved Flint about $12 million a year, not an insignificant amount for a city that is under emergency financial management by the state of Michigan because of its shaky finances.

But cheaper water is no bargain if it is undrinkable. And residents of Flint are making a good case that the water the city provides is unfit for human consumption.

Water in the Detroit system is pulled from the depths of Lake Huron and has few contaminants that must be cleansed away at the treatment plant. Flint, for now at least, gets its water from the Flint River, which has endured a century or more of industrial and residential pollution.

Cleansing the river water is a more challenging task, and one Flint has yet to master. Residents have received a string of "boil water" notices due to mistakes made at the plant.

Most worrisome, however, is a new report that indicates elevated levels of lead in Flint children under the age of 5. Lead has a detrimental impact on development, and its increased presence in Flint's kids should not be taken lightly.

The state Department of Environmental Quality insists the water has been thoroughly tested and is safe.

But, again, residents who see and smell foul water coming from their tap can be forgiven if they doubt those assurances.

Gov. Rick Snyder, working with an unnamed private donor, recently distributed about 1,500 filters to Flint water customers. The filters remove chemical compounds as well as lead.

That seems a good temporary solution at least. But thousands more are needed. State Sen. Jim Ananich, a Democrat from Flint, is asking the state to find the funds for 15,000 filters to distribute to all water system customers.

That is a reasonable request, and may bridge residents until next year, when the city is expected to connect to a new regional water pipeline from Lake Huron.

The other option is to reconnect to the Detroit water system.

Whatever choice is made, the solution should be put in place quickly. If the elevated lead levels discovered by pediatricians at the Hurley Medical Center are linked to the water supply, then this is a public health emergency that demands an urgent response.

Flint residents are paying for water, and have the right to expect it to be clean and drinkable. They should not have to spend additional money each month to purchase bottled water.

The decision to disconnect Flint from Detroit water lines was made under the state's watch. The state has a responsibility to find a fix, and soon.

https://www.toledoblade.com/JackLessenberry/2015/10/02/Efforts-to-get-the-lead-out-of-Flint-s-water-awash-in-finger-pointing.html

Efforts to get the lead out of Flint's water awash in finger-pointing

BY JACK LESSENBERRY

BLADE OMBUDSMAN

FLINT, Mich. — Residents here haven't yet marched on city hall or the governor's office with pitchforks and blazing torches. But if they did, a lot of people might not blame them.

Flint has plenty of troubles: devastating job and population losses, plummeting property values, and a succession of emergency managers over the past four years.

The latest outrage is about water. Water that is discolored and foul-smelling. Water that at first had too much bacteria and then too much disinfectant.

And water that now seems to be causing lead poisoning in some of Flint's children. One woman, whose husband works as a policy planner for city government, said her spouse was "in tears as a new father himself when an irate resident came in with her premature, lead-poisoned baby."

Flint's water saga goes back to last year, when officials announced that their cash-strapped city could no longer afford to buy water from Detroit.

They announced they would join a new consortium, the Karegnondi Water Authority, which would supply purified water from Lake Huron. But Karegnondi's operation won't be up and running until sometime the following year.

So Flint officials announced that in the meantime, they would supply residents with treated water from the Flint River. But that turned into a disaster from almost day one. There were reports that the water was discolored and foul-tasting.

When tests showed that the water was dangerously contaminated with bacteria, including the infamous E. coli, the city pumped chlorine into the water.

That backfired too: In January, residents were told their water didn't meet federal safety standards, this time because of the chlorine.

While it may have killed the bacteria, it left the water with high levels of trihalomethane (TTHM), which is thought to increase the chances of developing cancer.

Average levels of TTHM didn't become acceptable until late this summer. Then Flint had a terrifying new problem: lead poisoning.

Last week, a study by physicians at Hurley Medical Center in Flint showed that the tap water in Flint has resulted in significantly elevated levels in the blood of the city's children. The scientists said the lead isn't actually in the water, but that the river water itself was more corrosive than the lake water Flint had been buying from Detroit.

A team from Virginia Tech tested samples last month from 300 homes, and found what it called "seriously" high levels of lead. The Hurley study found the percentage of children with seriously elevated lead levels had almost doubled.

That got politicians' attention. Mayor Dayne Walling advised residents to use only cold water, let it run from the tap for five minutes, and buy a filter for lead removal. The mayor also asked Gov. Rick Snyder to come up with $30 million to fix the water system and replace lead pipes.

City officials say about half the customers in Flint may be facing a problem, because the transmission lines connecting them to city water mains are made with lead.

The mayor's request for money from the governor wasn't good enough for the editorial board of the Flint Journal, the city's newspaper. When the news of lead poisoning surfaced, it ran an editorial saying "it's time to abandon the Flint River" as a drinking water source.

"We call on the governor to make this right for Flint citizens by brokering a return to Detroit water that won't bankrupt the city of Flint," the editorial said. It added: "Flint is in a crisis that was created in no small part by Snyder's hand-picked emergency manager, and it is Snyder's job to fix this mess."

Yet the governor has shown no signs of doing any such thing.

Pat Clawson, a longtime Flint area resident and former investigative reporter, thinks his city's plight should be a national scandal. "They are poisoning the people with this water — poisoning them, and that's what the doctors call it among themselves," he told me.

He puts the lion's share of the blame on Mayor Walling, who he says "was involved in planning and promoting the switch to Flint River water from the start."

But Mr. Clawson says there is plenty of blame to go around: "I believe there is criminal culpability on the part of public officials for causing and concealing this crisis."

He urged the federal and state governments to convene grand juries to investigate. Whether that will happen is anyone's guess. Meanwhile, the agony continues for the 99,000 folks who still live in the once-prosperous city of Flint.

Jack Lessenberry, a member of the journalism faculty at Wayne State University in Detroit and The Blade's ombudsman, writes on issues and people in Michigan.

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http://www.wtvm.com/story/30170601/public-health-emergency-declared-due-to-lead-in-flint-water

Public health emergency declared due to lead in Flint water

By COREY WILLIAMS, Associated Press

DETROIT (AP) - A public health emergency has been declared in cash-strapped Flint after tests showed the Michigan city's water supply is causing elevated levels of lead in children and following months of complaints about the smell and taste.

Gov. Rick Snyder this week questioned the switch to the Flint River from the Detroit water system in 2014, a decision that was made as a cost-saving move while a new regional pipeline is built to Lake Huron.

And on Thursday, the Genesee County health department declared a public health emergency, recommending that people not drink the water unless it has been filtered and tested to rule out elevated levels of lead. More steps will be announced Friday.

The problem: Although the river water is treated, it is corrosive and releasing lead from old plumbing in thousands of homes.

A coalition of residents and national groups petitioned the U.S. Environmental Protection Agency to order the state to reconnect Flint to Detroit water.

"As evidenced by the ongoing poisoning of the children of Flint, it's time for the EPA to take immediate action to provide us with a safe water source," LeeAnne Walters, a Flint parent and member of the Water You Fighting For group, said Thursday.

Flint, 60 miles north of Detroit, is among a number of communities that have complained about the rising cost of Detroit's water and sewerage service, which serves about 4 million people in southeastern Michigan. It opted to temporarily use the Flint River until a new line to Port Huron opens in 2016 at an annual cost of $12.5 million.

The decision to break away from the Detroit system was made while a Snyder-appointed emergency manager was running the long-struggling city, which had reached a financial crisis.

"In terms of a mistake, what I would say is we found there are probably things that weren't as fully understood when that switch was made," the governor said Wednesday.

His comments marked a significant shift. In July, a spokesman for the state's Department of Environmental Quality, Brad Wurfel, recommended home tests but added: "Anyone who is concerned about lead in the drinking water in Flint can relax."

Residents are unhappy with the taste, smell and appearance of water from the Flint River and have reported rashes, hair loss and other health concerns that they attribute to it. A General Motors plant stopped using the water because it was causing excessive rust.

Despite the complaints, city officials had said state tests showed the water met federal safety guidelines.

But in September, Virginia Tech researchers released a report saying Flint's water was creating a health threat in old homes that have lead pipes or pipes fused with lead solder. And doctors last week reported high levels of lead in local children's blood samples, also blaming water pipes.

Flint officials say they know which homes have risky pipes but that the information is on about 45,000 index cards and difficult to retrieve.

The city is now telling residents to use only cold water for drinking, cooking and making baby formula, and recommending they use the certified filters. The General Motors Foundation, the local United Way and others have given at least $105,000 to buy filters for 5,000 residents.

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Jeff Kelley
Director, Office of External Communications
U.S. EPA Region 5
ph: 312-353-1159

To: Meiburg, Stan[Meiburg.Stan@epa.gov]; Rupp, Mark[Rupp.Mark@epa.gov]; Fritz, Matthew[Fritz.Matthew@epa.gov]; Vaught, Laura[Vaught.Laura@epa.gov]; Grevatt, Peter[Grevatt.Peter@epa.gov]; Burke, Thomas[Burke.Thomas@epa.gov]; Kopocis, Ken[Kopocis.Ken@epa.gov]; Harrison, Melissa[Harrison.Melissa@epa.gov]; Reynolds, Thomas[Reynolds.Thomas@epa.gov]
From: Hedman, Susan
Sent: Fri 10/2/2015 1:22:40 PM
Subject: Fwd: Flint water clips for the morning of Oct. 2

Sent from my iPhone

Begin forwarded message:

> **From:** "Kelley, Jeff" <kelley.jeff@epa.gov>
> **Date:** October 2, 2015 at 8:20:08 AM CDT
> **To:** "Hedman, Susan" <hedman.susan@epa.gov>, "Kaplan, Robert" <kaplan.robert@epa.gov>, "Hyde, Tinka" <hyde.tinka@epa.gov>
> **Cc:** "Rowan, Anne" <rowan.anne@epa.gov>, "Cassell, Peter" <cassell.peter@epa.gov>, "Beckmann, Ronna Erin" <beckmann.ronna@epa.gov>, "Harrison, Melissa" <Harrison.Melissa@epa.gov>, "Abrams, Dan" <Abrams.Dan@epa.gov>, "Poy, Thomas" <poy.thomas@epa.gov>
> **Subject: Flint water clips for the morning of Oct. 2**
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> - □□□□□□□□ State to announce Flint water action plan Friday at Kettering (Flint Journal)
> - □□□□□□□□ Petition launched for EPA intervention in Flint water crisis (Flint Journal)
> - □□□□□□□□ Residents, ACLU Ask EPA to Take Action on Flint Water (Michigan Public Radio Network)
> - □□□□□□□□ Budget bill add-on awaits future state funds for Flint water (Flint Journal)
> - □□□□□□□□ Don't drink Flint's water, Genesee County leaders warn (Flint Journal)
> - □□□□□□□□ Genesee County declares public health emergency (Michigan Radio)
> - □□□□□□□□ Who's to blame for Flint's water crisis? Virginia Tech researcher points the finger at MDEQ (Michigan Radio)
> - □□□□□□□□ Our Editorial: Get Flint residents drinkable water (Detroit News)

•□□□□□□□□ Efforts to get the lead out of Flint’s water awash in finger-pointing (Toledo Blade)

•□□□□□□□□ Public health emergency declared due to lead in Flint water (Associated Press)

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http://www.mlive.com/news/flint/index.ssf/2015/10/state_will_announce_flint_wate.html

State to announce Flint water action plan Friday at Kettering

By Ron Fonger | rfonger1@mlive.com The Flint Journal on October 01, 2015 at 8:12 PM, updated October 01, 2015 at 11:12 PM

FLINT, MI — Local, state and federal officials are set to announce a plan for addressing concerns with lead in Flint's drinking water at a news conference Friday, Oct. 2.

An advisory from the Michigan Department of Environmental Quality said leaders will announce the plan at 1:30 p.m. at Kettering University.

The news conference comes after weeks of worrisome news about rising levels of lead in the city's tap water, documented by researchers from Virginia Tech university and a study by a Hurley Medical Center doctor that showed the number of children in the city with elevated blood levels nearly doubled after the city started using the Flint River as its water source in 2014.

Brad Wurfel, director of communications for the DEQ, said Thursday, Oct. 1, that Gov. Rick Snyder cannot attend the news conference.

Snyder said earlier this week that he expected state officials to announce plans to deal with the lead in water issue by Friday, saying, "There are probably some things that weren't as fully understood when that switch was made."

The state oversees water quality in Flint, and state-appointed emergency managers were running city government when decisions were made not to negotiate a short-term agreement to continue buying Lake Huron water from Detroit and to instead use the river as a water source.

Although the city is not currently in violation of the Safe Drinking Water Act, bacteria, the level of total trihalomethanes and lead have been problems in the water system since then.

Among those scheduled to attend the news conference are Mayor Dayne Walling; Harvey Hollins, director of the state Office of Urban Initiatives; Dan Wyant, director of the Michigan DEQ; Nick Lyon, director of the Michigan Department of Health and Human Services; and Dr. Eden Wells, chief medical executive of the state Department of Health and Human Services, the news release said.

Wurfel would not discuss the plan in advance of the news conference, but officials in local, state and the federal government have called for a variety of actions in recent weeks.

Among them: Funding for home water filters, additional testing of city water and reconnection of Flint to the Detroit water system.

"We're looking forward to coming to Flint. We recognize lead is a concern in the city," Wurfel said.

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http://www.mlive.com/news/flint/index.ssf/2015/10/greater_flint_aclu_holds_meeti.html#incart_story

Petition launched for EPA intervention in Flint water crisis

By Amanda Emery | aemery@mlive.com The Flint Journal Follow on Twitter on October 02, 2015 at 8:20 AM, updated October 02, 2015 at 8:21 AM

FLINT, MI -- As the American Civil Liberties Union of Michigan joined a petition urging an immediate federal response to Flint's water crisis, the Greater Flint chapter held its board meeting Thursday to update residents on Flint's water situation.

The petition urges the U.S. Environmental Protection Agency to order Flint to reconnect to the Detroit Water and Sewerage Department system, among other requests.

The board meeting was held Thursday, Oct. 1 at the IINN's Great Lakes Center, 4800 South Saginaw Street in Flint. About 15 people attended the meeting as ACLU of Michigan investigative reporter Curt Guyette talked about the investigation into lead in the water and what's to come.

Woodside Church Pastor Deborah Conrad attended the meeting to get updates on the water situation. Conrad said she is looking to see what can be done to make it better.

"I've been following a lot of the reports, so it was helpful to put it in a context, to hear some new updates," Conrad said. "To hear some fiery rhetoric about the time for indictments, the time for holding people accountable. I worry that filing lawsuits will just drain the tax base of the state, or the city, or the county, but we need some individuals to be held accountable for their role as agents of government acting in individual capacities, frankly in their individual interests and harming the residents of the city."

Guyette said the ACLU was involved in helping coordinate and conduct the tests on residents' water in Flint. He said a partnership with Virginia Tech was born following the testing of water at the home of Flint resident LeeAnne Walters.

A number of groups from the Flint-area have signed on to the petition asking the EPA to take action that will decrease the danger to Flint residents' health from lead contamination in the drinking water.

A recent study by a Hurley Medical Center doctor found more children in Flint have elevated blood lead levels since Flint switched from the Detroit water system to using the Flint River as its primary water source in April 2014.

The groups include the Coalition for Clean Water, Concerned Pastors for Social Change, Water You Fighting For, Democracy Defense League Water Task Force, Flint Water Study Team, Michigan Nurses Association, NAACP - Michigan State Conference, Michigan Chapter of the National Conference of Black Lawyers, American Civil Liberties Union of Michigan, and the Natural Resources Defense Council.

Genesee County Commissioners Brenda Clack, Jamie Curtis and Bryant Nolden, along with Genesee County Health Officer Mark Valacak, held a news conference Thursday, Oct. 1, urging residents to not drink the city's water until it is checked for lead or they have installed an approved water filter.

The warning came just before an announcement that local, state and federal officials will announce a plan for addressing concerns with lead in Flint's drinking water at a news conference Friday, Oct. 2.

An advisory from the Michigan Department of Environmental Quality said leaders will announce the plan at 1:30 p.m. at Kettering University.

Guyette said the next move in the water saga will depend on what comes Friday.

"Well, a lot of that's going to depend on what the governor has to say," Guyette said, adding that there are more questions that need to be answered.

Frustrations have mounted since the water saga unfolded more than a year ago.

An order signed by Genesee County Circuit Court Judge Archie Hayman on Aug. 17, lowered water and sewer rates and halted the city from shutting off water to customers. Since then an average of 100 fewer customers are paying their water bills.

On Thursday during a news conference honoring the Flint Farmers' Market as one of the top six great public spaces on the American Planning Association's annual "Great Places in America" list a scuffle broke out between a water protestor and a market security guard.

City of Flint Spokesman Jason Lorenz said there were a couple of protestors at the market holding up signs. Lorenz said toward the end of the presentation some of the protestors began shouting.

One woman pulled out a bullhorn and security escorted the group out. Lorenz said that is when a scuffle ensued between the woman and the security guard. He said the woman was arrested on assault and battery charges.

In an effort to relieve the frustration and struggle for city residents, a water filter program has been put in place. Women and children receiving public assistance are on the top of the list to receive free water filters.

The announcement came Thursday that the United Way of Genesee County and the city have raised $105,000 from private and public sources to purchase 5,250 water filters for Flint residents.

The filter program announcement comes a week after the director of Hurley Medical Center's pediatric residency program warned in a study that the number of young children with elevated lead in their blood has doubled since the city changed its water source from Lake Huron to the Flint River.

Details on distribution of the filters will be communicated through the Genesee County Health Department Web site as well as a hotline that is in the process of being established.

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http://wmuk.org/post/residents-aclu-ask-epa-take-action-flint-water

Residents, ACLU Ask EPA to Take Action on Flint Water

Rick Pluta • 13 hours ago

(MPRN-Flint) The American Civil Liberties Union and some Flint residents are asking the federal government to step in to deal with the city's water crisis.

A complaint filed with the Environmental Protection Agency seeks an order for the city and the state to stop drawing water from the Flint River and re-connect with the Detroit water system.

The switch was ordered by a state-appointed emergency manager to save money. But the Flint River's water is highly corrosive, and caused lead to leach into the city's drinking water.

“There is no level of lead in water that is safe and it’s having a devastating impact on the children in the city of Flint,” said Michael Steinberg, an attorney with the ACLU. “In an attempt to save money, the emergency manager in Flint, acting in collusion with the state, provided unsafe drinking water to the residents of Flint, and the results have been catastrophic.”

State and city officials are expected to outline the next plans to deal with the city’s water crisis as soon as tomorrow.

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http://www.mlive.com/news/flint/index.ssf/2015/10/state_sen_ananich_sets_stage_f.html

Budget bill add-on awaits future state funds for Flint water

By Ron Fonger | rfonger1@mlive.com The Flint Journal on October 01, 2015 at 6:21 PM, updated October 01, 2015 at 6:22 PM

FLINT, MI -- A funding mechanism aimed at the state paying for measures to reduce lead levels in Flint's drinking water has been added to a budget bill in the Michigan Senate.

Jim Ananich, a Flint Democrat and Senate minority leader, successfully sought the placeholder of $100 to the Department of Environmental Quality for emergency water services for Flint.

The amount of the placeholder is expected to be changed after the true cost of the state's contribution is known, and details of that plan could be revealed as soon as Friday, Oct. 2.

"I worked with the administration (of Gov. Rick Snyder) and my colleagues on the Republican side to put a placeholder in place so that when we determine what resources are needed ... to fix the problem, we can go from there," Ananich said after the vote.

Gov. Rick Snyder earlier this week said he expected to announce those measures by Friday after saying "There are probably some things that weren't as fully understood (as should have been) when that switch (in Flint's water source) was made."

Flint changed its drinking water source from Lake Huron to Flint River in April 2014, a decision that came as the city was being run by a state-appointed emergency manager.

The city has struggled to effectively treat that river water since, and a recent study published by a Hurley Medical Center doctor says the number of children and infants with elevated blood lead levels since the change has nearly doubled.

Experiments by Virginia Tech university point to the source of Flint's water as the culprit, showing it is about 19 times more corrosive than the Lake Huron water that had been purchased from the city of Detroit for decades.

Virginia Tech researchers have said that corrosivity, interacting with lead in city service lines, has resulted in higher lead levels in water.

City officials have asked the state for assistance ranging from lead filters for faucets to help paying the Detroit Water and Sewerage Department to reconnect Flint to the DWSD water supply again until the Karegnondi Water Authority pipeline is completed.

The pipeline is expected to be available to service the city and Genesee County at some point in 2016.

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http://www.mlive.com/news/flint/index.ssf/2015/10/genesee_county_leaders_warn_do.html#incart_s

Don't drink Flint's water, Genesee County leaders warn

By Jiquanda Johnson | jjohns16@mlive.com The Flint Journal Follow on Twitter on October 01, 2015 at 6:13 PM, updated October 01, 2015 at 11:33 PM

GENESEE COUNTY, MI — Don't drink the water. That's one message Genesee County officials are pushing to residents who get their water supply from the city of Flint.

Genesee County Commissioners Brenda Clack, Jamie Curtis and Bryant Nolden, along with Genesee County Health Officer Mark Valacak, held a news conference Thursday, Oct. 1, urging residents to not drink the city's water until it is checked for lead or they have installed an approved water filter.

The commissioners declared a public health emergency and said they are hoping their declaration will move Gov. Rick Snyder to declare a state of emergency to handle Flint's water crisis.

"This falls directly on the doorstep of the governor," said Nolden. "If we look at what happened with going to the Flint River, this falls smack-dab on the emergency manager and the governor. Now, I think it's imperative that the state step up and help us fix this problem. We're just imploring that the state actively engage and look at ways we can connect to the Detroit River. ... This is a major health situation for this entire community."

Flint Mayor Dayne Walling issued a statement on the commissioners' declaration, saying Flint water customers should filter their water before drinking it.

Commissioners said they have issued various communications with Snyder's office but still haven't heard any word from the governor about the state's plans.

"Flint residents need safe, clean water, and they need accurate information about their health and their homes," said David Murray, Snyder's deputy press secretary, in a statement issued Thursday. "Gov. Snyder has an action plan that builds on existing efforts to help Flint city leaders and their residents. ... It addresses short- and long-term challenges and will keep city residents safe."

A batch of water filters is expected to arrive in the city sometime Friday, Oct. 2. The filters came from the combined efforts of the United Way, city of Flint, General Motors Foundation and a donation from the Making Our Children Smile Foundation. In total, $105,000 was donated to purchase 5,250 water filters — costing about $20 each — for Flint residents.

Valacak said he is hoping officials can start distributing the water filters as early as Friday afternoon, but they are going to focus on high-risk residents, including pregnant women and homes with children.

The county has partnered with the United Way and other community organizations, such as the University of Michigan-Flint, to help distribute the water filters. Valacak said they are looking to have details on distribution as soon as Friday morning, and updates can be found on the Health Department's website.

In addition, the Flint Department of Public Works is offering free water testing for Flint residents.

There are potentially 45,000 homes in the city that may have issues with lead. Clack, Curtis and Nolden represent the majority of the city on the county board. Nolden said his district is primarily in older areas of the city, where the infrastructure is older and residents may be at high risk for lead exposure.

On Tuesday, Sept. 29, the county issued an advisory warning the community of various health hazards associated with lead, including brain damage, stunted growth and hearing problems in children. Valacak said pregnant women and children 5 and younger are especially vulnerable.

Commissioners said they have reached out to Snyder in hopes of him declaring a state of emergency for the city but have not heard back from his office and also said his anonymous donation of 1,500 water filers nearly a month ago shows the governor's office knows there is a problem with Flint's water.

"To me, that's an admission of guilt," Curtis said. "You know there's a problem. ... We're not looking for anybody to point fingers and put the blame. ... We have lead in our water. Let's fix the problem."

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http://michiganradio.org/post/genesee-county-declares-public-health-emergency#stream/0

Genesee County declares public health emergency

Steve Carmody, Michigan Radio • 13 hours ago

Recent studies have shown blood lead levels in Flint children have doubled, even tripled in some parts of town, since the city started using the Flint River as its drinking water source.

So today Genesee County officials declared a public health emergency.

“We often use the phrase that children are our most valuable resource … then we got to begin acting like they are,” says County Commissioner Brenda Clack.

County commission chairman Jaime Curtis says lead levels in the city of Flint’s water are threatening people’s lives.

“We’ll take water. We’ll take filters. We’ll take money. We’ll take anything to keep our people safe,” Curtis said at a news conference.

The county hopes to start distributing thousands of water filters tomorrow.

The city of Flint issued a lead advisory last week.

Flint Mayor Dayne Walling issued a statement urging people in Flint to follow the guidelines in the county’s public health declaration.

"I encourage the public to follow the guidance in the declaration to use a certified filter, have water testing done, and flush cold water for five minutes before drinking,” says Walling.

Tomorrow, a "comprehensive" plan will be announced for dealing with Flint’s water crisis.

http://michiganradio.org/post/whos-blame-flints-water-crisis-virginia-tech-researcher-points-finger-mdeq#stream/0

Who's to blame for Flint's water crisis? Virginia Tech researcher points the finger at MDEQ

Mark Brush, Michigan Radio • 15 hours ago

Yesterday, Gov. Rick Snyder admitted that the decision to switch the city of Flint's water supply from Detroit's system over to the Flint River was not well planned.

“In terms of a mistake, what I would say is, is there are probably things that were not as fully understood as when that switch was made,” Snyder said.

At the direction of the state-appointed emergency manager, the city made the switch in April 2014, and problems with the drinking water started soon after.

People complained of brown water. There were boil-water advisories after the water was found to have E. coli contamination, and the drinking water also had unsafe levels of a chlorine byproduct (total trihalomethanes).

Fast forward almost a year and a half, and now we learn some residents in the city are being exposed to unsafe levels of lead in their drinking water. Pediatricians have concluded that the water in Flint is likely poisoning kids.

How could one of Michigan’s major cities be facing this problem?

Marc Edwards, a civil engineering professor from Virginia Tech University and a nationally renowned expert on water treatment, has put the blame squarely on the agency in charge of overseeing the safety of Flint's drinking water, the Michigan Department of Environmental Quality.

Edwards published a blog post yesterday in which he writes:

Given MDEQ's insistence that there is absolutely nothing wrong with Flint water, we have created a timeline that illustrates how MDEQ's mistakes and deception created the Flint water crisis in the first place.

In his timeline, Edwards says the state failed to require that the city have a corrosion-control program in place when the city switched over to Flint River water.

"What we discovered to our shock was that they switched to a new water source that was obviously very corrosive, meaning it would eat up the lead pipe and iron pipe and essentially put the metals into the water, without controlling the corrosion," Edwards says. "And this is a horrible idea in a city full of lead plumbing and lead pipe like Flint."

Edwards says current estimates are that Flint has about 15,000 drinking water service lines made of lead.

How dangerous metals can get into drinking water

When water flows through copper and lead pipes, it can take up some of the metal and make the water unsafe. To control for this problem, the Environmental Protection Agency has what's called a "lead and copper rule."

The purpose of the rule is listed in this "quick reference guide:"

Protect public health by minimizing lead (Pb) and copper (Cu) levels in drinking water, primarily by reducing water corrosivity. Pb and Cu enter drinking water mainly from corrosion of Pb and Cu containing plumbing materials.

To keep these metals from leaching into drinking water, municipal treatment plants can change the water chemistry to lower the water's ability to corrode these pipes.

It's called "corrosion control," and Edwards says the Michigan Department of Environmental Quality covered up the fact that Flint had no corrosion control program in place.

"Before you switch to a new water source, six months to a year ahead of time, you are supposed to do laboratory experiments to determine the corrosivity of the water," says Edwards. "And the chemistry – the pH, the alkalinity, and the phosphate that you need to make sure that the lead stays on the pipes and out of the water."

Edwards contends that the new water system had to have a "corrosion control" plan in place so that "you're not doing an uncontrolled human experiment on a city's population."

According to emails obtained by the ACLU of Michigan, a state MDEQ official, Stephen Busch, responded to a request from EPA Region 5, the federal agency that oversees MDEQ, that the new water system in Flint did have a corrosion control program in place.

That exchange occurred in February of this year.

In April, according to the emails, the EPA Region 5 official later found out that was not true. Flint, it turns out, did not have a corrosion-control program in place.

From the emails:

Pat Cook [of MDEQ] has confirmed that following the disconnection from Detroit, Flint has not been operating any corrosion control treatment, which is very concerning given the likelihood of LSLs [lead service lines] in the city.

The state has maintained that it is not required under the EPA's lead and copper rule to have a corrosion-control plan in place until two rounds of testing are completed to determine what that plan looks like.

More from Michigan Radio's Lindsey Smith:

At face value, the EPA rules are clear, all water systems that serve more than 50,000 people must have some kind of corrosion control.

But when you switch water sources, there is apparently some room for interpretation.

In approving updates to this federal regulation in 2000, the EPA noted that "water systems need to make treatment changes, on occasion, to react to changing circumstances."

In these cases, the rule does not "prevent a state from approving treatment changes," but it's not entirely clear if the state can approve having zero corrosion-control treatment.

As Edwards understands it, the EPA should have acted once the agency found out the state had no corrosion-control plan in place in Flint.

"If there was ever a case where [the] EPA should exert emergency powers and take primacy away from an agency, this is it," he said.

Edwards says the city was also not conducting tests for lead and copper properly.

The point of the lead and copper rule is to make sure cities are sampling homes that are high risk – that is, homes serviced by lead pipe.

An ACLU of Michigan investigation found that the city did not know whether it was testing homes serviced by lead pipes.

In this video, Michael Glasgow, the utilities manager for Flint, indicated the city doesn't know where the lead pipes are.

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http://www.detroitnews.com/story/opinion/editorials/2015/10/01/editorial-flint-drinkable-water/73172092/

Our Editorial: Get Flint residents drinkable water

The Detroit News 11:32 p.m. EDT October 1, 2015

It doesn't matter if official reports say Flint's water is safe to drink. If residents turn on the tap and the water that comes out is oddly colored — or any color but clear — and stinky, they aren't going to drink it. Nor should they have to.

Flint water customers have been complaining about the smell, taste and color of their water since the spring of 2014, after the city cut its ties to the Detroit Water system and started treating and delivering its own supply.

The move saved Flint about $12 million a year, not an insignificant amount for a city that is under emergency financial management by the state of Michigan because of its shaky finances.

But cheaper water is no bargain if it is undrinkable. And residents of Flint are making a good case that the water the city provides is unfit for human consumption.

Water in the Detroit system is pulled from the depths of Lake Huron and has few contaminants that must be cleansed away at the treatment plant. Flint, for now at least, gets its water from the Flint River, which has endured a century or more of industrial and residential pollution.

Cleansing the river water is a more challenging task, and one Flint has yet to master. Residents have received a string of “boil water” notices due to mistakes made at the plant.

Most worrisome, however, is a new report that indicates elevated levels of lead in Flint children under the age of 5. Lead has a detrimental impact on development, and its increased presence in Flint’s kids should not be taken lightly.

The state Department of Environmental Quality insists the water has been thoroughly tested and is safe.

But, again, residents who see and smell foul water coming from their tap can be forgiven if they doubt those assurances.

Gov. Rick Snyder, working with an unnamed private donor, recently distributed about 1,500 filters to Flint water customers. The filters remove chemical compounds as well as lead.

That seems a good temporary solution at least. But thousands more are needed. State Sen. Jim Ananich, a Democrat from Flint, is asking the state to find the funds for 15,000 filters to distribute to all water system customers.

That is a reasonable request, and may bridge residents until next year, when the city is expected to connect to a new regional water pipeline from Lake Huron.

The other option is to reconnect to the Detroit water system.

Whatever choice is made, the solution should be put in place quickly. If the elevated lead levels discovered by pediatricians at the Hurley Medical Center are linked to the water supply, then this is a public health emergency that demands an urgent response.

Flint residents are paying for water, and have the right to expect it to be clean and drinkable. They should not have to spend additional money each month to purchase bottled water.

The decision to disconnect Flint from Detroit water lines was made under the state's watch. The state has a responsibility to find a fix, and soon.

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https://www.toledoblade.com/JackLessenberry/2015/10/02/Efforts-to-get-the-lead-out-of-Flint-s-water-awash-in-finger-pointing.html

Efforts to get the lead out of Flint's water awash in finger-pointing

BY JACK LESSENBERRY

BLADE OMBUDSMAN

FLINT, Mich. — Residents here haven't yet marched on city hall or the governor's office with pitchforks and blazing torches. But if they did, a lot of people might not blame them.

Flint has plenty of troubles: devastating job and population losses, plummeting property values, and a succession of emergency managers over the past four years.

The latest outrage is about water. Water that is discolored and foul-smelling. Water that at first had too much bacteria and then too much disinfectant.

And water that now seems to be causing lead poisoning in some of Flint's children. One woman, whose husband works as a policy planner for city government, said her spouse was "in tears as a new father himself when an irate resident came in with her premature, lead-poisoned baby."

Flint's water saga goes back to last year, when officials announced that their cash-strapped city could no longer afford to buy water from Detroit.

They announced they would join a new consortium, the Karegnondi Water Authority, which would supply purified water from Lake Huron. But Karegnondi's operation won't be up and running until sometime the following year.

So Flint officials announced that in the meantime, they would supply residents with treated water from the Flint River. But that turned into a disaster from almost day one. There were reports that the water was discolored and foul-tasting.

When tests showed that the water was dangerously contaminated with bacteria, including the infamous E. coli, the city pumped chlorine into the water.

That backfired too: In January, residents were told their water didn't meet federal safety standards, this time because of the chlorine.

While it may have killed the bacteria, it left the water with high levels of trihalomethane (TTHM), which is thought to increase the chances of developing cancer.

Average levels of TTHM didn't become acceptable until late this summer. Then Flint had a terrifying new problem: lead poisoning.

Last week, a study by physicians at Hurley Medical Center in Flint showed that the tap water in Flint has resulted in significantly elevated levels in the blood of the city's children. The scientists said the lead isn't actually in the water, but that the river water itself was more corrosive than the lake water Flint had been buying from Detroit.

A team from Virginia Tech tested samples last month from 300 homes, and found what it called "seriously" high levels of lead. The Hurley study found the percentage of children with seriously elevated lead levels had almost doubled.

That got politicians' attention. Mayor Dayne Walling advised residents to use only cold water, let it run from the tap for five minutes, and buy a filter for lead removal. The mayor also asked Gov. Rick Snyder to come up with $30 million to fix the water system and replace lead pipes.

City officials say about half the customers in Flint may be facing a problem, because the transmission lines connecting them to city water mains are made with lead.

The mayor’s request for money from the governor wasn’t good enough for the editorial board of the Flint Journal, the city’s newspaper. When the news of lead poisoning surfaced, it ran an editorial saying “it’s time to abandon the Flint River” as a drinking water source.

“We call on the governor to make this right for Flint citizens by brokering a return to Detroit water that won’t bankrupt the city of Flint,” the editorial said. It added: “Flint is in a crisis that was created in no small part by Snyder’s hand-picked emergency manager, and it is Snyder’s job to fix this mess.”

Yet the governor has shown no signs of doing any such thing.

Pat Clawson, a longtime Flint area resident and former investigative reporter, thinks his city’s plight should be a national scandal. “They are poisoning the people with this water — poisoning them, and that’s what the doctors call it among themselves,” he told me.

He puts the lion’s share of the blame on Mayor Walling, who he says “was involved in planning and promoting the switch to Flint River water from the start.”

But Mr. Clawson says there is plenty of blame to go around: “I believe there is criminal culpability on the part of public officials for causing and concealing this crisis.”

He urged the federal and state governments to convene grand juries to investigate. Whether that will happen is anyone’s guess. Meanwhile, the agony continues for the 99,000 folks who still live in the once-prosperous city of Flint.

Jack Lessenberry, a member of the journalism faculty at Wayne State University in Detroit and The Blade’s ombudsman, writes on issues and people in Michigan.

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http://www.wtvm.com/story/30170601/public-health-emergency-declared-due-to-lead-in-flint-water

Public health emergency declared due to lead in Flint water

By COREY WILLIAMS, Associated Press

DETROIT (AP) - A public health emergency has been declared in cash-strapped Flint after tests showed the Michigan city's water supply is causing elevated levels of lead in children and following months of complaints about the smell and taste.

Gov. Rick Snyder this week questioned the switch to the Flint River from the Detroit water system in 2014, a decision that was made as a cost-saving move while a new regional pipeline is built to Lake Huron.

And on Thursday, the Genesee County health department declared a public health emergency, recommending that people not drink the water unless it has been filtered and tested to rule out elevated levels of lead. More steps will be announced Friday.

The problem: Although the river water is treated, it is corrosive and releasing lead from old plumbing in thousands of homes.

A coalition of residents and national groups petitioned the U.S. Environmental Protection Agency to order the state to reconnect Flint to Detroit water.

"As evidenced by the ongoing poisoning of the children of Flint, it's time for the EPA to take immediate action to provide us with a safe water source," LeeAnne Walters, a Flint parent and member of the Water You Fighting For group, said Thursday.

Flint, 60 miles north of Detroit, is among a number of communities that have complained about the rising cost of Detroit's water and sewerage service, which serves about 4 million people in southeastern Michigan. It opted to temporarily use the Flint River until a new line to Port Huron opens in 2016 at an annual cost of $12.5 million.

The decision to break away from the Detroit system was made while a Snyder-appointed emergency manager was running the long-struggling city, which had reached a financial crisis.

"In terms of a mistake, what I would say is we found there are probably things that weren't as fully understood when that switch was made," the governor said Wednesday.

His comments marked a significant shift. In July, a spokesman for the state's Department of Environmental Quality, Brad Wurfel, recommended home tests but added: "Anyone who is concerned about lead in the drinking water in Flint can relax."

Residents are unhappy with the taste, smell and appearance of water from the Flint River and have reported rashes, hair loss and other health concerns that they attribute to it. A General Motors plant stopped using the water because it was causing excessive rust.

Despite the complaints, city officials had said state tests showed the water met federal safety guidelines.

But in September, Virginia Tech researchers released a report saying Flint's water was creating a health threat in old homes that have lead pipes or pipes fused with lead solder. And doctors last week reported high levels of lead in local children's blood samples, also blaming water pipes.

Flint officials say they know which homes have risky pipes but that the information is on about 45,000 index cards and difficult to retrieve.

The city is now telling residents to use only cold water for drinking, cooking and making baby formula, and recommending they use the certified filters. The General Motors Foundation, the local United Way and others have given at least $105,000 to buy filters for 5,000 residents.

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Jeff Kelley
Director, Office of External Communications
U.S. EPA Region 5
ph: 312-353-1159

To: Giles-AA, Cynthia[Giles-AA.Cynthia@epa.gov]
From: Hedman, Susan
Sent: Fri 10/2/2015 1:34:49 PM
Subject: Fwd: Flint water clips for the morning of Oct. 2

FYI

Sent from my iPhone

Begin forwarded message:

> **From:** "Hedman, Susan" <hedman.susan@epa.gov>
> **Date:** October 2, 2015 at 8:22:40 AM CDT
> **To:** "Meiburg, Stan" <Meiburg.Stan@epa.gov>, "Rupp, Mark" <Rupp.Mark@epa.gov>, "Fritz, Matthew" <Fritz.Matthew@epa.gov>, "Vaught, Laura" <Vaught.Laura@epa.gov>, "Grevatt, Peter" <Grevatt.Peter@epa.gov>, "Burke, Thomas" <Burke.Thomas@epa.gov>, "Kopocis, Ken" <Kopocis.Ken@epa.gov>, "Harrison, Melissa" <Harrison.Melissa@epa.gov>, "Reynolds, Thomas" <Reynolds.Thomas@epa.gov>
> **Subject: Fwd: Flint water clips for the morning of Oct. 2**
>
> Sent from my iPhone
>
> Begin forwarded message:
>
>> **From:** "Kelley, Jeff" <kelley.jeff@epa.gov>
>> **Date:** October 2, 2015 at 8:20:08 AM CDT
>> **To:** "Hedman, Susan" <hedman.susan@epa.gov>, "Kaplan, Robert" <kaplan.robert@epa.gov>, "Hyde, Tinka" <hyde.tinka@epa.gov>
>> **Cc:** "Rowan, Anne" <rowan.anne@epa.gov>, "Cassell, Peter" <cassell.peter@epa.gov>, "Beckmann, Ronna Erin" <beckmann.ronna@epa.gov>, "Harrison, Melissa" <Harrison.Melissa@epa.gov>, "Abrams, Dan" <Abrams.Dan@epa.gov>, "Poy, Thomas" <poy.thomas@epa.gov>
>> **Subject: Flint water clips for the morning of Oct. 2**
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>> •□□□□□□□□ State to announce Flint water action plan Friday at Kettering (Flint Journal)
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>> •□□□□□□□□ Petition launched for EPA intervention in Flint water crisis (Flint Journal)
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>> •□□□□□□□□ Residents, ACLU Ask EPA to Take Action on Flint Water

(Michigan Public Radio Network)

•□□□□□□□□ Budget bill add-on awaits future state funds for Flint water (Flint Journal)

•□□□□□□□□ Don't drink Flint's water, Genesee County leaders warn (Flint Journal)

•□□□□□□□□ Genesee County declares public health emergency (Michigan Radio)

•□□□□□□□□ Who's to blame for Flint's water crisis? Virginia Tech researcher points the finger at MDEQ (Michigan Radio)

•□□□□□□□□ Our Editorial: Get Flint residents drinkable water (Detroit News)

•□□□□□□□□ Efforts to get the lead out of Flint’s water awash in finger-pointing (Toledo Blade)

•□□□□□□□□ Public health emergency declared due to lead in Flint water (Associated Press)

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http://www.mlive.com/news/flint/index.ssf/2015/10/state_will_announce_flint_wate.html

State to announce Flint water action plan Friday at Kettering

By Ron Fonger | rfonger1@mlive.com The Flint Journal on October 01, 2015 at 8:12 PM, updated October 01, 2015 at 11:12 PM

FLINT, MI — Local, state and federal officials are set to announce a plan for addressing concerns with lead in Flint's drinking water at a news conference Friday, Oct. 2.

An advisory from the Michigan Department of Environmental Quality said leaders will announce the plan at 1:30 p.m. at Kettering University.

The news conference comes after weeks of worrisome news about rising levels of lead in the city's tap water, documented by researchers from Virginia Tech university and a study by a Hurley Medical Center doctor that showed the number of children in the city with elevated blood levels nearly doubled after the city started using the Flint River as its water source in 2014.

Brad Wurfel, director of communications for the DEQ, said Thursday, Oct. 1, that Gov. Rick Snyder cannot attend the news conference.

Snyder said earlier this week that he expected state officials to announce plans to deal with the lead in water issue by Friday, saying, "There are probably some things that weren't as fully understood when that switch was made."

The state oversees water quality in Flint, and state-appointed emergency managers were running city government when decisions were made not to negotiate a short-term agreement to continue buying Lake Huron water from Detroit and to instead use the river as a water source.

Although the city is not currently in violation of the Safe Drinking Water Act, bacteria, the level of total trihalomethanes and lead have been problems in the water system since then.

Among those scheduled to attend the news conference are Mayor Dayne Walling; Harvey Hollins, director of the state Office of Urban Initiatives; Dan Wyant, director of the Michigan DEQ; Nick Lyon, director of the Michigan Department of Health and Human Services; and Dr. Eden Wells, chief medical executive of the state Department of Health and Human Services, the news release said.

Wurfel would not discuss the plan in advance of the news conference, but officials in local, state and the federal government have called for a variety of actions in recent weeks.

Among them: Funding for home water filters, additional testing of city water and reconnection of Flint to the Detroit water system.

"We're looking forward to coming to Flint. We recognize lead is a concern in the city," Wurfel said.

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http://www.mlive.com/news/flint/index.ssf/2015/10/greater_flint_aclu_holds_meeti.html#incart_sto

Petition launched for EPA intervention in Flint water crisis

By Amanda Emery | aemery@mlive.com The Flint Journal Follow on Twitter on October 02, 2015 at 8:20 AM, updated October 02, 2015 at 8:21 AM

FLINT, MI -- As the American Civil Liberties Union of Michigan joined a petition urging an immediate federal response to Flint's water crisis, the Greater Flint chapter held its board meeting Thursday to update residents on Flint's water situation.

The petition urges the U.S. Environmental Protection Agency to order Flint to reconnect to the Detroit Water and Sewerage Department system, among other requests.

The board meeting was held Thursday, Oct. 1 at the IINN's Great Lakes

Center, 4800 South Saginaw Street in Flint. About 15 people attended the meeting as ACLU of Michigan investigative reporter Curt Guyette talked about the investigation into lead in the water and what's to come.

Woodside Church Pastor Deborah Conrad attended the meeting to get updates on the water situation. Conrad said she is looking to see what can be done to make it better.

"I've been following a lot of the reports, so it was helpful to put it in a context, to hear some new updates," Conrad said. "To hear some fiery rhetoric about the time for indictments, the time for holding people accountable. I worry that filing lawsuits will just drain the tax base of the state, or the city, or the county, but we need some individuals to be held accountable for their role as agents of government acting in individual capacities, frankly in their individual interests and harming the residents of the city."

Guyette said the ACLU was involved in helping coordinate and conduct the tests on residents' water in Flint. He said a partnership with Virginia Tech was born following the testing of water at the home of Flint resident LeeAnne Walters.

A number of groups from the Flint-area have signed on to the petition asking the EPA to take action that will decrease the danger to Flint residents' health from lead contamination in the drinking water.

A recent study by a Hurley Medical Center doctor found more children in Flint have elevated blood lead levels since Flint switched from the Detroit water system to using the Flint River as its primary water source in April 2014.

The groups include the Coalition for Clean Water, Concerned Pastors for Social Change, Water You Fighting For, Democracy Defense League Water Task Force, Flint Water Study Team, Michigan Nurses Association, NAACP - Michigan State Conference, Michigan Chapter of the National Conference of Black Lawyers, American Civil Liberties Union of Michigan, and the Natural Resources Defense Council.

Genesee County Commissioners Brenda Clack, Jamie Curtis and Bryant Nolden, along with Genesee County Health Officer Mark Valacak, held a news conference Thursday, Oct. 1, urging residents to not drink the city's water until it is checked for lead or they have installed an approved water filter.

The warning came just before an announcement that local, state and federal officials will announce a plan for addressing concerns with lead in Flint's drinking water at a news conference Friday, Oct. 2.

An advisory from the Michigan Department of Environmental Quality said leaders will announce the plan at 1:30 p.m. at Kettering University.

Guyette said the next move in the water saga will depend on what comes Friday.

"Well, a lot of that's going to depend on what the governor has to say," Guyette said, adding that there are more questions that need to be answered.

Frustrations have mounted since the water saga unfolded more than a year ago.

An order signed by Genesee County Circuit Court Judge Archie Hayman on Aug. 17, lowered water and sewer rates and halted the city from shutting off water to customers. Since then an average of 100 fewer customers are paying their water bills.

On Thursday during a news conference honoring the Flint Farmers' Market as one of the top six great public spaces on the American Planning Association's annual "Great Places in America" list a scuffle broke out between a water protestor and a market security guard.

City of Flint Spokesman Jason Lorenz said there were a couple of protestors at the market holding up signs. Lorenz said toward the end of the presentation some of the protestors began shouting.

One woman pulled out a bullhorn and security escorted the group out. Lorenz said that is when a scuffle ensued between the woman and the security guard. He said the woman was arrested on assault and battery charges.

In an effort to relieve the frustration and struggle for city residents, a water filter program has been put in place. Women and children receiving public assistance are on the top of the list to receive free water filters.

The announcement came Thursday that the United Way of Genesee County and the city have raised $105,000 from private and public sources to purchase 5,250 water filters for Flint residents.

The filter program announcement comes a week after the director of Hurley Medical Center's pediatric residency program warned in a study that the number of young children with elevated lead in their blood has doubled since the city changed its water source from Lake Huron to the Flint River.

Details on distribution of the filters will be communicated through the Genesee County Health Department Web site as well as a hotline that is in the process of being established.

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http://wmuk.org/post/residents-aclu-ask-epa-take-action-flint-water

Residents, ACLU Ask EPA to Take Action on Flint Water

Rick Pluta • 13 hours ago

(MPRN-Flint) The American Civil Liberties Union and some Flint residents are asking the federal government to step in to deal with the city's water crisis.

A complaint filed with the Environmental Protection Agency seeks an order for the city and the state to stop drawing water from the Flint River and re-connect with the Detroit water system.

The switch was ordered by a state-appointed emergency manager to save money. But the Flint River's water is highly corrosive, and caused lead to leach into the city's drinking water.

"There is no level of lead in water that is safe and it's having a devastating impact on the children in the city of Flint," said Michael Steinberg, an attorney with the ACLU. "In an attempt to save money, the emergency manager in Flint, acting in collusion with the state, provided unsafe drinking water to the residents of Flint, and the results have been catastrophic."

State and city officials are expected to outline the next plans to deal with the city's water crisis as soon as tomorrow.

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http://www.mlive.com/news/flint/index.ssf/2015/10/state_sen_ananich_sets_stage_f.html

Budget bill add-on awaits future state funds for Flint water

By Ron Fonger | rfonger1@mlive.com The Flint Journal on October 01, 2015 at 6:21 PM, updated October 01, 2015 at 6:22 PM

FLINT, MI -- A funding mechanism aimed at the state paying for measures to reduce lead levels in Flint's drinking water has been added to a budget bill in the Michigan Senate.

Jim Ananich, a Flint Democrat and Senate minority leader, successfully sought the placeholder of $100 to the Department of Environmental Quality for emergency water services for Flint.

The amount of the placeholder is expected to be changed after the true cost of the state's contribution is known, and details of that plan could be revealed as soon as Friday, Oct. 2.

"I worked with the administration (of Gov. Rick Snyder) and my colleagues on the Republican side to put a placeholder in place so that when we determine what resources are needed ... to fix the problem, we can go from there," Ananich said after the vote.

Gov. Rick Snyder earlier this week said he expected to announce those measures by Friday after saying "There are probably some things that weren't as fully understood (as should have been) when that switch (in Flint's water source) was made."

Flint changed its drinking water source from Lake Huron to Flint River in April 2014, a decision that came as the city was being run by a state-appointed emergency manager.

The city has struggled to effectively treat that river water since, and a recent study published by a Hurley Medical Center doctor says the number of children and infants with elevated blood lead levels since the change has nearly doubled.

Experiments by Virginia Tech university point to the source of Flint's water as the culprit, showing it is about 19 times more corrosive than the Lake Huron water that had been purchased from the city of Detroit for decades.

Virginia Tech researchers have said that corrosivity, interacting with lead in city service lines, has resulted in higher lead levels in water.

City officials have asked the state for assistance ranging from lead filters for faucets to help paying the Detroit Water and Sewerage Department to reconnect Flint to the DWSD water supply again until the Karegnondi Water Authority pipeline is completed.

The pipeline is expected to be available to service the city and Genesee County at some point in 2016.

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http://www.mlive.com/news/flint/index.ssf/2015/10/genesee_county_leaders_warn_do.html#incart

Don't drink Flint's water, Genesee County leaders warn

By Jiquanda Johnson | jjohns16@mlive.com The Flint Journal Follow on Twitter on October 01, 2015 at 6:13 PM, updated October 01, 2015 at 11:33 PM

GENESEE COUNTY, MI — Don't drink the water. That's one message Genesee County officials are pushing to residents who get their water supply from the city of Flint.

Genesee County Commissioners Brenda Clack, Jamie Curtis and Bryant Nolden, along with Genesee County Health Officer Mark Valacak, held a news conference Thursday, Oct. 1, urging residents to not drink the city's water until it is checked for lead or they have installed an approved water filter.

The commissioners declared a public health emergency and said they are hoping their declaration will move Gov. Rick Snyder to declare a state of emergency to handle Flint's water crisis.

"This falls directly on the doorstep of the governor," said Nolden. "If we look at what happened with going to the Flint River, this falls smack-dab on the emergency manager and the governor. Now, I think it's imperative that the state step up and help us fix this problem. We're just imploring that the state actively engage and look at ways we can connect to the Detroit River. ... This is a major health situation for this entire community."

Flint Mayor Dayne Walling issued a statement on the commissioners' declaration, saying Flint water customers should filter their water before drinking it.

Commissioners said they have issued various communications with Snyder's office but still haven't heard any word from the governor about the state's plans.

"Flint residents need safe, clean water, and they need accurate information about their health and their homes," said David Murray, Snyder's deputy press secretary, in a statement issued Thursday. "Gov. Snyder has an action plan that builds on existing efforts to help Flint city leaders and their residents. ... It addresses short- and long-term challenges and will keep city residents safe."

A batch of water filters is expected to arrive in the city sometime Friday, Oct. 2. The filters came from the combined efforts of the United Way, city of Flint, General Motors Foundation and a donation from the Making Our Children Smile Foundation. In total, $105,000 was donated to purchase 5,250 water filters — costing about $20 each — for Flint residents.

Valacak said he is hoping officials can start distributing the water filters as early as Friday afternoon, but they are going to focus on high-risk residents, including pregnant women and homes with children.

The county has partnered with the United Way and other community organizations, such as the University of Michigan-Flint, to help distribute the water filters. Valacak said they are looking to have details on distribution as soon as Friday morning, and updates can be found on the Health Department's website.

In addition, the Flint Department of Public Works is offering free water testing for Flint residents.

There are potentially 45,000 homes in the city that may have issues with lead. Clack, Curtis and Nolden represent the majority of the city on the county board. Nolden said his district is primarily in older areas of the city, where the infrastructure is older and residents may be at high risk for lead exposure.

On Tuesday, Sept. 29, the county issued an advisory warning the community of various health hazards associated with lead, including brain damage, stunted growth and hearing problems in children. Valacak said pregnant women and children 5 and younger are especially vulnerable.

Commissioners said they have reached out to Snyder in hopes of him declaring a state of emergency for the city but have not heard back from his office and also said his anonymous donation of 1,500 water filers nearly a month ago shows the governor's office knows there is a problem with Flint's water.

"To me, that's an admission of guilt," Curtis said. "You know there's a problem. ... We're not looking for anybody to point fingers and put the blame. ... We have lead in our water. Let's fix the problem."

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http://michiganradio.org/post/genesee-county-declares-public-health-emergency#stream/0

Genesee County declares public health emergency

Steve Carmody, Michigan Radio • 13 hours ago

Recent studies have shown blood lead levels in Flint children have doubled, even tripled in some parts of town, since the city started using the Flint River as its drinking water source.

So today Genesee County officials declared a public health emergency.

“We often use the phrase that children are our most valuable resource … then we got to begin acting like they are,” says County Commissioner Brenda Clack.

County commission chairman Jaime Curtis says lead levels in the city of Flint’s water are threatening people’s lives.

“We’ll take water. We’ll take filters. We’ll take money. We’ll take anything to keep our people safe,” Curtis said at a news conference.

The county hopes to start distributing thousands of water filters tomorrow.

The city of Flint issued a lead advisory last week.

Flint Mayor Dayne Walling issued a statement urging people in Flint to follow the guidelines in the county's public health declaration.

"I encourage the public to follow the guidance in the declaration to use a certified filter, have water testing done, and flush cold water for five minutes before drinking," says Walling.

Tomorrow, a "comprehensive" plan will be announced for dealing with Flint's water crisis.

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http://michiganradio.org/post/whos-blame-flints-water-crisis-virginia-tech-researcher-points-finger-mdeq#stream/0

Who's to blame for Flint's water crisis? Virginia Tech researcher points the finger at MDEQ

Mark Brush, Michigan Radio • 15 hours ago

Yesterday, Gov. Rick Snyder admitted that the decision to switch the city of Flint's water supply from Detroit's system over to the Flint River was not well planned.

“In terms of a mistake, what I would say is, is there are probably things that were not as fully understood as when that switch was made,” Snyder said.

At the direction of the state-appointed emergency manager, the city made the switch in April 2014, and problems with the drinking water started soon after.

People complained of brown water. There were boil-water advisories after the water was found to have E. coli contamination, and the drinking water also had unsafe levels of a chlorine byproduct (total trihalomethanes).

Fast forward almost a year and a half, and now we learn some residents in the city are being exposed to unsafe levels of lead in their drinking water. Pediatricians have concluded that the water in Flint is likely poisoning kids.

How could one of Michigan’s major cities be facing this problem?

Marc Edwards, a civil engineering professor from Virginia Tech University and a nationally renowned expert on water treatment, has put the blame squarely on the agency in charge of overseeing the safety of Flint’s drinking water, the Michigan Department of Environmental Quality.

Edwards published a blog post yesterday in which he writes:

Given MDEQ’s insistence that there is absolutely nothing wrong with Flint water, we have created a timeline that illustrates how MDEQ’s mistakes and deception created the Flint water crisis in the first place.

In his timeline, Edwards says the state failed to require that the city have a corrosion-control program in place when the city switched over to Flint River water.

“What we discovered to our shock was that they switched to a new water source that was obviously very corrosive, meaning it would eat up the lead pipe and iron pipe and essentially put the metals into the water, without controlling the corrosion,” Edwards says. “And this is a horrible idea in a city full of lead plumbing and lead pipe like Flint.”

Edwards says current estimates are that Flint has about 15,000 drinking water service lines made of lead.

How dangerous metals can get into drinking water

When water flows through copper and lead pipes, it can take up some of the metal and make the water unsafe. To control for this problem, the Environmental Protection Agency has what’s called a “lead and copper rule."

The purpose of the rule is listed in this “quick reference guide:"

Protect public health by minimizing lead (Pb) and copper (Cu) levels in drinking water, primarily by reducing water corrosivity. Pb and Cu enter drinking water mainly from corrosion of Pb and Cu containing plumbing materials.

To keep these metals from leaching into drinking water, municipal treatment plants can change the water chemistry to lower the water’s ability to corrode these pipes.

It’s called “corrosion control,” and Edwards says the Michigan Department of Environmental Quality covered up the fact that Flint had no corrosion control program in place.

“Before you switch to a new water source, six months to a year ahead of time, you are supposed to do laboratory experiments to determine the corrosivity of the water," says Edwards. "And the chemistry – the pH, the alkalinity, and the phosphate that you need to make sure that the lead stays on the pipes and out of the water."

Edwards contends that the new water system had to have a "corrosion control" plan in place so that "you're not doing an uncontrolled human experiment on a city's population."

According to emails obtained by the ACLU of Michigan, a state MDEQ official, Stephen Busch, responded to a request from EPA Region 5, the federal agency that oversees MDEQ, that the new water system in Flint did have a corrosion control program in place.

That exchange occurred in February of this year.

In April, according to the emails, the EPA Region 5 official later found out that was not true. Flint, it turns out, did not have a corrosion-control program in place.

From the emails:

Pat Cook [of MDEQ] has confirmed that following the disconnection from Detroit, Flint has not been operating any corrosion control treatment, which is very concerning given the likelihood of LSLs [lead service lines] in the city.

The state has maintained that it is not required under the EPA's lead and copper rule to have a corrosion-control plan in place until two rounds of testing are completed to determine what that plan looks like.

More from Michigan Radio's Lindsey Smith:

At face value, the EPA rules are clear, all water systems that serve more than 50,000 people must have some kind of corrosion control.

But when you switch water sources, there is apparently some room for interpretation.

In approving updates to this federal regulation in 2000, the EPA noted that “water systems need to make treatment changes, on occasion, to react to changing circumstances.”

In these cases, the rule does not “prevent a state from approving treatment changes,” but it’s not entirely clear if the state can approve having zero corrosion-control treatment.

As Edwards understands it, the EPA should have acted once the agency found out the state had no corrosion-control plan in place in Flint.

“If there was ever a case where [the] EPA should exert emergency powers and take primacy away from an agency, this is it,” he said.

Edwards says the city was also not conducting tests for lead and copper properly.

The point of the lead and copper rule is to make sure cities are sampling homes that are high risk – that is, homes serviced by lead pipe.

An ACLU of Michigan investigation found that the city did not know whether it was testing homes serviced by lead pipes.

In this video, Michael Glasgow, the utilities manager for Flint, indicated the city doesn't know where the lead pipes are.

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http://www.detroitnews.com/story/opinion/editorials/2015/10/01/editorial-flint-drinkable-water/73172092/

Our Editorial: Get Flint residents drinkable water

The Detroit News 11:32 p.m. EDT October 1, 2015

It doesn't matter if official reports say Flint's water is safe to drink. If residents turn on the tap and the water that comes out is oddly colored — or any color but clear — and stinky, they aren't going to drink it. Nor should they have to.

Flint water customers have been complaining about the smell, taste and color of their water since the spring of 2014, after the city cut its ties to the Detroit Water system and started treating and delivering its own supply.

The move saved Flint about $12 million a year, not an insignificant amount for a city that is under emergency financial management by the state of Michigan because of its shaky finances.

But cheaper water is no bargain if it is undrinkable. And residents of Flint are making a good case that the water the city provides is unfit for human consumption.

Water in the Detroit system is pulled from the depths of Lake Huron and has few contaminants that must be cleansed away at the treatment plant. Flint, for now at least, gets its water from the Flint River, which has endured a century or more of industrial and residential pollution.

Cleansing the river water is a more challenging task, and one Flint has yet to master. Residents have received a string of “boil water” notices due to mistakes made at the plant.

Most worrisome, however, is a new report that indicates elevated levels of lead in Flint children under the age of 5. Lead has a detrimental impact on development, and its increased presence in Flint’s kids should not be taken lightly.

The state Department of Environmental Quality insists the water has been thoroughly tested and is safe.

But, again, residents who see and smell foul water coming from their tap can be forgiven if they doubt those assurances.

Gov. Rick Snyder, working with an unnamed private donor, recently distributed about 1,500 filters to Flint water customers. The filters remove chemical compounds as well as lead.

That seems a good temporary solution at least. But thousands more are needed. State Sen. Jim Ananich, a Democrat from Flint, is asking the state to find the funds for 15,000 filters to distribute to all water system customers.

That is a reasonable request, and may bridge residents until next year, when the city is expected to connect to a new regional water pipeline from Lake Huron.

The other option is to reconnect to the Detroit water system.

Whatever choice is made, the solution should be put in place quickly. If the elevated lead levels discovered by pediatricians at the Hurley Medical Center are linked to the water supply, then this is a public health emergency that demands an urgent response.

Flint residents are paying for water, and have the right to expect it to be clean and drinkable. They should not have to spend additional money each month to purchase bottled water.

The decision to disconnect Flint from Detroit water lines was made under the state’s watch. The state has a responsibility to find a fix, and soon.

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https://www.toledoblade.com/JackLessenberry/2015/10/02/Efforts-to-get-the-lead-out-of-Flint-s-water-awash-in-finger-pointing.html

Efforts to get the lead out of Flint’s water awash in finger-pointing

BY JACK LESSENBERRY

BLADE OMBUDSMAN

FLINT, Mich. — Residents here haven’t yet marched on city hall or the governor’s office with pitchforks and blazing torches. But if they did, a lot of people might not blame them.

Flint has plenty of troubles: devastating job and population losses, plummeting property values, and a succession of emergency managers over the past four years.

The latest outrage is about water. Water that is discolored and foul-smelling. Water that at first had too much bacteria and then too much disinfectant.

And water that now seems to be causing lead poisoning in some of Flint's children. One woman, whose husband works as a policy planner for city government, said her spouse was "in tears as a new father himself when an irate resident came in with her premature, lead-poisoned baby."

Flint's water saga goes back to last year, when officials announced that their cash-strapped city could no longer afford to buy water from Detroit.

They announced they would join a new consortium, the Karegnondi Water Authority, which would supply purified water from Lake Huron. But Karegnondi's operation won't be up and running until sometime the following year.

So Flint officials announced that in the meantime, they would supply residents with treated water from the Flint River. But that turned into a disaster from almost day one. There were reports that the water was discolored and foul-tasting.

When tests showed that the water was dangerously contaminated with bacteria, including the infamous E. coli, the city pumped chlorine into the water.

That backfired too: In January, residents were told their water didn't meet federal safety standards, this time because of the chlorine.

While it may have killed the bacteria, it left the water with high levels of trihalomethane (TTHM), which is thought to increase the chances of developing cancer.

Average levels of TTHM didn't become acceptable until late this summer. Then Flint had a terrifying new problem: lead poisoning.

Last week, a study by physicians at Hurley Medical Center in Flint showed that the tap water in Flint has resulted in significantly elevated levels in the blood of the city's children. The scientists said the lead isn't actually in the water, but that the river water itself was more corrosive than the lake water Flint had been buying from Detroit.

A team from Virginia Tech tested samples last month from 300 homes, and found what it called "seriously" high levels of lead. The Hurley study found the percentage of children with seriously elevated lead levels had almost doubled.

That got politicians' attention. Mayor Dayne Walling advised residents to use only cold water, let it run from the tap for five minutes, and buy a filter for lead removal. The mayor also asked Gov. Rick Snyder to come up with $30 million to fix the water system and replace lead pipes.

City officials say about half the customers in Flint may be facing a problem, because the transmission lines connecting them to city water mains are made with lead.

The mayor's request for money from the governor wasn't good enough for the editorial board of the Flint Journal, the city's newspaper. When the news of lead poisoning surfaced, it ran an editorial saying "it's time to abandon the Flint River" as a drinking water source.

"We call on the governor to make this right for Flint citizens by brokering a return to Detroit water that won't bankrupt the city of Flint," the editorial said. It added: "Flint is in a crisis that was created in no small part by Snyder's hand-picked emergency manager, and it is Snyder's job to fix this mess."

Yet the governor has shown no signs of doing any such thing.

Pat Clawson, a longtime Flint area resident and former investigative reporter, thinks his city's plight should be a national scandal. "They are poisoning the people with this water — poisoning them, and that's what the doctors call it among themselves," he told me.

He puts the lion's share of the blame on Mayor Walling, who he says "was involved in planning and promoting the switch to Flint River water from the start."

But Mr. Clawson says there is plenty of blame to go around: "I believe there is criminal culpability on the part of public officials for causing and concealing this crisis."

He urged the federal and state governments to convene grand juries to investigate. Whether that will happen is anyone's guess. Meanwhile, the agony continues for the 99,000 folks who still live in the once-prosperous city of Flint.

Jack Lessenberry, a member of the journalism faculty at Wayne State University in Detroit and The Blade's ombudsman, writes on issues and people in Michigan.

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http://www.wtvm.com/story/30170601/public-health-emergency-declared-due-to-lead-in-flint-water

Public health emergency declared due to lead in Flint water

By COREY WILLIAMS, Associated Press

DETROIT (AP) - A public health emergency has been declared in cash-strapped Flint after tests showed the Michigan city's water supply is causing elevated levels of lead in children and following months of complaints about the smell and taste.

Gov. Rick Snyder this week questioned the switch to the Flint River from the Detroit water system in 2014, a decision that was made as a cost-saving move while a new regional pipeline is built to Lake Huron.

And on Thursday, the Genesee County health department declared a public health emergency, recommending that people not drink the water unless it has been filtered and tested to rule out elevated levels of lead. More steps will be announced Friday.

The problem: Although the river water is treated, it is corrosive and releasing lead from old plumbing in thousands of homes.

A coalition of residents and national groups petitioned the U.S. Environmental Protection Agency to order the state to reconnect Flint to Detroit water.

"As evidenced by the ongoing poisoning of the children of Flint, it's time for the EPA to take immediate action to provide us with a safe water source," LeeAnne Walters, a Flint parent and member of the Water You Fighting For group, said Thursday.

Flint, 60 miles north of Detroit, is among a number of communities that have complained about the rising cost of Detroit's water and sewerage service, which serves about 4 million people in southeastern Michigan. It opted to temporarily use the Flint River until a new line to Port Huron opens in 2016 at an annual cost of $12.5 million.

The decision to break away from the Detroit system was made while a Snyder-appointed emergency manager was running the long-struggling city, which had reached a financial crisis.

"In terms of a mistake, what I would say is we found there are probably things that weren't as fully understood when that switch was made," the governor said Wednesday.

His comments marked a significant shift. In July, a spokesman for the state's Department of Environmental Quality, Brad Wurfel, recommended home tests but added: "Anyone who is concerned about lead in the drinking water in Flint can relax."

Residents are unhappy with the taste, smell and appearance of water from the Flint River and have reported rashes, hair loss and other health concerns that they attribute to it. A General Motors plant stopped using the water because it was causing excessive rust.

Despite the complaints, city officials had said state tests showed the water met federal safety guidelines.

But in September, Virginia Tech researchers released a report saying Flint's water was creating a health threat in old homes that have lead pipes or pipes fused with lead solder. And doctors last week reported high levels of lead in local children's blood samples, also blaming water pipes.

Flint officials say they know which homes have risky pipes but that the information is on about 45,000 index cards and difficult to retrieve.

The city is now telling residents to use only cold water for drinking, cooking and making baby formula, and recommending they use the certified filters. The General Motors Foundation, the local United Way and others have given at least $105,000 to buy filters for 5,000 residents.

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Jeff Kelley
Director, Office of External Communications
U.S. EPA Region 5
ph: 312-353-1159

To: Hedman, Susan[hedman.susan@epa.gov]
From: Giles-AA, Cynthia
Sent: Fri 10/2/2015 3:11:25 PM
Subject: RE: Flint water clips for the morning of Oct. 2

Wow – lots of local coverage. Thanks for looping me in.

From: Hedman, Susan
Sent: Friday, October 02, 2015 9:35 AM
To: Giles-AA, Cynthia
Subject: Fwd: Flint water clips for the morning of Oct. 2

FYI

Sent from my iPhone

Begin forwarded message:

> **From:** "Hedman, Susan" <hedman.susan@epa.gov>
> **Date:** October 2, 2015 at 8:22:40 AM CDT
> **To:** "Meiburg, Stan" <Meiburg.Stan@epa.gov>, "Rupp, Mark" <Rupp.Mark@epa.gov>, "Fritz, Matthew" <Fritz.Matthew@epa.gov>, "Vaught, Laura" <Vaught.Laura@epa.gov>, "Grevatt, Peter" <Grevatt.Peter@epa.gov>, "Burke, Thomas" <Burke.Thomas@epa.gov>, "Kopocis, Ken" <Kopocis.Ken@epa.gov>, "Harrison, Melissa" <Harrison.Melissa@epa.gov>, "Reynolds, Thomas" <Reynolds.Thomas@epa.gov>
> **Subject: Fwd: Flint water clips for the morning of Oct. 2**
>
> Sent from my iPhone
>
> Begin forwarded message:
>
>> **From:** "Kelley, Jeff" <kelley.jeff@epa.gov>
>> **Date:** October 2, 2015 at 8:20:08 AM CDT
>> **To:** "Hedman, Susan" <hedman.susan@epa.gov>, "Kaplan, Robert" <kaplan.robert@epa.gov>, "Hyde, Tinka" <hyde.tinka@epa.gov>
>> **Cc:** "Rowan, Anne" <rowan.anne@epa.gov>, "Cassell, Peter" <cassell.peter@epa.gov>, "Beckmann, Ronna Erin" <beckmann.ronna@epa.gov>, "Harrison, Melissa" <Harrison.Melissa@epa.gov>, "Abrams, Dan" <Abrams.Dan@epa.gov>, "Poy, Thomas" <poy.thomas@epa.gov>
>> **Subject: Flint water clips for the morning of Oct. 2**

•□□□□□□□□ State to announce Flint water action plan Friday at Kettering (Flint Journal)

•□□□□□□□□ Petition launched for EPA intervention in Flint water crisis (Flint Journal)

•□□□□□□□□ Residents, ACLU Ask EPA to Take Action on Flint Water (Michigan Public Radio Network)

•□□□□□□□□ Budget bill add-on awaits future state funds for Flint water (Flint Journal)

•□□□□□□□□ Don't drink Flint's water, Genesee County leaders warn (Flint Journal)

•□□□□□□□□ Genesee County declares public health emergency (Michigan Radio)

•□□□□□□□□ Who's to blame for Flint's water crisis? Virginia Tech researcher points the finger at MDEQ (Michigan Radio)

•□□□□□□□□ Our Editorial: Get Flint residents drinkable water (Detroit News)

•□□□□□□□□ Efforts to get the lead out of Flint's water awash in finger-pointing (Toledo Blade)

•□□□□□□□□ Public health emergency declared due to lead in Flint water (Associated Press)

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http://www.mlive.com/news/flint/index.ssf/2015/10/state_will_announce_flint_wate.html

State to announce Flint water action plan Friday at Kettering

By Ron Fonger | rfonger1@mlive.com The Flint Journal on October 01, 2015 at 8:12 PM, updated October 01, 2015 at 11:12 PM

FLINT, MI — Local, state and federal officials are set to announce a plan for addressing concerns with lead in Flint's drinking water at a news conference Friday, Oct. 2.

An advisory from the Michigan Department of Environmental Quality said leaders will announce the plan at 1:30 p.m. at Kettering University.

The news conference comes after weeks of worrisome news about rising levels of lead in the city's tap water, documented by researchers from Virginia Tech university and a study by a Hurley Medical Center doctor that showed the number of children in the city with elevated blood levels nearly doubled after the city started using the Flint River as its water source in 2014.

Brad Wurfel, director of communications for the DEQ, said Thursday, Oct. 1, that Gov. Rick Snyder cannot attend the news conference.

Snyder said earlier this week that he expected state officials to announce plans to deal with the lead in water issue by Friday, saying, "There are probably some things that weren't as fully understood when that switch was made."

The state oversees water quality in Flint, and state-appointed emergency managers were running city government when decisions were made not to negotiate a short-term agreement to continue buying Lake Huron water from Detroit and to instead use the river as a water source.

Although the city is not currently in violation of the Safe Drinking Water Act, bacteria, the level of total trihalomethanes and lead have been problems in the water system since then.

Among those scheduled to attend the news conference are Mayor Dayne Walling; Harvey Hollins, director of the state Office of Urban Initiatives; Dan

Wyant, director of the Michigan DEQ; Nick Lyon, director of the Michigan Department of Health and Human Services; and Dr. Eden Wells, chief medical executive of the state Department of Health and Human Services, the news release said.

Wurfel would not discuss the plan in advance of the news conference, but officials in local, state and the federal government have called for a variety of actions in recent weeks.

Among them: Funding for home water filters, additional testing of city water and reconnection of Flint to the Detroit water system.

"We're looking forward to coming to Flint. We recognize lead is a concern in the city," Wurfel said.

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http://www.mlive.com/news/flint/index.ssf/2015/10/greater_flint_aclu_holds_meeti.html#incart_sto

Petition launched for EPA intervention in Flint water crisis

By Amanda Emery | aemery@mlive.com The Flint Journal Follow on Twitter on October 02, 2015 at 8:20 AM, updated October 02, 2015 at 8:21 AM

FLINT, MI -- As the American Civil Liberties Union of Michigan joined a petition urging an immediate federal response to Flint's water crisis, the Greater Flint chapter held its board meeting Thursday to update residents on Flint's water situation.

The petition urges the U.S. Environmental Protection Agency to order Flint to reconnect to the Detroit Water and Sewerage Department system, among other requests.

The board meeting was held Thursday, Oct. 1 at the IINN's Great Lakes Center, 4800 South Saginaw Street in Flint. About 15 people attended the meeting as ACLU of Michigan investigative reporter Curt Guyette talked about the investigation into lead in the water and what's to come.

Woodside Church Pastor Deborah Conrad attended the meeting to get updates on the water situation. Conrad said she is looking to see what can be done to make it better.

"I've been following a lot of the reports, so it was helpful to put it in a context, to hear some new updates," Conrad said. "To hear some fiery rhetoric about the time for indictments, the time for holding people accountable. I worry that filing lawsuits will just drain the tax base of the state, or the city, or the county, but we need some individuals to be held accountable for their role as agents of government acting in individual capacities, frankly in their individual interests and harming the residents of the city."

Guyette said the ACLU was involved in helping coordinate and conduct the tests on residents' water in Flint. He said a partnership with Virginia Tech was born following the testing of water at the home of Flint resident LeeAnne Walters.

A number of groups from the Flint-area have signed on to the petition asking the EPA to take action that will decrease the danger to Flint residents' health from lead contamination in the drinking water.

A recent study by a Hurley Medical Center doctor found more children in Flint have elevated blood lead levels since Flint switched from the Detroit water system to using the Flint River as its primary water source in April 2014.

The groups include the Coalition for Clean Water, Concerned Pastors for Social Change, Water You Fighting For, Democracy Defense League Water Task Force, Flint Water Study Team, Michigan Nurses Association, NAACP - Michigan State Conference, Michigan Chapter of the National Conference of Black Lawyers, American Civil Liberties Union of Michigan, and the Natural Resources Defense Council.

Genesee County Commissioners Brenda Clack, Jamie Curtis and Bryant Nolden, along with Genesee County Health Officer Mark Valacak, held a news conference Thursday, Oct. 1, urging residents to not drink the city's water until it is checked for lead or they have installed an approved water filter.

The warning came just before an announcement that local, state and federal officials will announce a plan for addressing concerns with lead in Flint's drinking water at a news conference Friday, Oct. 2.

An advisory from the Michigan Department of Environmental Quality said leaders will announce the plan at 1:30 p.m. at Kettering University.

Guyette said the next move in the water saga will depend on what comes Friday.

"Well, a lot of that's going to depend on what the governor has to say," Guyette said, adding that there are more questions that need to be answered.

Frustrations have mounted since the water saga unfolded more than a year ago.

An order signed by Genesee County Circuit Court Judge Archie Hayman on Aug. 17, lowered water and sewer rates and halted the city from shutting off water to customers. Since then an average of 100 fewer customers are paying their water bills.

On Thursday during a news conference honoring the Flint Farmers' Market as one of the top six great public spaces on the American Planning Association's annual "Great Places in America" list a scuffle broke out between a water protestor and a market security guard.

City of Flint Spokesman Jason Lorenz said there were a couple of protestors at the market holding up signs. Lorenz said toward the end of the presentation some of the protestors began shouting.

One woman pulled out a bullhorn and security escorted the group out. Lorenz said that is when a scuffle ensued between the woman and the security guard. He said the woman was arrested on assault and battery charges.

In an effort to relieve the frustration and struggle for city residents, a water filter program has been put in place. Women and children receiving public assistance are on the top of the list to receive free water filters.

The announcement came Thursday that the United Way of Genesee County and the city have raised $105,000 from private and public sources to purchase 5,250 water filters for Flint residents.

The filter program announcement comes a week after the director of Hurley Medical Center's pediatric residency program warned in a study that the number of young children with elevated lead in their blood has doubled since the city changed its water source from Lake Huron to the Flint River.

Details on distribution of the filters will be communicated through the Genesee County Health Department Web site as well as a hotline that is in the process of being established.

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http://wmuk.org/post/residents-aclu-ask-epa-take-action-flint-water

Residents, ACLU Ask EPA to Take Action on Flint Water

Rick Pluta • 13 hours ago

(MPRN-Flint) The American Civil Liberties Union and some Flint residents are asking the federal government to step in to deal with the city's water crisis.

A complaint filed with the Environmental Protection Agency seeks an order for the city and the state to stop drawing water from the Flint River and re-connect with the Detroit water system.

The switch was ordered by a state-appointed emergency manager to save money. But the Flint River's water is highly corrosive, and caused lead to leach into the city's drinking water.

"There is no level of lead in water that is safe and it's having a devastating impact on the children in the city of Flint," said Michael Steinberg, an attorney with the ACLU. "In an attempt to save money, the emergency manager in Flint, acting in collusion with the state, provided unsafe drinking water to the residents of Flint, and the results have been catastrophic."

State and city officials are expected to outline the next plans to deal with the city's water crisis as soon as tomorrow.

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http://www.mlive.com/news/flint/index.ssf/2015/10/state_sen_ananich_sets_stage_f.html

Budget bill add-on awaits future state funds for Flint water

By Ron Fonger | rfonger1@mlive.com The Flint Journal on October 01, 2015 at 6:21 PM, updated October 01, 2015 at 6:22 PM

FLINT, MI -- A funding mechanism aimed at the state paying for measures to reduce lead levels in Flint's drinking water has been added to a budget bill in the Michigan Senate.

Jim Ananich, a Flint Democrat and Senate minority leader, successfully sought the placeholder of $100 to the Department of Environmental Quality for emergency water services for Flint.

The amount of the placeholder is expected to be changed after the true cost of the state's contribution is known, and details of that plan could be revealed as soon as Friday, Oct. 2.

"I worked with the administration (of Gov. Rick Snyder) and my colleagues on the Republican side to put a placeholder in place so that when we determine what resources are needed ... to fix the problem, we can go from there," Ananich said after the vote.

Gov. Rick Snyder earlier this week said he expected to announce those measures by Friday after saying "There are probably some things that weren't as fully understood (as should have been) when that switch (in Flint's water source) was made."

Flint changed its drinking water source from Lake Huron to Flint River in April 2014, a decision that came as the city was being run by a state-appointed emergency manager.

The city has struggled to effectively treat that river water since, and a recent study published by a Hurley Medical Center doctor says the number of children and infants with elevated blood lead levels since the change has nearly doubled.

Experiments by Virginia Tech university point to the source of Flint's water as the culprit, showing it is about 19 times more corrosive than the Lake Huron water that had been purchased from the city of Detroit for decades.

Virginia Tech researchers have said that corrosivity, interacting with lead in city service lines, has resulted in higher lead levels in water.

City officials have asked the state for assistance ranging from lead filters for faucets to help paying the Detroit Water and Sewerage Department to reconnect Flint to the DWSD water supply again until the Karegnondi Water Authority pipeline is completed.

The pipeline is expected to be available to service the city and Genesee County at some point in 2016.

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http://www.mlive.com/news/flint/index.ssf/2015/10/genesee_county_leaders_warn_do.html#incart

Don't drink Flint's water, Genesee County leaders warn

By Jiquanda Johnson | jjohns16@mlive.com The Flint Journal Follow on Twitter on October 01, 2015 at 6:13 PM, updated October 01, 2015 at 11:33 PM

GENESEE COUNTY, MI — Don't drink the water. That's one message Genesee County officials are pushing to residents who get their water supply from the city of Flint.

Genesee County Commissioners Brenda Clack, Jamie Curtis and Bryant Nolden, along with Genesee County Health Officer Mark Valacak, held a news conference Thursday, Oct. 1, urging residents to not drink the city's water until it is checked for lead or they have installed an approved water filter.

The commissioners declared a public health emergency and said they are hoping their declaration will move Gov. Rick Snyder to declare a state of emergency to handle Flint's water crisis.

"This falls directly on the doorstep of the governor," said Nolden. "If we look at what happened with going to the Flint River, this falls smack-dab on the emergency manager and the governor. Now, I think it's imperative that the state step up and help us fix this problem. We're just imploring that the state actively engage and look at ways we can connect to the Detroit River. ... This is a major health situation for this entire community."

Flint Mayor Dayne Walling issued a statement on the commissioners' declaration, saying Flint water customers should filter their water before drinking it.

Commissioners said they have issued various communications with Snyder's office but still haven't heard any word from the governor about the state's plans.

"Flint residents need safe, clean water, and they need accurate information about their health and their homes," said David Murray, Snyder's deputy press secretary, in a statement issued Thursday. "Gov. Snyder has an action plan that builds on existing efforts to help Flint city leaders and their residents. ... It addresses short- and long-term challenges and will keep city residents safe."

A batch of water filters is expected to arrive in the city sometime Friday, Oct. 2. The filters came from the combined efforts of the United Way, city of Flint, General Motors Foundation and a donation from the Making Our Children Smile Foundation. In total, $105,000 was donated to purchase 5,250 water filters — costing about $20 each — for Flint residents.

Valacak said he is hoping officials can start distributing the water filters as early as Friday afternoon, but they are going to focus on high-risk residents, including pregnant women and homes with children.

The county has partnered with the United Way and other community organizations, such as the University of Michigan-Flint, to help distribute the water filters. Valacak said they are looking to have details on distribution as soon as Friday morning, and updates can be found on the Health Department's website.

In addition, the Flint Department of Public Works is offering free water testing for Flint residents.

There are potentially 45,000 homes in the city that may have issues with lead. Clack, Curtis and Nolden represent the majority of the city on the county board. Nolden said his district is primarily in older areas of the city, where the infrastructure is older and residents may be at high risk for lead exposure.

On Tuesday, Sept. 29, the county issued an advisory warning the community of various health hazards associated with lead, including brain damage, stunted growth and hearing problems in children. Valacak said pregnant women and children 5 and younger are especially vulnerable.

Commissioners said they have reached out to Snyder in hopes of him declaring a state of emergency for the city but have not heard back from his office and also said his anonymous donation of 1,500 water filers nearly a month ago shows the governor's office knows there is a problem with Flint's water.

"To me, that's an admission of guilt," Curtis said. "You know there's a problem. ... We're not looking for anybody to point fingers and put the blame. ... We have lead in our water. Let's fix the problem."

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http://michiganradio.org/post/genesee-county-declares-public-health-emergency#stream/0

Genesee County declares public health emergency

Steve Carmody, Michigan Radio • 13 hours ago

Recent studies have shown blood lead levels in Flint children have doubled, even tripled in some parts of town, since the city started using the Flint River as its drinking water source.

So today Genesee County officials declared a public health emergency.

“We often use the phrase that children are our most valuable resource … then we got to begin acting like they are,” says County Commissioner Brenda Clack.

County commission chairman Jaime Curtis says lead levels in the city of Flint’s water are threatening people’s lives.

“We’ll take water. We’ll take filters. We’ll take money. We’ll take anything to keep our people safe,” Curtis said at a news conference.

The county hopes to start distributing thousands of water filters tomorrow.

The city of Flint issued a lead advisory last week.

Flint Mayor Dayne Walling issued a statement urging people in Flint to follow the guidelines in the county’s public health declaration.

"I encourage the public to follow the guidance in the declaration to use a certified filter, have water testing done, and flush cold water for five minutes before drinking,” says Walling.

Tomorrow, a "comprehensive" plan will be announced for dealing with Flint’s water crisis.

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http://michiganradio.org/post/whos-blame-flints-water-crisis-virginia-tech-researcher-points-finger-mdeq#stream/0

Who's to blame for Flint's water crisis? Virginia Tech researcher points the finger at MDEQ

Mark Brush, Michigan Radio • 15 hours ago

Yesterday, Gov. Rick Snyder admitted that the decision to switch the city of Flint's water supply from Detroit's system over to the Flint River was not well planned.

“In terms of a mistake, what I would say is, is there are probably things that were not as fully understood as when that switch was made,” Snyder said.

At the direction of the state-appointed emergency manager, the city made the switch in April 2014, and problems with the drinking water started soon after.

People complained of brown water. There were boil-water advisories after the water was found to have E. coli contamination, and the drinking water also had unsafe levels of a chlorine byproduct (total trihalomethanes).

Fast forward almost a year and a half, and now we learn some residents in the city are being exposed to unsafe levels of lead in their drinking water. Pediatricians have concluded that the water in Flint is likely poisoning kids.

How could one of Michigan’s major cities be facing this problem?

Marc Edwards, a civil engineering professor from Virginia Tech University and a nationally renowned expert on water treatment, has put the blame squarely on the agency in charge of overseeing the safety of Flint’s drinking water, the Michigan Department of Environmental Quality.

Edwards published a blog post yesterday in which he writes:

Given MDEQ’s insistence that there is absolutely nothing wrong with Flint water, we have created a timeline that illustrates how MDEQ's mistakes and deception created the Flint water crisis in the first place.

In his timeline, Edwards says the state failed to require that the city have a corrosion-control program in place when the city switched over to Flint River water.

"What we discovered to our shock was that they switched to a new water source that was obviously very corrosive, meaning it would eat up the lead pipe and iron pipe and essentially put the metals into the water, without controlling the corrosion," Edwards says. "And this is a horrible idea in a city full of lead plumbing and lead pipe like Flint."

Edwards says current estimates are that Flint has about 15,000 drinking water service lines made of lead.

How dangerous metals can get into drinking water

When water flows through copper and lead pipes, it can take up some of the metal and make the water unsafe. To control for this problem, the Environmental Protection Agency has what's called a "lead and copper rule."

The purpose of the rule is listed in this "quick reference guide:"

Protect public health by minimizing lead (Pb) and copper (Cu) levels in drinking water, primarily by reducing water corrosivity. Pb and Cu enter drinking water mainly from corrosion of Pb and Cu containing plumbing materials.

To keep these metals from leaching into drinking water, municipal treatment plants can change the water chemistry to lower the water's ability to corrode these pipes.

It’s called “corrosion control,” and Edwards says the Michigan Department of Environmental Quality covered up the fact that Flint had no corrosion control program in place.

“Before you switch to a new water source, six months to a year ahead of time, you are supposed to do laboratory experiments to determine the corrosivity of the water,” says Edwards. “And the chemistry – the pH, the alkalinity, and the phosphate that you need to make sure that the lead stays on the pipes and out of the water.”

Edwards contends that the new water system had to have a “corrosion control” plan in place so that “you’re not doing an uncontrolled human experiment on a city’s population.”

According to emails obtained by the ACLU of Michigan, a state MDEQ official, Stephen Busch, responded to a request from EPA Region 5, the federal agency that oversees MDEQ, that the new water system in Flint did have a corrosion control program in place.

That exchange occurred in February of this year.

In April, according to the emails, the EPA Region 5 official later found out that was not true. Flint, it turns out, did not have a corrosion-control program in place.

From the emails:

Pat Cook [of MDEQ] has confirmed that following the disconnection from Detroit, Flint has not been operating any corrosion control treatment, which is very concerning given the likelihood of LSLs [lead service lines] in the city.

The state has maintained that it is not required under the EPA's lead and copper rule to have a corrosion-control plan in place until two rounds of testing are completed to determine what that plan looks like.

More from Michigan Radio's Lindsey Smith:

At face value, the EPA rules are clear, all water systems that serve more than 50,000 people must have some kind of corrosion control.

But when you switch water sources, there is apparently some room for interpretation.

In approving updates to this federal regulation in 2000, the EPA noted that "water systems need to make treatment changes, on occasion, to react to changing circumstances."

In these cases, the rule does not "prevent a state from approving treatment changes," but it's not entirely clear if the state can approve having zero corrosion-control treatment.

As Edwards understands it, the EPA should have acted once the agency found out the state had no corrosion-control plan in place in Flint.

"If there was ever a case where [the] EPA should exert emergency powers and take primacy away from an agency, this is it," he said.

Edwards says the city was also not conducting tests for lead and copper properly.

The point of the lead and copper rule is to make sure cities are sampling homes that are high risk – that is, homes serviced by lead pipe.

An ACLU of Michigan investigation found that the city did not know whether it was testing homes serviced by lead pipes.

In this video, Michael Glasgow, the utilities manager for Flint, indicated the city doesn't know where the lead pipes are.

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http://www.detroitnews.com/story/opinion/editorials/2015/10/01/editorial-flint-drinkable-water/73172092/

Our Editorial: Get Flint residents drinkable water

The Detroit News 11:32 p.m. EDT October 1, 2015

It doesn’t matter if official reports say Flint’s water is safe to drink. If residents turn on the tap and the water that comes out is oddly colored — or any color but clear — and stinky, they aren’t going to drink it. Nor should they have to.

Flint water customers have been complaining about the smell, taste and color of their water since the spring of 2014, after the city cut its ties to the Detroit Water system and started treating and delivering its own supply.

The move saved Flint about $12 million a year, not an insignificant amount for a city that is under emergency financial management by the state of Michigan because of its shaky finances.

But cheaper water is no bargain if it is undrinkable. And residents of Flint are making a good case that the water the city provides is unfit for human consumption.

Water in the Detroit system is pulled from the depths of Lake Huron and has few contaminants that must be cleansed away at the treatment plant. Flint, for now at least, gets its water from the Flint River, which has endured a century or more of industrial and residential pollution.

Cleansing the river water is a more challenging task, and one Flint has yet to master. Residents have received a string of "boil water" notices due to mistakes made at the plant.

Most worrisome, however, is a new report that indicates elevated levels of lead in Flint children under the age of 5. Lead has a detrimental impact on development, and its increased presence in Flint's kids should not be taken lightly.

The state Department of Environmental Quality insists the water has been thoroughly tested and is safe.

But, again, residents who see and smell foul water coming from their tap can be forgiven if they doubt those assurances.

Gov. Rick Snyder, working with an unnamed private donor, recently distributed about 1,500 filters to Flint water customers. The filters remove chemical compounds as well as lead.

That seems a good temporary solution at least. But thousands more are needed. State Sen. Jim Ananich, a Democrat from Flint, is asking the state to find the funds for 15,000 filters to distribute to all water system customers.

That is a reasonable request, and may bridge residents until next year, when the city is expected to connect to a new regional water pipeline from Lake Huron.

The other option is to reconnect to the Detroit water system.

Whatever choice is made, the solution should be put in place quickly. If the elevated lead levels discovered by pediatricians at the Hurley Medical Center are linked to the water supply, then this is a public health emergency that demands an urgent response.

Flint residents are paying for water, and have the right to expect it to be clean and drinkable. They should not have to spend additional money each month to purchase bottled water.

The decision to disconnect Flint from Detroit water lines was made under the state's watch. The state has a responsibility to find a fix, and soon.

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https://www.toledoblade.com/JackLessenberry/2015/10/02/Efforts-to-get-the-lead-out-of-Flint-s-water-awash-in-finger-pointing.html

Efforts to get the lead out of Flint's water awash in finger-pointing

BY JACK LESSENBERRY

BLADE OMBUDSMAN

FLINT, Mich. — Residents here haven't yet marched on city hall or the governor's office with pitchforks and blazing torches. But if they did, a lot of people might not blame them.

Flint has plenty of troubles: devastating job and population losses, plummeting property values, and a succession of emergency managers over the past four years.

The latest outrage is about water. Water that is discolored and foul-smelling. Water that at first had too much bacteria and then too much disinfectant.

And water that now seems to be causing lead poisoning in some of Flint's children. One woman, whose husband works as a policy planner for city government, said her spouse was "in tears as a new father himself when an irate resident came in with her premature, lead-poisoned baby."

Flint's water saga goes back to last year, when officials announced that their cash-strapped city could no longer afford to buy water from Detroit.

They announced they would join a new consortium, the Karegnondi Water Authority, which would supply purified water from Lake Huron. But Karegnondi's operation won't be up and running until sometime the following year.

So Flint officials announced that in the meantime, they would supply residents with treated water from the Flint River. But that turned into a disaster from almost day one. There were reports that the water was discolored and foul-tasting.

When tests showed that the water was dangerously contaminated with bacteria, including the infamous E. coli, the city pumped chlorine into the water.

That backfired too: In January, residents were told their water didn't meet federal safety standards, this time because of the chlorine.

While it may have killed the bacteria, it left the water with high levels of trihalomethane (TTHM), which is thought to increase the chances of developing cancer.

Average levels of TTHM didn't become acceptable until late this summer. Then Flint had a terrifying new problem: lead poisoning.

Last week, a study by physicians at Hurley Medical Center in Flint showed that the tap water in Flint has resulted in significantly elevated levels in the blood of the city's children. The scientists said the lead isn't actually in the water, but that the river water itself was more corrosive than the lake water Flint had been buying from Detroit.

A team from Virginia Tech tested samples last month from 300 homes, and found what it called "seriously" high levels of lead. The Hurley study found the percentage of children with seriously elevated lead levels had almost doubled.

That got politicians' attention. Mayor Dayne Walling advised residents to use only cold water, let it run from the tap for five minutes, and buy a filter for lead removal. The mayor also asked Gov. Rick Snyder to come up with $30 million to fix the water system and replace lead pipes.

City officials say about half the customers in Flint may be facing a problem, because the transmission lines connecting them to city water mains are made with lead.

The mayor's request for money from the governor wasn't good enough for the editorial board of the Flint Journal, the city's newspaper. When the news of lead poisoning surfaced, it ran an editorial saying "it's time to abandon the Flint River" as a drinking water source.

"We call on the governor to make this right for Flint citizens by brokering a return to Detroit water that won't bankrupt the city of Flint," the editorial said. It added: "Flint is in a crisis that was created in no small part by Snyder's hand-picked emergency manager, and it is Snyder's job to fix this mess."

Yet the governor has shown no signs of doing any such thing.

Pat Clawson, a longtime Flint area resident and former investigative reporter, thinks his city's plight should be a national scandal. "They are poisoning the people with this water — poisoning them, and that's what the doctors call it among themselves," he told me.

He puts the lion's share of the blame on Mayor Walling, who he says "was involved in planning and promoting the switch to Flint River water from the start."

But Mr. Clawson says there is plenty of blame to go around: "I believe there is criminal culpability on the part of public officials for causing and concealing this crisis."

He urged the federal and state governments to convene grand juries to investigate. Whether that will happen is anyone's guess. Meanwhile, the agony continues for the 99,000 folks who still live in the once-prosperous city of Flint.

Jack Lessenberry, a member of the journalism faculty at Wayne State University in Detroit and The Blade's ombudsman, writes on issues and people in Michigan.

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http://www.wtvm.com/story/30170601/public-health-emergency-declared-due-to-lead-in-flint-water

Public health emergency declared due to lead in Flint water

By COREY WILLIAMS, Associated Press

DETROIT (AP) - A public health emergency has been declared in cash-strapped Flint after tests showed the Michigan city's water supply is causing elevated levels of lead in children and following months of complaints about the smell and taste.

Gov. Rick Snyder this week questioned the switch to the Flint River from the Detroit water system in 2014, a decision that was made as a cost-saving move while a new regional pipeline is built to Lake Huron.

And on Thursday, the Genesee County health department declared a public health emergency, recommending that people not drink the water unless it has been filtered and tested to rule out elevated levels of lead. More steps will be announced Friday.

The problem: Although the river water is treated, it is corrosive and releasing lead from old plumbing in thousands of homes.

A coalition of residents and national groups petitioned the U.S. Environmental Protection Agency to order the state to reconnect Flint to Detroit water.

"As evidenced by the ongoing poisoning of the children of Flint, it's time for the

EPA to take immediate action to provide us with a safe water source," LeeAnne Walters, a Flint parent and member of the Water You Fighting For group, said Thursday.

Flint, 60 miles north of Detroit, is among a number of communities that have complained about the rising cost of Detroit's water and sewerage service, which serves about 4 million people in southeastern Michigan. It opted to temporarily use the Flint River until a new line to Port Huron opens in 2016 at an annual cost of $12.5 million.

The decision to break away from the Detroit system was made while a Snyder-appointed emergency manager was running the long-struggling city, which had reached a financial crisis.

"In terms of a mistake, what I would say is we found there are probably things that weren't as fully understood when that switch was made," the governor said Wednesday.

His comments marked a significant shift. In July, a spokesman for the state's Department of Environmental Quality, Brad Wurfel, recommended home tests but added: "Anyone who is concerned about lead in the drinking water in Flint can relax."

Residents are unhappy with the taste, smell and appearance of water from the Flint River and have reported rashes, hair loss and other health concerns that they attribute to it. A General Motors plant stopped using the water because it was causing excessive rust.

Despite the complaints, city officials had said state tests showed the water met federal safety guidelines.

But in September, Virginia Tech researchers released a report saying Flint's water was creating a health threat in old homes that have lead pipes or pipes fused with lead solder. And doctors last week reported high levels of lead in local children's blood samples, also blaming water pipes.

Flint officials say they know which homes have risky pipes but that the information is on about 45,000 index cards and difficult to retrieve.

The city is now telling residents to use only cold water for drinking, cooking and making baby formula, and recommending they use the certified filters. The General Motors Foundation, the local United Way and others have given at least $105,000 to buy filters for 5,000 residents.

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To: Hedman, Susan[hedman.susan@epa.gov]; Kaplan, Robert[kaplan.robert@epa.gov]; Hyde, Tinka[hyde.tinka@epa.gov]
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From: Kelley, Jeff
Sent: Fri 10/2/2015 3:43:21 PM
Subject: RE: Flint water clips for the morning of Oct. 2

Here are a couple more clips of note from this morning …

http://www.mlive.com/news/flint/index.ssf/2015/10/watch_live_state_to_reveal_fli.html

Watch live: State to reveal Flint water action plan after lead advisories

By Ron Fonger | rfonger1@mlive.com The Flint Journal

on October 02, 2015 at 11:08 AM, updated October 02, 2015 at 11:24 AM

FLINT, MI -- An action plan for addressing concerns about lead in Flint's drinking water is expected to be outlined by local, state and federal officials at a news conference today.

The Flint Journal-MLive is planning to livestream the news conference in this post. It's expected to start at about 1:30 p.m.

The plan comes after weeks of worrisome news about rising levels of lead in the city's tap water since Flint switched to using the Flint River as its primary source in April 2014.

Gov. Rick Snyder cannot attend the news conference, according to state officials.

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http://michiganradio.org/post/flints-water-crisis-another-example-how-gov-snyder-seems-incapable-admitting-mistakes#stream/0

Flint's water crisis another example of how Gov. Snyder seems incapable of admitting mistakes

Jack Lessenberry, Michigan Radio • 5 seconds ago

One of the things I most dislike about most politicians is their unwillingness to admit when they've screwed up.

Take Dennis Williams, the leader of the United Auto Workers union. He and his lieutenants were so out of touch with the membership that they negotiated a contract that the angry workers rejected by almost two to one.

Yesterday, when the results were in, Williams said. "We don't consider this a setback," we consider this "part of the process."

Imagine Bo Schembechler saying that after losing.

Of course this was a setback and an embarrassing one; Williams just doesn't have the guts to admit it.

But this pales in comparison to what Governor Rick Snyder said yesterday.

Snyder, even more than most politicians, seems incapable of admitting mistakes.

We saw that in his stubborn clinging for months to Aramark, the appallingly incompetent food service contractor, who he didn't finally fire until long after even his aides urged him to do so. And we are seeing it now in Flint, where people are being poisoned by the water.

A series of terrible decisions were made by a succession of Snyder-appointed emergency managers and the present mayor, Dayne Walling, who is running for reelection.

To save money, Flint stopped buying Detroit water a year and a half ago and switched to Flint River water.

This was clearly a disaster from the start.

The water was often discolored and smelled and tasted bad. It turned out to be full of bacteria.

The city dumped massive amounts of disinfectant in the water, so much so that it turned out to heighten the risk of cancer. Six months ago, Flint city council begged to be allowed to reconnect the city to Detroit's water system. But Jerry Ambrose, the Snyder-appointed emergency manager, refused. Either lying through his teeth or refusing to see reality, he said, "Water from Detroit is no safer than water from Flint."

Since then, we've learned that the Flint River water is so corrosive it is causing lead to leach out of ancient pipes in many homes. Officials have declared a public health emergency. There are now documented cases of infants and small children with lead poisoning from this.

This clearly is as serious a situation as a tornado. The state knows how to react quickly, regardless of cost, in those cases, and it's clear what should happen here.

The governor should use all his powers to reconnect Flint to Detroit's water system and then find a way to pay for it.

He should have done this already. But instead, he's being utterly wishy-washy. Two days ago, asked about Flint River water, he said, "In terms of a mistake, what I would say is we found there are probably things that weren't as fully understood when that switch was made."

He added, in words that would be funny if children weren't being poisoned, "It appears that lead levels could be higher… we're looking at making sure they're within safe limits."

Well, they aren't.

The governor is talking about trying to get people filters.

How about just switching to water that isn't polluted? Yes, that will cost money.

My guess is that a generation of brain-damaged children will cost even more.

Jack Lessenberry is Michigan Radio's political analyst. Views expressed in his essays are his own and do not necessarily reflect those of Michigan Radio, its management or the station licensee, The University of Michigan.

From: Kelley, Jeff
Sent: Friday, October 02, 2015 8:20 AM
To: Susan Hedman; Robert Kaplan (kaplan.robert@epa.gov); Hyde, Tinka

Cc: Rowan, Anne (rowan.anne@epa.gov); Cassell, Peter; Ronna Beckmann; Melissa Harrison (Harrison.Melissa@epa.gov); Abrams, Dan; Poy, Thomas
Subject: Flint water clips for the morning of Oct. 2

- □□□□□□□□ State to announce Flint water action plan Friday at Kettering (Flint Journal)
- □□□□□□□□ Petition launched for EPA intervention in Flint water crisis (Flint Journal)
- □□□□□□□□ Residents, ACLU Ask EPA to Take Action on Flint Water (Michigan Public Radio Network)
- □□□□□□□□ Budget bill add-on awaits future state funds for Flint water (Flint Journal)
- □□□□□□□□ Don't drink Flint's water, Genesee County leaders warn (Flint Journal)
- □□□□□□□□ Genesee County declares public health emergency (Michigan Radio)
- □□□□□□□□ Who's to blame for Flint's water crisis? Virginia Tech researcher points the finger at MDEQ (Michigan Radio)
- □□□□□□□□ Our Editorial: Get Flint residents drinkable water (Detroit News)
- □□□□□□□□ Efforts to get the lead out of Flint’s water awash in finger-pointing (Toledo Blade)
- □□□□□□□□ Public health emergency declared due to lead in Flint water (Associated Press)

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http://www.mlive.com/news/flint/index.ssf/2015/10/state_will_announce_flint_wate.html

State to announce Flint water action plan Friday at Kettering

By Ron Fonger | rfonger1@mlive.com The Flint Journal on October 01, 2015 at 8:12 PM, updated October 01, 2015 at 11:12 PM

FLINT, MI — Local, state and federal officials are set to announce a plan for addressing concerns with lead in Flint's drinking water at a news conference Friday, Oct. 2.

An advisory from the Michigan Department of Environmental Quality said leaders will announce the plan at 1:30 p.m. at Kettering University.

The news conference comes after weeks of worrisome news about rising levels of lead in the city's tap water, documented by researchers from Virginia Tech university and a study by a Hurley Medical Center doctor that showed the number of children in the city with elevated blood levels nearly doubled after the city started using the Flint River as its water source in 2014.

Brad Wurfel, director of communications for the DEQ, said Thursday, Oct. 1, that Gov. Rick Snyder cannot attend the news conference.

Snyder said earlier this week that he expected state officials to announce plans to deal with the lead in water issue by Friday, saying, "There are probably some things that weren't as fully understood when that switch was made."

The state oversees water quality in Flint, and state-appointed emergency managers were running city government when decisions were made not to negotiate a short-term agreement to continue buying Lake Huron water from Detroit and to instead use the river as a water source.

Although the city is not currently in violation of the Safe Drinking Water Act, bacteria, the level of total trihalomethanes and lead have been problems in the water system since then.

Among those scheduled to attend the news conference are Mayor Dayne Walling; Harvey Hollins, director of the state Office of Urban Initiatives; Dan Wyant, director of the Michigan DEQ; Nick Lyon, director of the Michigan Department of Health and Human Services; and Dr. Eden Wells, chief medical executive of the state Department of Health and Human Services, the news release said.

Wurfel would not discuss the plan in advance of the news conference, but officials in local, state and the federal government have called for a variety of actions in recent weeks.

Among them: Funding for home water filters, additional testing of city water and reconnection of Flint to the Detroit water system.

"We're looking forward to coming to Flint. We recognize lead is a concern in the city," Wurfel said.

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http://www.mlive.com/news/flint/index.ssf/2015/10/greater_flint_aclu_holds_meeti.html#incart_story_p

Petition launched for EPA intervention in Flint water crisis

By Amanda Emery | aemery@mlive.com The Flint Journal Follow on Twitter on October 02, 2015 at 8:20 AM, updated October 02, 2015 at 8:21 AM

FLINT, MI -- As the American Civil Liberties Union of Michigan joined a petition urging an immediate federal response to Flint's water crisis, the Greater Flint chapter held its board meeting Thursday to update residents on Flint's water situation.

The petition urges the U.S. Environmental Protection Agency to order Flint to reconnect to the Detroit Water and Sewerage Department system, among other requests.

The board meeting was held Thursday, Oct. 1 at the IINN's Great Lakes Center, 4800 South Saginaw Street in Flint. About 15 people attended the meeting as ACLU of Michigan investigative reporter Curt Guyette talked about the investigation into lead in the water and what's to come.

Woodside Church Pastor Deborah Conrad attended the meeting to get updates on the water situation. Conrad said she is looking to see what can be done to make it better.

"I've been following a lot of the reports, so it was helpful to put it in a context, to hear some new updates," Conrad said. "To hear some fiery rhetoric about the time for indictments, the time for holding people accountable. I worry that filing lawsuits will just drain the tax base of the state, or the city, or the county, but we need some individuals to be held accountable for their role as agents of government acting in individual capacities, frankly in their individual interests and harming the residents of the city."

Guyette said the ACLU was involved in helping coordinate and conduct the tests on residents' water in Flint. He said a partnership with Virginia Tech was born following the testing of water at the home of Flint resident LeeAnne Walters.

A number of groups from the Flint-area have signed on to the petition asking the EPA to take action that will decrease the danger to Flint residents' health from lead contamination in the drinking water.

A recent study by a Hurley Medical Center doctor found more children in Flint have elevated blood lead levels since Flint switched from the Detroit water system to using the Flint River as its primary water source in April 2014.

The groups include the Coalition for Clean Water, Concerned Pastors for Social Change, Water You Fighting For, Democracy Defense League Water Task Force, Flint Water Study Team, Michigan Nurses Association, NAACP - Michigan State Conference, Michigan Chapter of the National Conference of Black Lawyers, American Civil Liberties Union of Michigan, and the Natural Resources Defense Council.

Genesee County Commissioners Brenda Clack, Jamie Curtis and Bryant Nolden, along with Genesee County Health Officer Mark Valacak, held a news conference Thursday, Oct. 1, urging residents to not drink the city's water until it is checked for lead or they have installed an approved water filter.

The warning came just before an announcement that local, state and federal officials will announce a plan for addressing concerns with lead in Flint's drinking water at a news conference Friday, Oct. 2.

An advisory from the Michigan Department of Environmental Quality said leaders will announce the plan at 1:30 p.m. at Kettering University.

Guyette said the next move in the water saga will depend on what comes Friday.

"Well, a lot of that's going to depend on what the governor has to say," Guyette said, adding that there are more questions that need to be answered.

Frustrations have mounted since the water saga unfolded more than a year ago.

An order signed by Genesee County Circuit Court Judge Archie Hayman on Aug. 17, lowered water and sewer rates and halted the city from shutting off water to customers. Since then an average of 100 fewer customers are paying their water bills.

On Thursday during a news conference honoring the Flint Farmers' Market as one of the top six great public spaces on the American Planning Association's annual "Great Places in America" list a scuffle broke out between a water protestor and a market security guard.

City of Flint Spokesman Jason Lorenz said there were a couple of protestors at the market holding up signs. Lorenz said toward the end of the presentation some of the protestors began shouting.

One woman pulled out a bullhorn and security escorted the group out. Lorenz said that is when a scuffle ensued between the woman and the security guard. He said the woman was arrested on assault and battery charges.

In an effort to relieve the frustration and struggle for city residents, a water filter program has been put in place. Women and children receiving public assistance are on the top of the list to receive free water filters.

The announcement came Thursday that the United Way of Genesee County and the city have raised $105,000 from private and public sources to purchase 5,250 water filters for Flint residents.

The filter program announcement comes a week after the director of Hurley Medical Center's pediatric residency program warned in a study that the number of young children with elevated lead in their blood has doubled since the city changed its water source from Lake Huron to the Flint River.

Details on distribution of the filters will be communicated through the Genesee County Health Department Web site as well as a hotline that is in the process of being established.

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http://wmuk.org/post/residents-aclu-ask-epa-take-action-flint-water

Residents, ACLU Ask EPA to Take Action on Flint Water

Rick Pluta • 13 hours ago

(MPRN-Flint) The American Civil Liberties Union and some Flint residents are asking the federal government to step in to deal with the city's water crisis.

A complaint filed with the Environmental Protection Agency seeks an order for the city and the state to stop drawing water from the Flint River and re-connect with the Detroit water system.

The switch was ordered by a state-appointed emergency manager to save money. But the Flint River's water is highly corrosive, and caused lead to leach into the city's drinking water.

"There is no level of lead in water that is safe and it's having a devastating impact on the children in the city of Flint," said Michael Steinberg, an attorney with the ACLU. "In an attempt to save money, the emergency manager in Flint, acting in collusion with the state, provided unsafe drinking water to the residents of Flint, and the results have been catastrophic."

State and city officials are expected to outline the next plans to deal with the city's water crisis as soon as tomorrow.

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http://www.mlive.com/news/flint/index.ssf/2015/10/state_sen_ananich_sets_stage_f.html

Budget bill add-on awaits future state funds for Flint water

By Ron Fonger | rfonger1@mlive.com The Flint Journal on October 01, 2015 at 6:21 PM, updated October 01, 2015 at 6:22 PM

FLINT, MI -- A funding mechanism aimed at the state paying for measures to reduce lead levels in Flint's drinking water has been added to a budget bill in the Michigan Senate.

Jim Ananich, a Flint Democrat and Senate minority leader, successfully sought the placeholder of $100 to the Department of Environmental Quality for emergency water services for Flint.

The amount of the placeholder is expected to be changed after the true cost of the state's contribution is known, and details of that plan could be revealed as soon as Friday, Oct. 2.

"I worked with the administration (of Gov. Rick Snyder) and my colleagues on the Republican side to put a placeholder in place so that when we determine what resources are needed ... to fix the problem, we can go from there," Ananich said after the vote.

Gov. Rick Snyder earlier this week said he expected to announce those measures by Friday after saying "There are probably some things that weren't as fully understood (as should have been) when that switch (in Flint's water source) was made."

Flint changed its drinking water source from Lake Huron to Flint River in April 2014, a decision that came as the city was being run by a state-appointed emergency manager.

The city has struggled to effectively treat that river water since, and a recent study published by a Hurley Medical Center doctor says the number of children and infants with elevated blood lead levels since the change has nearly doubled.

Experiments by Virginia Tech university point to the source of Flint's water as the culprit, showing it is about 19 times more corrosive than the Lake Huron water that had been purchased from the city of Detroit for decades.

Virginia Tech researchers have said that corrosivity, interacting with lead in city service lines, has resulted in higher lead levels in water.

City officials have asked the state for assistance ranging from lead filters for faucets to help paying the Detroit Water and Sewerage Department to reconnect Flint to the DWSD water supply again until the Karegnondi Water Authority pipeline is completed.

The pipeline is expected to be available to service the city and Genesee County at some point in 2016.

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http://www.mlive.com/news/flint/index.ssf/2015/10/genesee_county_leaders_warn_do.html#incart_sto

Don't drink Flint's water, Genesee County leaders warn

By Jiquanda Johnson | jjohns16@mlive.com The Flint Journal Follow on Twitter on October 01, 2015 at 6:13 PM, updated October 01, 2015 at 11:33 PM

GENESEE COUNTY, MI — Don't drink the water. That's one message Genesee County officials are pushing to residents who get their water supply from the city of Flint.

Genesee County Commissioners Brenda Clack, Jamie Curtis and Bryant Nolden, along with Genesee County Health Officer Mark Valacak, held a news conference Thursday, Oct. 1, urging residents to not drink the city's water until it is checked for lead or they have installed an approved water filter.

The commissioners declared a public health emergency and said they are hoping their declaration will move Gov. Rick Snyder to declare a state of emergency to handle Flint's water crisis.

"This falls directly on the doorstep of the governor," said Nolden. "If we look at what happened with going to the Flint River, this falls smack-dab on the emergency manager and the governor. Now, I think it's imperative that the state step up and help us fix this problem. We're just imploring that the state actively engage and look at ways we can connect to the Detroit River. ... This is a major health situation for this entire community."

Flint Mayor Dayne Walling issued a statement on the commissioners' declaration, saying Flint water customers should filter their water before drinking it.

Commissioners said they have issued various communications with Snyder's office but still haven't heard any word from the governor about the state's plans.

"Flint residents need safe, clean water, and they need accurate information about their health and their homes," said David Murray, Snyder's deputy press secretary, in a statement issued Thursday. "Gov. Snyder has an action plan that builds on existing efforts to help Flint city leaders and their residents. ... It addresses short- and long-term challenges and will keep city residents safe."

A batch of water filters is expected to arrive in the city sometime Friday, Oct. 2. The filters came from the combined efforts of the United Way, city of Flint, General Motors Foundation and a donation from the Making Our Children Smile Foundation. In total, $105,000 was donated to purchase 5,250 water filters — costing about $20 each — for Flint residents.

Valacak said he is hoping officials can start distributing the water filters as early as Friday afternoon, but they are going to focus on high-risk residents, including pregnant women and homes with children.

The county has partnered with the United Way and other community organizations, such as the University of Michigan-Flint, to help distribute the water filters. Valacak said they are looking to have details on distribution as soon as Friday morning, and updates can be found on the Health Department's website.

In addition, the Flint Department of Public Works is offering free water testing for Flint residents.

There are potentially 45,000 homes in the city that may have issues with lead. Clack, Curtis and Nolden represent the majority of the city on the county board. Nolden said his district is primarily in older areas of the city, where the infrastructure is older and residents may be at high risk for lead exposure.

On Tuesday, Sept. 29, the county issued an advisory warning the community of various health hazards associated with lead, including brain damage, stunted growth and hearing problems in children. Valacak said pregnant women and children 5 and younger are especially vulnerable.

Commissioners said they have reached out to Snyder in hopes of him declaring a state of emergency for the city but have not heard back from his office and also said his anonymous donation of 1,500 water filers nearly a month ago shows the governor's office knows there is a problem with Flint's water.

"To me, that's an admission of guilt," Curtis said. "You know there's a problem. ... We're not looking for anybody to point fingers and put the blame. ... We have lead in our water. Let's fix the problem."

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http://michiganradio.org/post/genesee-county-declares-public-health-emergency#stream/0

Genesee County declares public health emergency

Steve Carmody, Michigan Radio • 13 hours ago

Recent studies have shown blood lead levels in Flint children have doubled, even tripled in some parts of town, since the city started using the Flint River as its drinking water source.

So today Genesee County officials declared a public health emergency.

“We often use the phrase that children are our most valuable resource … then we got to begin acting like they are,” says County Commissioner Brenda Clack.

County commission chairman Jaime Curtis says lead levels in the city of Flint’s water are threatening people’s lives.

“We’ll take water. We’ll take filters. We’ll take money. We’ll take anything to keep our people safe,” Curtis said at a news conference.

The county hopes to start distributing thousands of water filters tomorrow.

The city of Flint issued a lead advisory last week.

Flint Mayor Dayne Walling issued a statement urging people in Flint to follow the guidelines in the county’s public health declaration.

"I encourage the public to follow the guidance in the declaration to use a certified filter, have water testing done, and flush cold water for five minutes before drinking," says Walling.

Tomorrow, a "comprehensive" plan will be announced for dealing with Flint's water crisis.

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http://michiganradio.org/post/whos-blame-flints-water-crisis-virginia-tech-researcher-points-finger-mdeq#stream/0

Who's to blame for Flint's water crisis? Virginia Tech researcher points the finger at MDEQ

Mark Brush, Michigan Radio • 15 hours ago

Yesterday, Gov. Rick Snyder admitted that the decision to switch the city of Flint's water supply from Detroit's system over to the Flint River was not well planned.

"In terms of a mistake, what I would say is, is there are probably things that were not as fully understood as when that switch was made," Snyder said.

At the direction of the state-appointed emergency manager, the city made the switch in April 2014, and problems with the drinking water started soon after.

People complained of brown water. There were boil-water advisories after the water was found to have E. coli contamination, and the drinking water also had unsafe levels of a chlorine byproduct (total trihalomethanes).

Fast forward almost a year and a half, and now we learn some residents in the city are being exposed to unsafe levels of lead in their drinking water. Pediatricians have concluded that the water in Flint is likely poisoning kids.

How could one of Michigan's major cities be facing this problem?

Marc Edwards, a civil engineering professor from Virginia Tech University and a nationally renowned expert on water treatment, has put the blame squarely on the agency in charge of overseeing the safety of Flint's drinking water, the Michigan Department of Environmental Quality.

Edwards published a blog post yesterday in which he writes:

Given MDEQ's insistence that there is absolutely nothing wrong with Flint water, we have created a timeline that illustrates how MDEQ's mistakes and deception created the Flint water crisis in the first place.

In his timeline, Edwards says the state failed to require that the city have a corrosion-control program in place when the city switched over to Flint River water.

"What we discovered to our shock was that they switched to a new water source that was obviously very corrosive, meaning it would eat up the lead pipe and iron pipe and essentially put the metals into the water, without controlling the corrosion," Edwards says. "And this is a horrible idea in a city full of lead plumbing and lead pipe like Flint."

Edwards says current estimates are that Flint has about 15,000 drinking water service lines made of lead.

How dangerous metals can get into drinking water

When water flows through copper and lead pipes, it can take up some of the metal and make the water unsafe. To control for this problem, the Environmental Protection Agency has what's called a "lead and copper rule."

The purpose of the rule is listed in this "quick reference guide:"

Protect public health by minimizing lead (Pb) and copper (Cu) levels in drinking water, primarily by reducing water corrosivity. Pb and Cu enter drinking water mainly from corrosion of Pb and Cu containing plumbing materials.

To keep these metals from leaching into drinking water, municipal treatment plants can change the water chemistry to lower the water's ability to corrode these pipes.

It's called "corrosion control," and Edwards says the Michigan Department of Environmental Quality covered up the fact that Flint had no corrosion control program in place.

"Before you switch to a new water source, six months to a year ahead of time, you are supposed to do laboratory experiments to determine the corrosivity of the water," says Edwards. "And the chemistry – the pH, the alkalinity, and the phosphate that you need to make sure that the lead stays on the pipes and out of the water."

Edwards contends that the new water system had to have a "corrosion control" plan in place so that "you're not doing an uncontrolled human experiment on a city's population."

According to emails obtained by the ACLU of Michigan, a state MDEQ official, Stephen Busch, responded to a request from EPA Region 5, the federal agency that oversees MDEQ, that the new water system in Flint did have a corrosion control program in place.

That exchange occurred in February of this year.

In April, according to the emails, the EPA Region 5 official later found out that was not true. Flint, it turns out, did not have a corrosion-control program in place.

From the emails:

Pat Cook [of MDEQ] has confirmed that following the disconnection from Detroit, Flint has not been operating any corrosion control treatment, which is very concerning given the likelihood of LSLs [lead service lines] in the city.

The state has maintained that it is not required under the EPA's lead and copper rule to have a corrosion-control plan in place until two rounds of testing are completed to determine what that plan looks like.

More from Michigan Radio's Lindsey Smith:

At face value, the EPA rules are clear, all water systems that serve more than 50,000 people must have some kind of corrosion control.

But when you switch water sources, there is apparently some room for interpretation.

In approving updates to this federal regulation in 2000, the EPA noted that "water systems need to make treatment changes, on occasion, to react to changing circumstances."

In these cases, the rule does not “prevent a state from approving treatment changes,” but it’s not entirely clear if the state can approve having zero corrosion-control treatment.

As Edwards understands it, the EPA should have acted once the agency found out the state had no corrosion-control plan in place in Flint.

“If there was ever a case where [the] EPA should exert emergency powers and take primacy away from an agency, this is it,” he said.

Edwards says the city was also not conducting tests for lead and copper properly.

The point of the lead and copper rule is to make sure cities are sampling homes that are high risk – that is, homes serviced by lead pipe.

An ACLU of Michigan investigation found that the city did not know whether it was testing homes serviced by lead pipes.

In this video, Michael Glasgow, the utilities manager for Flint, indicated the city doesn't know where the lead pipes are.

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http://www.detroitnews.com/story/opinion/editorials/2015/10/01/editorial-flint-drinkable-water/73172092/

Our Editorial: Get Flint residents drinkable water

The Detroit News 11:32 p.m. EDT October 1, 2015

It doesn't matter if official reports say Flint's water is safe to drink. If residents turn on the tap and the water that comes out is oddly colored — or any color but clear — and stinky, they aren't going to drink it. Nor should they have to.

Flint water customers have been complaining about the smell, taste and color of their water since the spring of 2014, after the city cut its ties to the Detroit Water system and started treating and delivering its own supply.

The move saved Flint about $12 million a year, not an insignificant amount for a city that is under emergency financial management by the state of Michigan because of its shaky finances.

But cheaper water is no bargain if it is undrinkable. And residents of Flint are making a good case that the water the city provides is unfit for human consumption.

Water in the Detroit system is pulled from the depths of Lake Huron and has few contaminants that must be cleansed away at the treatment plant. Flint, for now at least, gets its water from the Flint River, which has endured a century or more of industrial and residential pollution.

Cleansing the river water is a more challenging task, and one Flint has yet to master. Residents have received a string of "boil water" notices due to mistakes made at the plant.

Most worrisome, however, is a new report that indicates elevated levels of lead in Flint children under the age of 5. Lead has a detrimental impact on development, and its increased presence in Flint's kids should not be taken lightly.

The state Department of Environmental Quality insists the water has been thoroughly tested and is safe.

But, again, residents who see and smell foul water coming from their tap can be forgiven if they doubt those assurances.

Gov. Rick Snyder, working with an unnamed private donor, recently distributed about 1,500 filters to Flint water customers. The filters remove chemical compounds as well as lead.

That seems a good temporary solution at least. But thousands more are needed. State Sen. Jim Ananich, a Democrat from Flint, is asking the state to find the funds for 15,000 filters to distribute to all water system customers.

That is a reasonable request, and may bridge residents until next year, when the city is expected to connect to a new regional water pipeline from Lake Huron.

The other option is to reconnect to the Detroit water system.

Whatever choice is made, the solution should be put in place quickly. If the elevated lead levels discovered by pediatricians at the Hurley Medical Center are linked to the water supply, then this is a public health emergency that demands an urgent response.

Flint residents are paying for water, and have the right to expect it to be clean and drinkable. They should not have to spend additional money each month to purchase bottled water.

The decision to disconnect Flint from Detroit water lines was made under the state's watch. The state has a responsibility to find a fix, and soon.

https://www.toledoblade.com/JackLessenberry/2015/10/02/Efforts-to-get-the-lead-out-of-Flint-s-water-awash-in-finger-pointing.html

Efforts to get the lead out of Flint's water awash in finger-pointing

BY JACK LESSENBERRY

BLADE OMBUDSMAN

FLINT, Mich. — Residents here haven't yet marched on city hall or the governor's office with pitchforks and blazing torches. But if they did, a lot of people might not blame them.

Flint has plenty of troubles: devastating job and population losses, plummeting property values, and a succession of emergency managers over the past four years.

The latest outrage is about water. Water that is discolored and foul-smelling. Water that at first had too much bacteria and then too much disinfectant.

And water that now seems to be causing lead poisoning in some of Flint's children. One woman, whose husband works as a policy planner for city government, said her spouse was "in tears as a new father himself when an irate resident came in with her premature, lead-poisoned baby."

Flint's water saga goes back to last year, when officials announced that their cash-strapped city could no longer afford to buy water from Detroit.

They announced they would join a new consortium, the Karegnondi Water Authority, which would supply purified water from Lake Huron. But Karegnondi's operation won't be up and running until sometime the following year.

So Flint officials announced that in the meantime, they would supply residents with treated water from the Flint River. But that turned into a disaster from almost day one. There were reports that the water was discolored and foul-tasting.

When tests showed that the water was dangerously contaminated with bacteria, including the infamous E. coli, the city pumped chlorine into the water.

That backfired too: In January, residents were told their water didn't meet federal safety standards, this time because of the chlorine.

While it may have killed the bacteria, it left the water with high levels of trihalomethane (TTHM), which is thought to increase the chances of developing cancer.

Average levels of TTHM didn't become acceptable until late this summer. Then Flint had a terrifying new problem: lead poisoning.

Last week, a study by physicians at Hurley Medical Center in Flint showed that the tap water in Flint has resulted in significantly elevated levels in the blood of the city's children. The scientists said the lead isn't actually in the water, but that the river water itself was more corrosive than the lake water Flint had been buying from Detroit.

A team from Virginia Tech tested samples last month from 300 homes, and found what it called "seriously" high levels of lead. The Hurley study found the percentage of children with seriously elevated lead levels had almost doubled.

That got politicians' attention. Mayor Dayne Walling advised residents to use only cold water, let it run from the tap for five minutes, and buy a filter for lead removal. The mayor also asked Gov. Rick Snyder to come up with $30 million to fix the water system and replace lead pipes.

City officials say about half the customers in Flint may be facing a problem, because the transmission lines connecting them to city water mains are made with lead.

The mayor's request for money from the governor wasn't good enough for the editorial board of the Flint Journal, the city's newspaper. When the news of lead poisoning surfaced, it ran an editorial saying "it's time to abandon the Flint River" as a drinking water source.

"We call on the governor to make this right for Flint citizens by brokering a return to Detroit water that won't bankrupt the city of Flint," the editorial said. It added: "Flint is in a crisis that was created in no small part by Snyder's hand-picked emergency manager, and it is Snyder's job to fix this mess."

Yet the governor has shown no signs of doing any such thing.

Pat Clawson, a longtime Flint area resident and former investigative reporter, thinks his city's plight should be a national scandal. "They are poisoning the people with this water — poisoning them, and that's what the doctors call it among themselves," he told me.

He puts the lion's share of the blame on Mayor Walling, who he says "was involved in planning and promoting the switch to Flint River water from the start."

But Mr. Clawson says there is plenty of blame to go around: "I believe there is criminal culpability on the part of public officials for causing and concealing this crisis."

He urged the federal and state governments to convene grand juries to investigate. Whether that will happen is anyone's guess. Meanwhile, the agony continues for the 99,000 folks who still live in the once-prosperous city of Flint.

Jack Lessenberry, a member of the journalism faculty at Wayne State University in Detroit and The Blade's ombudsman, writes on issues and people in Michigan.

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http://www.wtvm.com/story/30170601/public-health-emergency-declared-due-to-lead-in-flint-water

Public health emergency declared due to lead in Flint water

By COREY WILLIAMS, Associated Press

DETROIT (AP) - A public health emergency has been declared in cash-strapped Flint after tests showed the Michigan city's water supply is causing elevated levels of lead in children and following months of complaints about the smell and taste.

Gov. Rick Snyder this week questioned the switch to the Flint River from the Detroit water system in 2014, a decision that was made as a cost-saving move while a new regional pipeline is built to Lake Huron.

And on Thursday, the Genesee County health department declared a public health emergency, recommending that people not drink the water unless it has been filtered and tested to rule out elevated levels of lead. More steps will be announced Friday.

The problem: Although the river water is treated, it is corrosive and releasing lead from old plumbing in thousands of homes.

A coalition of residents and national groups petitioned the U.S. Environmental Protection Agency to order the state to reconnect Flint to Detroit water.

"As evidenced by the ongoing poisoning of the children of Flint, it's time for the EPA to take immediate action to provide us with a safe water source," LeeAnne Walters, a Flint parent and member of the Water You Fighting For group, said Thursday.

Flint, 60 miles north of Detroit, is among a number of communities that have complained about the rising cost of Detroit's water and sewerage service, which serves about 4 million people in southeastern Michigan. It opted to temporarily use the Flint River until a new line to Port Huron opens in 2016 at an annual cost of $12.5 million.

The decision to break away from the Detroit system was made while a Snyder-appointed emergency manager was running the long-struggling city, which had reached a financial crisis.

"In terms of a mistake, what I would say is we found there are probably things that weren't as fully understood when that switch was made," the governor said Wednesday.

His comments marked a significant shift. In July, a spokesman for the state's Department of Environmental Quality, Brad Wurfel, recommended home tests but added: "Anyone who is concerned about lead in the drinking water in Flint can relax."

Residents are unhappy with the taste, smell and appearance of water from the Flint River and have reported rashes, hair loss and other health concerns that they attribute to it. A General Motors plant stopped using the water because it was causing excessive rust.

Despite the complaints, city officials had said state tests showed the water met federal safety guidelines.

But in September, Virginia Tech researchers released a report saying Flint's water was creating a health threat in old homes that have lead pipes or pipes fused with lead solder. And doctors last week reported high levels of lead in local children's blood samples, also blaming water pipes.

Flint officials say they know which homes have risky pipes but that the information is on about 45,000 index cards and difficult to retrieve.

The city is now telling residents to use only cold water for drinking, cooking and making baby formula, and recommending they use the certified filters. The General Motors Foundation, the local United Way and others have given at least $105,000 to buy filters for 5,000 residents.

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To: Meiburg, Stan[Meiburg.Stan@epa.gov]; Fritz, Matthew[Fritz.Matthew@epa.gov]; Burke, Thomas[Burke.Thomas@epa.gov]; Reynolds, Thomas[Reynolds.Thomas@epa.gov]; Vaught, Laura[Vaught.Laura@epa.gov]; Harrison, Melissa[Harrison.Melissa@epa.gov]; Kopocis, Ken[Kopocis.Ken@epa.gov]; Garbow, Avi[Garbow.Avi@epa.gov]; Giles-AA, Cynthia[Giles-AA.Cynthia@epa.gov]; Grevatt, Peter[Grevatt.Peter@epa.gov]; Rupp, Mark[Rupp.Mark@epa.gov]
From: Hedman, Susan
Sent: Fri 10/2/2015 4:38:22 PM
Subject: RE: Proposed EPA comment on Michigan/Flint press conference announcing steps to address lead levels in Flint drinking water

I have updated the statement to incorporate Tom's suggestion – and have spoken with the Mayor and MDEQ Director about what we plan to say. Any progress on an answer to the question about requirements for large drinking water systems to have corrosion control?

US EPA Regional Administrator comment on the State of Michigan and City of Flint press conference on October 2, 2015: Actions that the State of Michigan and the City of Flint announced today are important steps to protect public health. The immediate steps being taken to implement corrosion control will reduce lead in drinking water, as required by the Safe Drinking Water Act. US EPA will continue to provide technical assistance to the State of Michigan and the City of Flint to support their joint effort.

From: Hedman, Susan
Sent: Thursday, October 01, 2015 7:29 PM
To: Meiburg, Stan; Fritz, Matthew; Burke, Thomas; Reynolds, Thomas; Vaught, Laura; Harrison, Melissa; Kopocis, Ken; Avi Garbow; Cynthia Giles-AA; Grevatt, Peter
Subject: Proposed EPA comment on Michigan/Flint press conference announcing steps to address lead levels in Flint drinking water

As promised, we have drafted a brief statement to be released after the Michigan/Flint press conference that will be held tomorrow in Flint at 1:30 eastern. We have also drafted answers to two follow up questions that we expect to get tomorrow and are asking OGC to assist with an answer to a third question that we expect to receive. Please let us know if you have any suggestions.

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1. What about the interim report that has been attributed to a "rogue" EPA employee? The interim report was prepared by a Region 5 employee as part of his regular duties at EPA. It was intended to be an internal document to brief EPA managers on lead levels in drinking water at three residential properties in Flint. The interim report notes that a "final report will be submitted once additional analyses have been completed on pipe and water samples." **Has a final report been prepared?** Yes. **Can I get a copy of the report?** The report contains Personally Identifiable Information and other confidential health data. If a FOIA request is submitted for the document, EPA attorneys will determine the extent to which a redacted document can be released. **Why was the interim report released without redaction?** EPA did not release the interim report to the public.

2. What about the SDWA petition that was submitted to EPA on 10/1/2015? EPA will review the petition.

3. Are all large drinking water systems required to implement corrosion control? OGC to draft answer consistent with the discussion earlier today.

Susan Hedman

Region 5 Administrator/Great Lakes National Program Manager

U.S. Environmental Protection Agency

77 West Jackson Blvd - 19th Floor

Chicago, Illinois 60604-3590

To: Hyde, Tinka[hyde.tinka@epa.gov]; Kelley, Jeff[kelley.jeff@epa.gov]
From: Hedman, Susan
Sent: Fri 10/2/2015 4:39:14 PM
Subject: FW: Proposed EPA comment on Michigan/Flint press conference announcing steps to address lead levels in Flint drinking water

FYI – let's plan to watch the press conference together on the 19th floor.

From: Hedman, Susan
Sent: Friday, October 02, 2015 11:38 AM
To: Meiburg, Stan; Fritz, Matthew; Burke, Thomas; Reynolds, Thomas; Vaught, Laura; Harrison, Melissa; Kopocis, Ken; Avi Garbow; Cynthia Giles-AA; Grevatt, Peter; Rupp, Mark
Subject: RE: Proposed EPA comment on Michigan/Flint press conference announcing steps to address lead levels in Flint drinking water

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Subject: Proposed EPA comment on Michigan/Flint press conference announcing steps to address lead levels in Flint drinking water

As promised, we have drafted a brief statement to be released after the Michigan/Flint press *conference that will be held tomorrow in Flint at 1:30 eastern. We have also drafted answers to two follow up questions that we expect to get tomorrow and are asking OGC to assist with an answer to a third question that we expect to receive. Please let us know if you have any suggestions.*

US EPA Regional Administrator comment on the State of Michigan and City of Flint press conference on October 2, 2015: Actions that the State of Michigan and the City of Flint announced today will protect public health. The immediate steps being taken to implement corrosion control will reduce lead in drinking water, as required by the Safe Drinking Water Act. US EPA will continue to provide technical assistance to the State of Michigan and the City of Flint to support their joint effort.

1. What about the interim report that has been attributed to a "rogue" EPA employee? The interim report was prepared by a Region 5 employee as part of his regular duties at EPA. It was intended to be an internal document to brief EPA managers on lead levels in drinking water at three residential properties in Flint. The interim report notes that a "final report will be submitted once additional analyses have been completed on pipe and water samples." **Has a final report been prepared?** Yes. **Can I get a copy of the report?** The report contains Personally Identifiable Information and other confidential health data. If a FOIA request is submitted for the document, EPA attorneys will determine the extent to which a redacted document can be released. **Why was the interim report released without redaction?** EPA did not release the interim report to the public.

2. What about the SDWA petition that was submitted to EPA on 10/1/2015? EPA will review the petition.

3. Are all large drinking water systems required to implement corrosion control? OGC to draft answer consistent with the discussion earlier today.

Susan Hedman

Region 5 Administrator/Great Lakes National Program Manager

U.S. Environmental Protection Agency

77 West Jackson Blvd - 19th Floor

Chicago, Illinois 60604-3590

To: Hedman, Susan[hedman.susan@epa.gov]
Cc: Meiburg, Stan[Meiburg.Stan@epa.gov]; Grevatt, Peter[Grevatt.Peter@epa.gov]; Minoli, Kevin[Minoli.Kevin@epa.gov]; Mitchell, Stacey[Mitchell.Stacey@epa.gov]; Levine, MaryEllen[levine.maryellen@epa.gov]; Garbow, Avi[Garbow.Avi@epa.gov]; Harrison, Melissa[Harrison.Melissa@epa.gov]; Kopocis, Ken[Kopocis.Ken@epa.gov]; Fritz, Matthew[Fritz.Matthew@epa.gov]; Vaught, Laura[Vaught.Laura@epa.gov]; Wehling, Carrie[Wehling.Carrie@epa.gov]; Darman, Leslie[Darman.Leslie@epa.gov]
From: Neugeboren, Steven
Sent: Fri 10/2/2015 5:39:52 PM
Subject: Re: Proposed EPA comment on Michigan/Flint press conference announcing steps to address lead levels in Flint drinking water

Out today but seeing these now and will respond. Copying my folks who have been involved in this and will respond quickly.

Sent from my iPhone
Steven Neugeboren
Associate General Counsel
United States Environmental Protection Agency
1200 Pennsylvania Ave. NW
Washington DC. 20460
202-564-5488

On Oct 2, 2015, at 1:31 PM, Hedman, Susan <hedman.susan@epa.gov> wrote:

Attorney Client / Ex. 5

Attorney Client / Ex. 5 That being said, EPA Region 5 has been urging the City and MDEQ to take immediate steps to implement corrosion control since results came in this summer showing that there have been 2 consecutive six-month periods during which the 90th percentile level is above 5 ug/L (ppb), which is the action level set out in 141.81(b)(3). This requirement was memorialized in a letter that MDEQ sent to the City of Flint on August 17th.

From: Meiburg, Stan
Sent: Friday, October 02, 2015 12:15 PM
To: Grevatt, Peter; Neugeboren, Steven; Minoli, Kevin; Mitchell, Stacey; Levine, MaryEllen
Cc: Garbow, Avi; Harrison, Melissa; Kopocis, Ken; Fritz, Matthew; Hedman, Susan;

Vaught, Laura
Subject: RE: Proposed EPA comment on Michigan/Flint press conference announcing steps to address lead levels in Flint drinking water

Thanks, Peter. Susan, I hope this helps.

Stan

A. Stanley Meiburg, Ph.D.

Acting Deputy Administrator

U.S. Environmental Protection Agency

MC-1102A

1200 Pennsylvania Avenue, NW

Washington, DC   20460

From: Grevatt, Peter
Sent: Friday, October 02, 2015 1:14 PM
To: Meiburg, Stan; Neugeboren, Steven; Minoli, Kevin; Mitchell, Stacey
Cc: Garbow, Avi; Harrison, Melissa; Kopocis, Ken; Fritz, Matthew; Hedman, Susan; Vaught, Laura
Subject: RE: Proposed EPA comment on Michigan/Flint press conference announcing steps to address lead levels in Flint drinking water

Attorney Client / Ex. 5

Attorney Client / Ex. 5

Attorney Client / Ex. 5

From: Meiburg, Stan
Sent: Friday, October 02, 2015 12:51 PM
To: Neugeboren, Steven; Minoli, Kevin; Mitchell, Stacey
Cc: Garbow, Avi; Harrison, Melissa; Kopocis, Ken; Grevatt, Peter; Fritz, Matthew; Hedman, Susan; Vaught, Laura
Subject: FW: Proposed EPA comment on Michigan/Flint press conference announcing steps to address lead levels in Flint drinking water

Attorney Client / Ex. 5

Attorney Client / Ex. 5

Stan

A. Stanley Meiburg, Ph.D.

Acting Deputy Administrator

U.S. Environmental Protection Agency

MC-1102A

1200 Pennsylvania Avenue, NW

Washington, DC 20460

From: Hedman, Susan
Sent: Friday, October 02, 2015 12:38 PM
To: Meiburg, Stan; Fritz, Matthew; Burke, Thomas; Reynolds, Thomas; Vaught, Laura; Harrison, Melissa; Kopocis, Ken; Garbow, Avi; Giles-AA, Cynthia; Grevatt, Peter; Rupp, Mark
Subject: RE: Proposed EPA comment on Michigan/Flint press conference announcing steps to address lead levels in Flint drinking water

Attorney Client / Ex. 5

US EPA Regional Administrator comment on the State of Michigan and City of Flint press conference on October 2, 2015: Actions that the State of Michigan and the City of Flint announced today are important steps to protect public health. The immediate steps being taken to implement corrosion control will reduce lead in drinking water, as required by the Safe Drinking Water Act. US EPA will continue to provide technical assistance to the State of Michigan and the City of Flint to support their joint effort.

From: Hedman, Susan
Sent: Thursday, October 01, 2015 7:29 PM
To: Meiburg, Stan; Fritz, Matthew; Burke, Thomas; Reynolds, Thomas; Vaught, Laura; Harrison, Melissa; Kopocis, Ken; Avi Garbow; Cynthia Giles-AA; Grevatt, Peter
Subject: Proposed EPA comment on Michigan/Flint press conference announcing steps to address lead levels in Flint drinking water

Attorney Client / Ex. 5

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Attorney Client / Ex. 5

Susan Hedman

Region 5 Administrator/Great Lakes National Program Manager

U.S. Environmental Protection Agency

77 West Jackson Blvd - 19th Floor

Chicago, Illinois 60604-3590

To: Hedman, Susan[hedman.susan@epa.gov]; Kaplan, Robert[kaplan.robert@epa.gov]; Kelley, Jeff[kelley.jeff@epa.gov]; Hyde, Tinka[hyde.tinka@epa.gov]; Henry, Timothy[henry.timothy@epa.gov]; Poy, Thomas[poy.thomas@epa.gov]; Fortin, Denise[Fortin.Denise@epa.gov]; Deamer, Eileen[deamer.eileen@epa.gov]
From: Beckmann, Ronna Erin
Sent: Fri 10/2/2015 9:39:59 PM
Subject: Fwd: STATEMENT: Congressman Dan Kildee on Flint Water State Action Plan

Ronna Beckmann
Office of the Regional Administrator
U.S. Environmental Protection Agency
Region 5

Begin forwarded message:

From: "Dickinson, Jordan" <Jordan.Dickinson@mail.house.gov>
Date: October 2, 2015 at 4:27:23 PM CDT
To: "Beckmann, Ronna Erin (beckmann.ronna@epa.gov)" <beckmann.ronna@epa.gov>
Subject: FW: STATEMENT: Congressman Dan Kildee on Flint Water State Action

From: Rivard, Mitchell
Sent: Friday, October 02, 2015 1:22 PM
To: Rivard, Mitchell
Subject: STATEMENT: Congressman Dan Kildee on Flint Water State Action Plan

EMBARGOED UNTIL 1:30 P.M. ET

Friday, October 2, 2015

Contact: Mitchell Rivard, 202-595-4885, mitchell.rivard@mail.house.gov

Statement by Congressman Dan Kildee on Flint Water State Action Plan

After being briefed this morning by state officials, Congressman Dan Kildee (MI-05) issued the following statement today on the state's new efforts to ensure the safety *of Flint's drinking water:*

"The lead levels recently reported in Flint's water are unacceptable and could cause irreversible adverse health effects, particularly among children. Flint residents deserve safe water and immediate assistance. That's why it is absolutely necessary that the state's efforts announced today be implemented immediately.

"Specifically, corrosion control needs to be started now. To date, corrosion control treatment has not been started in the Flint water system. Experts acknowledge that corrosion control treatment takes time once introduced – weeks or even months – to move throughout the water distribution system and fully take effect. Thus, delaying corrosion control treatment will only delay improving the water quality.

"In the interim, it is imperative that every Flint resident who needs a lead-clearing filter gets one. Since there is already an ongoing community effort to distribute filters in addition to state resources announced today, it is critical that the state work with local leaders on the ground to coordinate efforts.

"I'm calling on all parties involved to adopt a greater sense of urgency than I've seen demonstrated thus far. I will continue to work with city and state officials on immediate and long term solutions to improve the quality of Flint's water."

###

Cc: Fortin, Denise[Fortin.Denise@epa.gov]; Kelley, Jeff[kelley.jeff@epa.gov]; Deamer, Eileen[deamer.eileen@epa.gov]
To: Hedman, Susan[hedman.susan@epa.gov]; Hyde, Tinka[hyde.tinka@epa.gov]; Henry, Timothy[henry.timothy@epa.gov]
From: Beckmann, Ronna Erin
Sent: Fri 10/2/2015 9:54:16 PM
Subject: Kildee question regarding state law

Who would know the answer to the question below?

Thanks,

Ronna Beckmann
Office of the Regional Administrator
U.S. Environmental Protection Agency
Region 5

Begin forwarded message:

From: "Dickinson, Jordan" <Jordan.Dickinson@mail.house.gov>
Date: October 2, 2015 at 4:43:28 PM CDT
To: "Beckmann, Ronna Erin" <beckmann.ronna@epa.gov>
Subject: RE: STATEMENT: Congressman Dan Kildee on Flint Water State Action Plan

I talked to Sen. Ananich's office and they could not find in state law where it prevents the SRF from being used for lead line replacement on private property. In fact, in this guidance document it says that SRF funds CAN be used for private lead service line replacement. I was wondering if you knew where in the statute it said this?

http://www.michigan.gov/documents/deq/deq-ess-mfs-formsguidance-DWeligguide_248792_7.pdf

On page 19 it says:

The installation of service lines located within a public right of way (commonly referred to as “stubs” or “customer service connections”) are eligible for DWRF assistance. The installation of service lines from the “stub” to the privately-owned home or building will not be eligible for DWRF assistance unless that portion of the service line is also owned by the water supplier or it’s a lead service line that needs to be replaced as discussed below.

The installation of water meters for a new waterworks system or an existing unmetered system is eligible for DWRF assistance, provided the meters are owned by the water supplier. The replacement or upgrading of existing water meters is also allowable if adequate need has been demonstrated in the project plan. An example would be upgrading meters to have remote read capabilities. While ancillary costs such as providing the meter reading equipment is eligible, billing software to process the information obtained from the meters is not eligible.

Effective January 30, 2006, the replacement of lead water service laterals, both the public and the privately-owned portions, are eligible for DWRF assistance if necessary to comply with the March 2005 Lead and Copper Rule. The four main functions of the Rule are:

A. Require water suppliers to optimize their treatment systems to control corrosion in customer’s plumbing.

B. Determine tap water levels of lead and copper for customers who have lead service lines

or lead-based solder in their plumbing systems.

C. Rule out the source water as a source of significant lead levels.

D. If action levels are exceeded (i.e., 15 ppb), require the suppliers to educate their

customers about lead and suggest actions they can take to reduce their exposure to

lead through public notices and public education programs. If a water system, after

installing and optimizing corrosion control treatment, continues to fail to meet the lead

action level, it must begin replacing the lead service lines under its ownership.

The need for lead service line replacement due to an action level exceedance must be

discussed in the project plan.

To: Hedman, Susan[hedman.susan@epa.gov]; Hyde, Tinka[hyde.tinka@epa.gov]; Kelley, Jeff[kelley.jeff@epa.gov]; Cassell, Peter[cassell.peter@epa.gov]; Peterson, John[peterson.john@epa.gov]; Poy, Thomas[poy.thomas@epa.gov]; Fortin, Denise[Fortin.Denise@epa.gov]
From: Rowan, Anne
Sent: Fri 10/2/2015 10:27:44 PM
Subject: Friday /Flint Clips

CBS/AP October 2, 2015, 11:21 AM

Water crisis in Flint declared

Officials have declared a health emergency in Flint, Michigan, due to high lead content in the water.

Last Updated Oct 2, 2015 1:47 PM EDT

A public health emergency has been declared in cash-strapped Flint, Michigan, after tests showed the city's water supply is causing elevated levels of lead in children, following months of complaints about the smell and taste.

Michigan Gov. Rick Snyder announced Friday that the state will spend $1 million to buy water filters and immediately test water in public schools in Flint. He also announced expanded health exposure testing, continued free water testing, and quicker steps to ensure that water from the Flint River is effectively treated.

The problems arose after the city broke away from Detroit's water system in 2014 and began taking water from the Flint River to save money, pending the completion of a new regional pipeline in 2016.

On Thursday, the Genesee County health department declared a public health emergency, recommending that people not drink the water unless it has been filtered and tested to rule out elevated levels of lead. More steps will be announced Friday.

County Commissioner Brenda Clack told residents that infants and children should not use the water coming from the taps in the city of Flint.

"Individuals who have respiratory conditions should not use the water, pregnant women should not use the water - it's imperative that they not use the water," she urged.

The problem: Although the river water is treated, it is corrosive and releasing lead from old plumbing in thousands of homes.

A coalition of residents and national groups petitioned the U.S. Environmental Protection Agency to order the state to reconnect Flint to Detroit water.

"As evidenced by the ongoing poisoning of the children of Flint, it's time for the EPA to take immediate action to provide us with a safe water source," LeeAnne Walters, a Flint parent and member of the Water You Fighting For group, said Thursday.

Flint, 60 miles north of Detroit, is among a number of communities that have complained about the rising cost of Detroit's water and sewerage service, which serves about 4 million people in southeastern Michigan. It opted to temporarily use the Flint River until a new line to Port Huron opens in 2016 at an annual cost of $12.5 million.

The decision to break away from the Detroit system was made while a Snyder-appointed emergency manager was running the long-struggling city, which had reached a financial crisis.

"In terms of a mistake, what I would say is we found there are probably things that weren't as fully understood when that switch was made," the governor said Wednesday.

His comments marked a significant shift. In July, a spokesman for the state's Department of Environmental Quality, Brad Wurfel, recommended home tests but added: "Anyone who is concerned about lead in the drinking water in Flint can relax."

Residents are unhappy with the taste, smell and appearance of water from the Flint River and have reported rashes, hair loss and other health concerns that they attribute to it. A General Motors plant stopped using the water because it was causing excessive rust.

Despite the complaints, city officials had said state tests showed the water met federal safety guidelines.

But in September, Virginia Tech researchers released a report saying Flint's water was creating a health threat in old homes that have lead pipes or pipes fused with lead solder. And doctors last week reported high levels of lead in local children's blood samples, also blaming water pipes.

Flint officials say they know which homes have risky pipes but that the information is on about 45,000 index cards and difficult to retrieve.

The city is now telling residents to use only cold water for drinking, cooking and making baby formula, and recommending they use the certified filters. The General Motors Foundation, the local United Way and others have given at least $105,000 to buy filters for 5,000 residents.

"It's our intention to begin the distribution of those as soon as possible," Genesee County Health Officer Mark Valacak said. "This community always comes together no matter what the challenge, and this is yet another challenge but we are fortunate in having a number of community members who have come to the forefront."

CBS/AP

State to tackle unsafe water in Flint with tests, filters

By Kathleen Gray and By Robin Erb, Detroit Free Press 4:49 p.m. EDT October 2, 2015

Buy Photo

Flint resident Nayyirah Shariff holds a shovel while protesting outside of the Kettering University Innovation Center in Flint on Friday, Oct. 2, 2015, during an announcement of an action plan for Flint drinking water following warnings of high levels of lead in the water.(Photo: Ryan Garza, Detroit Free Press)Buy Photo

State officials unveiled a 10-point plan today to address Flint's controversial water system that will include free testing of water, $1 million for water filters for residents and complete anti-corrosion treatment of the city's water system, plagued for the past year by smelly, discolored water and now reports of increased lead levels in pipes.

"We know that many residents .. have lost confidence in the drinking water, and we need to bring that back," said Dan Wyant, director of the Michigan Department of Environmental Quality.

Officials sought to clarify once again that the lead in the water is not from the Flint River, but from lead pipes in residents' homes and service lines.

"This is an important issue and I want to make sure that people are working well together to address this," Gov. Rick Snyder said in a briefing with reporters shortly before an afternoon news conference. "We all have a concern abut Flint's drinking water in terms in what we're seeing on lead."

The state's plan includes:

- Immediate testing of the water in Flint public schools, with a goal to reassure parents and students that the water is safe, Wyant said.
- Expanding testing of individuals to determine levels of lead.
- Offering free water testing to Flint residents and the state setting aside $1 million for free water filters for city residents.
- Requiring and expediting additional corrosion controls in the city's water system to minimize any leaching of lead into the city's water.
- Creating a safe drinking water technical advisory committee in conjunction with the U.S. Environmental Protection Agency.
- A long-term acceleration of plans to replace old lead service lines.
- Expediting the completion of the Karagondi water system into the city by making sure that permit applications are handled quickly and helping the city identify workers for a second shift at the new water system.

With reporters packed into a small room and about two dozen protesters outside — "Not your lab rats" read one sign — the head of the Michigan Department of Health and Human Services, Nick Lyon, said the "utmost priority" of the state is to protect children from lead.

"There is no safe level of lead," added Dr. Eden Wells, the department's chief medical executive.

It's a sharp departure from recent state assurances that any bump in blood-lead levels could be attributed to predictable monthly fluctuations.

But that's because of findings released last week by a Hurley Medical Center pediatrician. Dr. Mona Hanna-Attisha found that the number of Flint children with elevated blood-lead levels — 5 micrograms per deciliter or more — jumped from 2.1% in the 20 months prior to Sept. 15, 2013, to 4.0% between January 1 and September 15 this year. In certain ZIP codes, the change was even more troubling, she said — jumping from 2.5% of the children tested to 6.3%.

Those findings helped prompt Genesee County to issue an emergency advisory to Flint residents, advising them to refrain from drinking city water unless it is filtered through a certified filtration device or had been tested and showed that it doesn't contain elevated lead levels.

"Since no safe level (of lead) has been identified, it is in everyone's interest to reduce exposure to lead as much as possible," the emergency advisory stated.

Officials earlier today acknowledged it was Hanna-Attisha's work that had them second-guessing their first reading of data. When they focused in on certain zip codes, the worrisome lead level increases became clearer, Wells said.

"There's no doubt that new testing data is justifying these actions," Wyant told The Free Press after the news conference.

In fact, state testing of lead levels in children confirmed what Hanna-Attisha found: that children in two troublesome zip codes have lead levels in their blood that are 3.2% higher than the rest of Genesee County since the water system switch was made. Lead levels in children throughout Flint are two times higher than the rest of Genesee County, but that number didn't go up after the water switch was complete, Wells said.

Snyder, in the earlier phone conference with reporters, said that talks are continuing on the possibility of reconnecting the city to Detroit's water system.

"We've had active discussions during the week and hopefully we can fully understand the issue in terms of the costs and benefits," he said. "This is being done in the next few days."

The state has been testing the city's water since it switched from the Detroit Water and Sewerage Department to pulling water from the Flint River.

DETROIT FREE PRESS

Legislators take action to fix Flint water supply

"We've been following established protocols in terms of testing the water itself when it's in the plant and when it goes into the system and what we've found is that the water is safe. And it meets all federal guidelines in terms of lead," Snyder said. "But the real concern is where it ends up in peoples' homes. A lot of homes still have lead pipes and it appears from the data that there are some serious issues and concerns about what happens when the water reaches the homes."

DETROIT FREE PRESS

For Flint, vindication -- for Snyder, more questions

During routine quarterly testing of Flint's water in December, the lead level was 6 parts per billion, well below federal guidelines of 15 parts per billion. Testing in the summer showed that level had risen to 11 parts per billion, still below the federal action level, but the state sent a letter to Flint in August saying that it needed to expand corrosion controls in the system to make sure lead wasn't leaching from public and private pipes into residents' homes.

Buy Photo

LeeAnne Walters of Flint shows water samples from her home Jan. 21, 2015, to Flint emergency manager Jerry Ambrose after city and state officials spoke during a forum discussing growing health concerns about the drinking water. (Photo: Ryan Garza, Detroit Free Press)

In 2014, city officials ended the city's contract with the Detroit Water and Sewerage Department, saying that water costs were too high. They opted instead to pull from the Karegnondi Water Authority, which is building a system to supply Genesee County with water pulled from Lake Huron. In the long run, this will mean lower water costs, officials have said, adding that water from the Detroit system will cost $1.5 million more a month than the city is paying now.

But until the new system comes online in 2016, Flint is temporarily pulling water from the Flint River. Since it made the switch, residents have complained that the water smells, is discolored and makes them sick.

Governor's plan for lead in Flint water includes free tests, $1M in filters

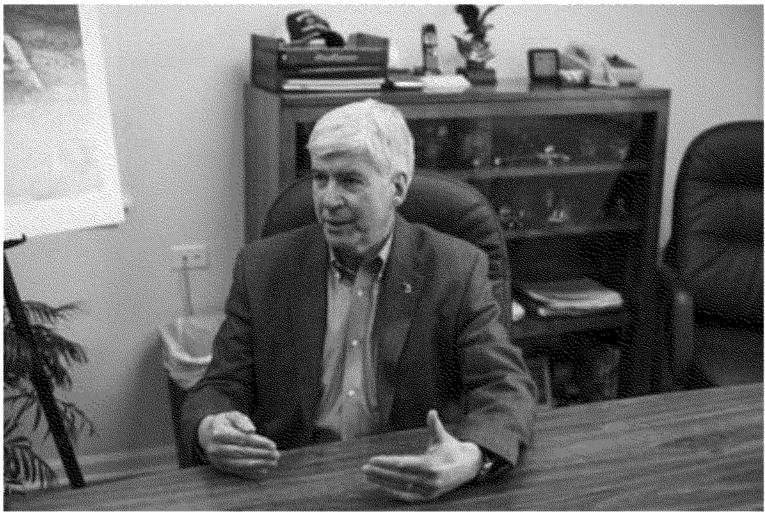
City and State officials announce action plan for Flint water

Dan Wyant, director of the Michigan Department of Environmental Quality speaks as city and state officials announce an action plan to deal with lead levels in Flint's drinking water during a news conference on Friday, Oct. 2, 2015, at Kettering University in Flint, Mich. The action plan includes immediate testing of water in Flint's public schools and providing water filters for concerned residents. Danny Miller | MLive.com

Danny Miller | dmille17@mlive.com

By Ron Fonger | rfonger1@mlive.com The Flint Journal

on October 02, 2015 at 1:35 PM, updated October 02, 2015 at 2:45 PM



Gov. Rick SnyderMLive.com file photo

FLINT, MI -- The state is committing up to $1 million to purchase water filters for Flint, part of an action plan being unveiled today, Oct. 2, to address concerns about lead levels in the city's drinking water.

The plan includes immediate testing of water at Flint schools at state expense, expansion of lead exposure testing for individuals and expediting treatment of Flint water to better control corrosion, officials said. The plan is being outlined at a news conference at Kettering University.

Related: Watch live as state unveils action plan for Flint water

Although the plan does not call for a reconnection of Flint to Lake Huron water through the Detroit Water and Sewerage Department, Gov. Rick Snyder said in a conference call with reporters that it remains an option that is being studied.

The state's plan for addressing lead levels in city tap water comes 17 months after the city changed the source of its drinking water from the Detroit system to the Flint River while a regional pipeline to serve the greater Genesee County area is being built from Lake Huron.

A Hurley Medical Center doctor's study that was released this month showed the number of children in the city with elevated blood levels nearly doubled after the city started using the river as a water source in 2014 and nearly tripled in two "high-risk" ZIP codes: 48503 and 48504.

State officials initially questioned the Hurley data, as well as testing by Virginia Tech university researchers that showed higher lead in water levels than city testing has shown.

But the chief medical executive for the state confirmed today that the state's own data is consistent with the Hurley study for those two ZIP codes 48503 and 48504.

Lead levels of children in those zip codes were 2.7 times higher than the rest of Genesee County while Flint was still using Lake Huron water, and it was 3.2 times higher after the switch to the river, said Dr. Eden Wells, chief medical executive for the Michigan Department of Health and Human Services.

Snyder was not expected to be at today's news conference but said state officials have "a concern about Flint's drinking water in terms of what we see in terms of lead."

The governor and Department of Environmental Quality Director Dan Wyant said the city's water is lead free when it leaves the treatment plant and said the state has followed established protocols for testing at the plant and inside Flint homes.

"There is a real concern and issue (with lead in water once) it ends up in people's homes," Snyder said.

The plan introduced today is designed to address the lead concerns.

In addition to the funding for filters and the water testing at schools, it includes:

•□□□□□□□□ Expanded lead exposure testing

•□□□□□□□□ Continued free testing of water in homes

•□□□□□□□□ Assistance with expediting completion of the Karegnondi Water Authority pipeline from Lake Huron

•□□□□□□□□ Stepped-up implementation of water treatment designed to better control corrosion

•□□□□□□□□ And help accelerating improvements to the water system -- potentially including lead service lines

The governor said the state is "very expeditiously" considering the benefit of switching Flint's water source back to the Detroit system but said that review is not complete.

Snyder called a connection to Detroit water "an alternative" that remains possible.

To: Beckmann, Ronna Erin[beckmann.ronna@epa.gov]
Cc: Hedman, Susan[hedman.susan@epa.gov]; Henry, Timothy[henry.timothy@epa.gov]; Fortin, Denise[Fortin.Denise@epa.gov]; Kelley, Jeff[kelley.jeff@epa.gov]; Deamer, Eileen[deamer.eileen@epa.gov]
From: Hyde, Tinka
Sent: Fri 10/2/2015 10:43:16 PM
Subject: Re: Kildee question regarding state law

Questions regarding interpretation of Michigan DWSRF statute should be directed to MDEQ.

Sent from my iPhone

On Oct 2, 2015, at 4:54 PM, Beckmann, Ronna Erin <beckmann.ronna@epa.gov> wrote:

> Who would know the answer to the question below?
>
> Thanks,
>
> Ronna Beckmann
> Office of the Regional Administrator
> U.S. Environmental Protection Agency
> Region 5
>
> Begin forwarded message:
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>> **From:** "Dickinson, Jordan" <Jordan.Dickinson@mail.house.gov>
>> **Date:** October 2, 2015 at 4:43:28 PM CDT
>> **To:** "Beckmann, Ronna Erin" <beckmann.ronna@epa.gov>
>> **Subject: RE: STATEMENT: Congressman Dan Kildee on Flint Water State Action Plan**
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“stubs” or “customer service connections”) are eligible for DWRF assistance. The installation of

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billing software to process the information obtained from the meters is not eligible.

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March 2005 Lead and Copper Rule. The four main functions of the Rule are:

A. Require water suppliers to optimize their treatment systems to control corrosion in

customer's plumbing.

B. Determine tap water levels of lead and copper for customers who have lead service lines

or lead-based solder in their plumbing systems.

C. Rule out the source water as a source of significant lead levels.

D. If action levels are exceeded (i.e., 15 ppb), require the suppliers to educate their

customers about lead and suggest actions they can take to reduce their exposure to

lead through public notices and public education programs. If a water system, after

installing and optimizing corrosion control treatment, continues to fail to meet the lead

action level, it must begin replacing the lead service lines under its ownership.

The need for lead service line replacement due to an action level exceedance must be

discussed in the project plan.

To: Hyde, Tinka[hyde.tinka@epa.gov]
Cc: Hedman, Susan[hedman.susan@epa.gov]; Henry, Timothy[henry.timothy@epa.gov]; Fortin, Denise[Fortin.Denise@epa.gov]; Kelley, Jeff[kelley.jeff@epa.gov]; Deamer, Eileen[deamer.eileen@epa.gov]
From: Beckmann, Ronna Erin
Sent: Sat 10/3/2015 12:33:55 AM
Subject: Re: Kildee question regarding state law

Thank you!

Ronna Beckmann
Office of the Regional Administrator
U.S. Environmental Protection Agency
Region 5

On Oct 2, 2015, at 5:43 PM, Hyde, Tinka <hyde.tinka@epa.gov> wrote:

> Questions regarding interpretation of Michigan DWSRF statute should be directed to MDEQ.
>
> Sent from my iPhone
>
> On Oct 2, 2015, at 4:54 PM, Beckmann, Ronna Erin <beckmann.ronna@epa.gov> wrote:
>
>> Who would know the answer to the question below?
>>
>> Thanks,
>>
>> Ronna Beckmann
>> Office of the Regional Administrator
>> U.S. Environmental Protection Agency
>> Region 5
>>
>> Begin forwarded message:
>>
>>> **From:** "Dickinson, Jordan" <Jordan.Dickinson@mail.house.gov>
>>> **Date:** October 2, 2015 at 4:43:28 PM CDT
>>> **To:** "Beckmann, Ronna Erin" <beckmann.ronna@epa.gov>
>>> **Subject: RE: STATEMENT: Congressman Dan Kildee on Flint Water State Action Plan**
>>>
>>> I talked to Sen. Ananich's office and they could not find in state law where

it prevents the SRF from being used for lead line replacement on private property. In fact, in this guidance document it says that SRF funds CAN be used for private lead service line replacement. I was wondering if you knew where in the statute it said this?

http://www.michigan.gov/documents/deq/deq-ess-mfs-formsguidance-DWeligguide_248792_7.pdf

On page 19 it says:

The installation of service lines located within a public right of way (commonly referred to as

“stubs” or “customer service connections”) are eligible for DWRF assistance. The installation of

service lines from the “stub” to the privately-owned home or building will not be eligible for

DWRF assistance unless that portion of the service line is also owned by the water supplier or

it’s a lead service line that needs to be replaced as discussed below.

The installation of water meters for a new waterworks system or an existing unmetered system

is eligible for DWRF assistance, provided the meters are owned by the water supplier. The

replacement or upgrading of existing water meters is also allowable if adequate need has been

demonstrated in the project plan. An example would be upgrading meters to have remote read

capabilities. While ancillary costs such as providing the meter reading equipment is eligible, billing software to process the information obtained from the meters is not eligible.

Effective January 30, 2006, the replacement of lead water service laterals, both the public and

the privately-owned portions, are eligible for DWRF assistance if necessary to comply with the

March 2005 Lead and Copper Rule. The four main functions of the Rule are:

A. Require water suppliers to optimize their treatment systems to control corrosion in

customer's plumbing.

B. Determine tap water levels of lead and copper for customers who have lead service lines

or lead-based solder in their plumbing systems.

C. Rule out the source water as a source of significant lead levels.

D. If action levels are exceeded (i.e., 15 ppb), require the suppliers to educate their

customers about lead and suggest actions they can take to reduce their exposure to

lead through public notices and public education programs. If a water system, after

installing and optimizing corrosion control treatment, continues to fail to meet the lead

action level, it must begin replacing the lead service lines under its ownership.

The need for lead service line replacement due to an action level exceedance must be

discussed in the project plan.

To: Deltoral, Miguel[deltoral.miguel@epa.gov]
From: Porter, Andrea
Sent: Mon 10/5/2015 6:06:29 PM
Subject: FW: Detroit data in SDWIS

fyi

From: Crooks, Jennifer
Sent: Thursday, October 01, 2015 12:30 PM
To: Shoven, Heather
Cc: Porter, Andrea
Subject: FW: Detroit data in SDWIS

Heather/Andrea—(sorry I forgot to cc you both---brain freeze…) Who are we to tell this to at OGC? Or at OGWDW?

Jen

From: Crooks, Jennifer
Sent: Thursday, October 01, 2015 10:33 AM
To: Thomas Poy; Bair, Rita; Deltoral, Miguel; Damato, Nicholas
Subject: FW: Detroit data in SDWIS

Michigan DEQ did respond that Detroit's data as a (b)(3) system is in error. See State response below.

Jennifer

From: Donaldson, Kristina (DEQ) [mailto:DONALDSONK@michigan.gov]
Sent: Thursday, October 01, 2015 10:25 AM
To: Crooks, Jennifer
Cc: Shoven, Heather; Porter, Andrea; Philip, Kris (DEQ)
Subject: RE: Detroit data in SDWIS

Hi Jennifer,

You are correct that there is an error. Detroit did install corrosion control in the 1990s, it was demonstrated as optimized and in 1999 we established water quality parameters for the city.

We plan to review the SDWIS entries and make corrections as needed before the next data submission.

Thanks!

Kris Donaldson, P.E.

District Supervisor

Office of Drinking Water & Municipal Assistance

Michigan Department of Environmental Quality

27700 Donald Court

Warren, MI 48092

ph. 586-753-3759

fax. 586-753-3831

From: Crooks, Jennifer [mailto:crooks.jennifer@epa.gov]
Sent: Tuesday, September 29, 2015 3:20 PM
To: Donaldson, Kristina (DEQ)
Cc: Shoven, Heather; Porter, Andrea; Philip, Kris (DEQ)
Subject: Detroit data in SDWIS

Hi, Kris. We were looking at Detroit data in SDWIS this morning, and I'm not sure about some data—see below. Under "Event Milestone Description", it says about Detroit "System deemed optimized without

Optimal Corrosion Control Treatment (OCCT)", and the reason was "B3", which is Michigan rule 604f(2)(b)(iii). But I thought that Detroit did exceed the PQL (5ppb) back in the early 90's and that the City did install CCT, so it can't be a B3. Detroit used the Modified Consecutive System approach in the early 90's to collect data from all the sampling at consecutive systems, so it could evaluate the water as a single system. So, I think the above 2 data entries (seen below) are incorrect?

Thank you, Kris.

Jennifer

From: Porter, Andrea
Sent: Tuesday, September 29, 2015 12:34 PM
To: Crooks, Jennifer
Subject: FW: flint --> lcr milestone data in sdwis/fed (no info for flint; deem for detroit)

fyi

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MI00[illegible]	DETROIT CITY OF	6/30/1999	5/19/2004	DEEM	System deemed optimized without OCCT	B3	Serving greater than 50,000: met action levels

Thanks,

Andrea Porter

Environmental Engineer

Ground Water & Drinking Water Branch

U.S. EPA, Region 5 (WG-15J)

77 W. Jackson Blvd.

Chicago, IL 60604

Phone: 312-886-4427

Fax: 312-697-2656

To: Poy, Thomas[poy.thomas@epa.gov]; Bair, Rita[bair.rita@epa.gov]; Damato, Nicholas[damato.nicholas@epa.gov]; Glowacki, Joanna[glowacki.joanna@epa.gov]; Porter, Andrea[porter.andrea@epa.gov]; Crooks, Jennifer[crooks.jennifer@epa.gov]; Schock, Michael[Schock.Michael@epa.gov]; Lytle, Darren[Lytle.Darren@epa.gov]
From: Deltoral, Miguel
Sent: Mon 10/5/2015 6:42:19 PM
Subject: OCCT Designations for Detroit and Chicago Groups
Detroit and consecutives OCCT Designations.pdf
Chicago and consecutives OCCT Designations.pdf

Hi all,

Attached are the OCCT designations for the Chicago interconnected systems and the Detroit interconnected systems.I asked Andrea to pull the SDWIS data for these two groups of systems (thank you kindly, Andrea!)

All large consecutive systems in the Chicago interconnection are appropriately designated as "system deemed optimized without OCCT" with a reason code of WQP (meaning OWQPs have been designated for them). Chicago's OCCT designation is incorrect (system designated optimized without treatment) and should be updated.

All of the large systems in the Detroit interconnection are also designated as "system deemed optimized without OCCT" but they all have a reason code of '(b)(3)'. DEQ has acknowledged that the Detroit reason code of '(b)(3) is incorrect. It should be WQP and they will fix that in the next update. For whatever reason, Flint does not have anything reported for either the designation code or reason code.

Miguel A. Del Toral
Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

To: Deltoral, Miguel[deltoral.miguel@epa.gov]
From: Porter, Andrea
Sent: Mon 10/5/2015 7:13:12 PM
Subject: flint: email chain between steve busch and yanna --> does this help with your response to jeff?

Hi Miguel,

Can you use the email chain below to help respond to Jeff?

Especially this excerpt from Steve Busch (with his incorrect interpretations of LCR, along with his claim that Flint is not designated as having OCCT – meaning it's definitely not b3):

"Michigan has implemented an EPA approved modified consecutive system approach to lead and copper monitoring where a wholesale water supply sells water to other community water systems. In addition, while water quality parameter (WQP) monitoring occurs at both the water treatment plant and in the combined distribution system, a WQP range is only required to be established at the water treatment plant tap after the system has demonstrated optimized corrosion control treatment (OCCT).

Thus when the City of Flint was a customer of the Detroit Water and Sewerage Department (DWSD), the City of Flint participated in WQP monitoring of its distribution system, but ranges were established only for the OCCT at DWSD treatment plants. The attached letter from our Department established the minimum levels for pH and phosphate dosage in 2000.

As the City of Flint water treatment plant has not yet installed such treatment or been given the designation of OCCT these plant tap values have not been established.

However, the City of Flint WTP has continued to maintain the minimum pH value requirement previously established for DWSD

As noted in your Working Group Report to the NDWAC, "Corrosion Control Treatment (CCT) involves the addition of chemicals (e.g. orthophosphates or silicate) to create a barrier between the pipes and the drinking water, or to modify drinking water chemistry (such as pH and hardness) to inhibit the potential for corrosion."

Should you consider the Flint WTP softening process to be OCCT, then the City already continues to comply with the OCCT requirements as the City of Flint has never had 10% or more of compliance tap samples exceed the 15 ppb action level. Even prior to DWSD's established OCCT the City of Flint lead compliance monitoring has never exceeded the 15 ppb action level."

Let me know if there's more I can dig up for you.

Thanks,

Andrea Porter

Environmental Engineer

Ground Water & Drinking Water Branch

U.S. EPA, Region 5 (WG-15J)

77 W. Jackson Blvd.

Chicago, IL 60604

Phone: 312-886-4427

Fax: 312-697-2656

From: Yanna Lambrinidou [mailto:pnalternatives@yahoo.com]
Sent: Monday, September 28, 2015 11:30 AM
To: Busch, Stephen (DEQ)
Cc: Benzie, Richard (DEQ); Cook, Pat (DEQ); Prysby, Mike (DEQ); Wurfel, Brad (DEQ); Hyde, Tinka
Subject: Re: question about optimal WQP ranges for Flint's water

Dear Mr. Busch,

I appreciate your response.

Would you be able to send me a copy of the modified consecutive system approach to lead and copper monitoring that EPA approved?

I am sorry I cannot route my question through the NDWAC or my WG. I am not a NDWAC member, and my WG disbanded when our final report was completed back in August. I apologize if I have caused any confusion. The questions I am posing come solely from me because I am in the process of writing a dissenting opinion about the NDWAC LCR WG recommendations that is due to EPA in a couple of weeks. One of the main reasons I am writing this opinion is because of concerns I have about the LCR's CCT requirement. Your experience with and implementation of the LCR in Flint is extremely helpful to me in deepening my understanding about the LCR's CCT requirement and will undoubtedly allow me to write a more informed discussion.

I thank you in advance for your help on this matter and your support of ongoing efforts to assess the LCR carefully and thoroughly.

Kindly,

Yanna Lambrinidou

Yanna Lambrinidou PhD

Parents for Nontoxic Alternatives
PO Box 6283
Washington DC 20015
P 202.997.1834
B www.dcwasawatch.blogspot.com

From: "Busch, Stephen (DEQ)" <BUSCHS@michigan.gov>
To: Yanna Lambrinidou <pnalternatives@yahoo.com>
Cc: "Benzie, Richard (DEQ)" <BENZIER@michigan.gov>; "Cook, Pat (DEQ)" <COOKP@michigan.gov>; "Prysby, Mike (DEQ)" <PRYSBYM@michigan.gov>; "Wurfel, Brad (DEQ)" <WurfelB@michigan.gov>; "hyde.tinka@epa.gov" <hyde.tinka@epa.gov>
Sent: Friday, September 25, 2015 8:26 AM
Subject: RE: question about optimal WQP ranges for Flint's water

Dr. Lambrinidou,

I'm sorry for the delay in my response. As some of your questions relate more to statewide program implementation I have requested assistance with the response from staff within our central program office. However, these staff were attending and participating in an offsite (American Water Works Association Conference Michigan Section) conference last week.

Michigan has implemented an EPA approved modified consecutive system approach to lead and copper monitoring where a wholesale water supply sells water to other community water systems. In addition, while water quality parameter (WQP) monitoring occurs at both the water treatment plant and in the combined distribution system, a WQP range is only required to be established at the water treatment plant tap after the system has demonstrated optimized corrosion control treatment (OCCT).

Thus when the City of Flint was a customer of the Detroit Water and Sewerage Department (DWSD), the City of Flint participated in WQP monitoring of its distribution system, but ranges were established only for the OCCT at DWSD treatment plants. The attached letter from our Department established the minimum levels for pH and phosphate dosage in 2000.

As the City of Flint water treatment plant has not yet installed such treatment or been given the designation of OCCT these plant tap values have not been established.

However, the City of Flint WTP has continued to maintain the minimum pH value requirement previously established for DWSD

As noted in your Working Group Report to the NDWAC, “Corrosion Control Treatment (CCT) involves the addition of chemicals (e.g. orthophosphates or silicate) to create a barrier between the pipes and the drinking water, or to modify drinking water chemistry (such as pH and hardness) to inhibit the potential for corrosion.”

Should you consider the Flint WTP softening process to be OCCT, then the City already continues to comply with the OCCT requirements as the City of Flint has never had 10% or more of compliance tap samples exceed the 15 ppb action level. Even prior to DWSD’s established OCCT the City of Flint lead compliance monitoring has never exceeded the 15 ppb action level.

If you have additional questions we would appreciate having them routed through the NDWAC and your Working Group. Thanks.

Stephen Busch, P.E.

MDEQ Lansing District Coordinator

Office of Drinking Water and Municipal Assistance

Lansing and Jackson District Supervisor

517-643-2314

buschs@michigan.gov

From: Yanna Lambrinidou [mailto:pnalternatives@yahoo.com]
Sent: Wednesday, September 16, 2015 7:22 PM
To: Busch, Stephen (DEQ); Wurfel, Brad (DEQ)
Subject: Re: question about optimal WQP ranges for Flint's water

Dear Mr. Busch,

Thank you for your quick response. I appreciate the information at, I am sure, a very busy time for you and MDEQ.

Could you please help me understand the following?

When you say that all previous optimal water quality parameter ranges would have been established for the Detroit water utility (not for the City of Flint), do you mean that MDEQ never set optimal water quality parameter ranges *specifically* for Flint before Flint's switch to Flint River water?

It is my impression, please correct me if I'm wrong, that under the LCR, all large systems -- whether they are consecutive or not -- must have optimal water quality parameter ranges designated by states *specifically for them* (at the time when these systems are deemed to have optimized their treatment). Is there language in the LCR I am missing that allows a utility not to have optimal quality parameter ranges established specifically for it?

My second question is this: If the City of Flint had no optimal water quality parameter ranges established specifically for it in the past, how did it achieve LCR compliance? Isn't it the case that utility-specific optimal water quality parameter ranges (and maintenance of these ranges) are required for all large systems to avoid an LCR violation?

I would appreciate your assistance on this matter, as it will shed light on an issue that seems to be very important for EPA's assessment of and upcoming revisions to the LCR.

Kindly,

Yanna Lambrinidou

Yanna Lambrinidou PhD
Parents for Nontoxic Alternatives
PO Box 6283
Washington DC 20015
P 202.997.1834
B www.dcwasawatch.blogspot.com

From: "Busch, Stephen (DEQ)" <BUSCHS@michigan.gov>
To: Yanna Lambrinidou <pnalternatives@yahoo.com>; "Wurfel, Brad (DEQ)" <WurfelB@michigan.gov>
Sent: Monday, September 14, 2015 11:05 AM
Subject: RE: question about optimal WQP ranges for Flint's water

Dr. Lambrinidou,

All previous water quality parameter ranges would have been established for the City of Flint's wholesale finished water supplier, the Detroit Water and Sewerage Department, not the City of Flint itself.

As the City of Flint has not yet established optimized corrosion control treatment, the MDEQ is not yet at the point of regulatory requirements where the range of water quality parameters would be set.

Stephen Busch, P.E.

MDEQ Lansing District Coordinator

Office of Drinking Water and Municipal Assistance

Lansing and Jackson District Supervisor

517-643-2314

buschs@michigan.gov

From: Yanna Lambrinidou [mailto:pnalternatives@yahoo.com]
Sent: Thursday, September 10, 2015 11:11 AM
To: Wurfel, Brad (DEQ); Busch, Stephen (DEQ)
Subject: question about optimal WQP ranges for Flint's water

Good morning Mr. Wurfel and Mr. Busch,

As a member of the EPA National Drinking Water Advisory Council (NDWAC) Lead and Copper Rule (LCR) workgroup that just completed its recommendations to EPA about the agency's upcoming revisions to the LCR, I am watching with great interest and concern the developments in Flint in relation to lead. I am looking for information on the optimal water quality parameter (WQP) ranges that MDEQ has set for Flint's water. Are those posted online? If so, could you send me the link? If not, could you let me know what they are?

Thank you kindly,

Yanna Lambrinidou PhD

Parents for Nontoxic Alternatives
PO Box 6283
Washington DC 20015
P 202.997.1834
B www.dcwasawatch.blogspot.com

To: Kempic, Jeffrey[Kempic.Jeffrey@epa.gov]
Cc: Poy, Thomas[poy.thomas@epa.gov]; Damato, Nicholas[damato.nicholas@epa.gov]; Glowacki, Joanna[glowacki.joanna@epa.gov]; Shoven, Heather[shoven.heather@epa.gov]; Porter, Andrea[porter.andrea@epa.gov]; Moriarty, Edward[Moriarty.EdwardJ@epa.gov]; Crooks, Jennifer[crooks.jennifer@epa.gov]
From: Deltoral, Miguel
Sent: Mon 10/5/2015 8:44:10 PM
Subject: Fw: Flint Corrosion Control?

Hi Jeff,

For what it's worth, here's the email exchange with Pat Cook in DEQ.

Miguel A. Del Toral
Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

From: Cook, Pat (DEQ) <COOKP@michigan.gov>
Sent: Friday, May 1, 2015 10:38 AM
To: Deltoral, Miguel
Cc: Porter, Andrea; Crooks, Jennifer; Poy, Thomas; Benzie, Richard (DEQ); Busch, Stephen (DEQ)
Subject: RE: Flint Corrosion Control?

Hi Miguel - sorry, I should have been more specific in my previous email. The rules you stated below allow large systems to be considered having optimal corrosion control if they have data from two consecutive 6 month monitoring periods that meet specific criteria. DEQ-ODWMA has not made a formal decision as to whether or not the City of Flint meets the exemption criteria or will be required to do a corrosion control study since Flint has only completed one round of 6 month monitoring. The City of Flint's second round of monitoring will be completed by June 30, 2015, and we will make a formal decision at that time. If my memory is correct, this is consistent with the process followed in the early 1990's for large systems when the Pb/Cu rule was first implemented. The Department waits until large systems complete both rounds of full scale, 6 month monitoring before making a decision about optimal corrosion control. If it is determined that Flint has to install corrosion control treatment, the rule allows up to 2 years to complete a study and 2 additional years to install the treatment unless we set a shorter time frame.

As Flint will be switching raw water sources in a just over one year from now, raw water quality will be completely different than what they currently use. Requiring a study at the current time will be of little to no value in the long term control of these chronic contaminants.

Finally, the City of Flint's sampling protocols for lead and copper monitoring comply will all current state and federal requirements. Any required modifications will be implemented at the time when such future regulatory requirements take effect.

Patrick Cook, P.E.

Community Drinking Water Unit

Office of Drinking Water & Municipal Assistance

Michigan Department of Environmental Quality

Phone: (517) 284-6514

cookp@michigan.gov

From: Deltoral, Miguel [mailto:deltoral.miguel@epa.gov]
Sent: Saturday, April 25, 2015 10:11 AM
To: Cook, Pat (DEQ)
Cc: Porter, Andrea; Crooks, Jennifer; Poy, Thomas
Subject: Re: Flint Corrosion Control?

Hi Pat,

I'll be heading out to MI for RTCR tomorrow and won't see email until next Tuesday, but I wanted to follow up on this because Flint has essentially not been using any corrosion control treatment since April 30, 2014 and they have LSLs. Given the very high lead levels found at one home and the pre-flushing happening at Flint, I'm worried that the whole town may have much higher lead levels than the compliance results indicated, since they are using pre-flushing ahead of their compliance sampling.

If the source water lead is non-detect (zero), then according to 141.89(a)(3) they should use zero for that source water value:

"All lead and copper levels measured between the PQL and MDL must be either reported as measured or they can be reported as one-half the PQL specified for lead and copper in paragraph (a)(1)(ii) of this section. All levels below the lead and copper MDLs must be reported as zero."

As far as the treatment determination, there are only two scenarios for a large system to be deemed to have optimized corrosion control without treatment and Flint does not appear to meet either:

The first is at 141.81(b)(3)

Any water system is deemed to have optimized corrosion control if it submits results of tap water monitoring conducted in accordance with § 141.86 and source water monitoring conducted in accordance with § 141.88 that demonstrates for two consecutive 6-month monitoring periods that the difference between the 90th percentile tap water lead level computed under §141.80(c)(3), and the highest source water lead concentration is less than the Practical Quantitation Level for lead specified in § 141.89(a)(1)(ii).

If Flint's highest source water lead was zero, and their 90th percentile was 0.006, then Flint does not meet this criteria, because the difference must be LESS THAN the PQL (i.e., 0.004 or less). 0.006 - 0 = 0.006.

The second is at 141.81(b)(3)(i):

Those systems whose highest source water lead level is below the Method Detection Limit may also be deemed to have optimized corrosion control under this paragraph if the 90th percentile tap water lead level is less than or equal to the Practical Quantitation Level for lead for two consecutive 6-month monitoring periods.

Although Flint's source water lead was non-detect (zero), the 90th percentile lead level is 0.006 which is above the PQL of 0.005, so Flint would not meet this criteria either.

Am I missing something?

Miguel A. Del Toral

Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

From: Cook, Pat (DEQ) <COOKP@michigan.gov>
Sent: Friday, April 24, 2015 12:45 PM
To: Deltoral, Miguel
Subject: RE: Flint Corrosion Control?

Total Lead collected from the plant tap on 5/22/14 was zero.

pat

From: Deltoral, Miguel [mailto:deltoral.miguel@epa.gov]
Sent: Friday, April 24, 2015 11:59 AM
To: Cook, Pat (DEQ)
Cc: Poy, Thomas; Porter, Andrea
Subject: Re: Flint Corrosion Control?

What was the source water lead level?

Miguel A. Del Toral

Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)

Chicago, IL 60604
Phone: (312) 886-5253

From: Cook, Pat (DEQ) <COOKP@michigan.gov>
Sent: Friday, April 24, 2015 10:43 AM
To: Deltoral, Miguel
Cc: Poy, Thomas; Porter, Andrea
Subject: RE: Flint Corrosion Control?

Hi Miguel - Flint is currently not practicing corrosion control treatment at the WTP. When they started treating water at their WTP last spring, we placed them on full chart (100 sites) Pb/Cu monitoring for two consecutive 6 month periods. WQ monitoring is also being conducted. The first round of samples after switch-over from DWSD (July 1, 2014 – Dec 31, 2014) had 90th percentiles of 6 ppb for Lead and 110 ppb for Copper. The second round of samples (Jan 1, 2015 – June 30, 2015) is underway with approximately 20 of the 100 sample site results in. The highest lead result out of the 20 received thus far is 13 ppb.

Based on the matrix of recommended corrosion control study components for Large PWS's for both Lead and Copper, there are no additional requirements for the City of Flint based on the levels of lead and copper in the current source water and the results of the lead and copper distribution monitoring. The only provision of the Lead & Copper Rule which classifies the existing treatment of large PWSs as optimized for corrosion control is when the difference between the 90% Pb-TAP and Pb-POE is less than the lead practical quantitative level (PQL) for each six-month period of the initial monitoring program. By definition, the PQL for lead is 0.005 mg/L; and the lead value for the source water used in this determination is the highest source water lead concentration. If this condition is met, then no study or testing is required. We believe this condition has been met for Flint. However, we will re-evaluate this after the 2nd round of 6 month sampling is completed.

If you have any further questions, please contact the Lansing District Supervisor, Steve Busch at (517) 643-2314 or at buschs@michigan.gov.

Have a good (and hopefully warm) weekend!

Patrick Cook, P.E.

Community Drinking Water Unit

Office of Drinking Water & Municipal Assistance

Michigan Department of Environmental Quality

Phone: (517) 284-6514

cookp@michigan.gov

From: Deltoral, Miguel [mailto:deltoral.miguel@epa.gov]
Sent: Thursday, April 23, 2015 12:33 PM
To: Cook, Pat (DEQ)
Cc: Poy, Thomas; Porter, Andrea
Subject: Flint Corrosion Control?

Hi Pat,

What's Flint doing now (post Detroit) for corrosion control treatment?

Miguel A. Del Toral

Regulations Manager

Ground Water and Drinking Water Branch

77 West Jackson Blvd (WG-15J)

Chicago, IL 60604

Phone: (312) 886-5253

To: Kempic, Jeffrey[Kempic.Jeffrey@epa.gov]; Glowacki, Joanna[glowacki.joanna@epa.gov]; Poy, Thomas[poy.thomas@epa.gov]; Damato, Nicholas[damato.nicholas@epa.gov]
Cc: Shoven, Heather[shoven.heather@epa.gov]; Crooks, Jennifer[crooks.jennifer@epa.gov]; Porter, Andrea[porter.andrea@epa.gov]; Moriarty, Edward[Moriarty.EdwardJ@epa.gov]
From: Deltoral, Miguel
Sent: Mon 10/5/2015 8:46:47 PM
Subject: Re: Proposed EPA comment on Michigan/Flint press conference announcing steps to address lead levels in Flint drinking water
Detroit and consecutives OCCT Designations.pdf

Sorry, I forgot the file...

Miguel A. Del Toral
Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

From: Deltoral, Miguel
Sent: Monday, October 5, 2015 03:42 PM
To: Kempic, Jeffrey; Glowacki, Joanna; Poy, Thomas; Damato, Nicholas
Cc: Shoven, Heather; Crooks, Jennifer; Porter, Andrea; Moriarty, Edward
Subject: Re: Proposed EPA comment on Michigan/Flint press conference announcing steps to address lead levels in Flint drinking water

Hi Jeff, see responses below your questions. Feel free to call any time if you have questions.

Miguel A. Del Toral
Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

From: Deltoral, Miguel
Sent: Monday, October 5, 2015 01:50 PM
To: Kempic, Jeffrey; Glowacki, Joanna; Poy, Thomas; Damato, Nicholas
Cc: Shoven, Heather; Crooks, Jennifer; Porter, Andrea; Moriarty, Edward
Subject: Re: Proposed EPA comment on Michigan/Flint press conference announcing steps to address lead levels in Flint drinking water

Hi Jeff,

DEQ has already informed us that the Detroit (b)(3) designation in SDWIS is a mistake and they are going to update that. I'll try to get you answers to your other Q's asap.

Miguel A. Del Toral
Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

From: Kempic, Jeffrey
Sent: Monday, October 5, 2015 01:46 PM
To: Deltoral, Miguel; Glowacki, Joanna; Poy, Thomas; Damato, Nicholas
Cc: Shoven, Heather; Crooks, Jennifer; Porter, Andrea; Moriarty, Edward
Subject: RE: Proposed EPA comment on Michigan/Flint press conference announcing steps to address lead levels in Flint drinking water

Miguel,

I think there is a lot of confusion over the optimization status of Detroit and Flint. There is the apparent SDWIS error listing Detroit as a (b)(3) and I think some of the rationale being put forward by Michigan operate from a (b)(3) basis including the (b)(3)(v) timeline issue for the year of monitoring. Until we know how Flint was characterized, it is difficult to craft a response. There is a convoluted way that Flint could have been deemed (b)(3) based on the rule change that was proposed in 1996 and finalized in the 2000 Minor Revisions. We added 141.81(b)(3)(i) that stated that those systems whose highest source water lead level is below the Method Detection Limit may also be deemed to have optimized corrosion control under this paragraph if the 90th percentile tap water lead level is less than **or equal** to the Practical Quantitation Level (5 ug/L) for lead for two consecutive 6-month monitoring periods. The two 6-month rounds from 1997 are both equal to the PQL of 5 ug/L. The subsequent annual round in 1998 with a 90th percentile of 7 ug/L should have negated the (b)(3) designation if one had been applied based on the anticipated rule change or retroactively applying the rule change from the 2000 Minor Revisions to the 1997 data. There is also the possibility that the State only focused on the 90th percentiles and did not focus on the applicable monitoring periods (6-month vs. annual).

I think answers to the following questions would provide a lot of clarify to respond to Flint and the State of Michigan:

1. Was Flint ever characterized as a (b)(3) system based on the 1997 data? If yes, did the State fail to remove this designation when Flint could no longer meet the criterion when the 90th percentile rose and the difference was above 5 ug/L in the 1998 data. To re-qualify Flint would have needed two consecutive six-month monitoring periods, which was not done as all monitoring was on annual or triennial basis.

MDT:

Flint was never a (b)(3) system based on their own compliance data. I did take into account that the LCRMR added (b)(3)(i) which would allow them to be at 5 ug/L instead of 4 ug/L, but the final LCRMR was published in January 2000, so by the time Flint could use the provision (after 2000), Flint's 90th percentile was already at 7ppb (1998), making it a moot point to mention it, but I guess for the sake of completeness I should. It might save us all another week of debate.

Regarding whether Flint was ever designated or considered a (b)(3) by the State…there are no OCCT milestones reported to SDWIS for Flint (see attached). I don't know why that is, but all other large systems were reported as "system deemed optimized without OCCT" and with a reason code of "(b)(3)". In an email exchange with Pat Cook (DEQ) earlier this year, he also said Flint was a (b)(3), but their numbers made no sense. I will forward that email exchange to you. I think getting into all of this will muddy the waters and folks are already having a tough time understanding, so it may suffice to just say Flint never met the (b)(3) criteria, so that we can reduce the complexity of the discussions.

2. If Flint was never a (b)(3) or fell out of being (b)(3) based on the 1998 and/or 2000 data, did the State specify optimal water quality parameters for Flint? Did the OWQPs include a requirement for orthophosphate?

MDT:

The State never set OWQPs for any of the consecutive systems in the Detroit interconnection. The only system with OWQPs designated is Detroit. This is one of the biggest issues I brought up. If you have no OWQPs designated, there is no compliance measure. A system can turn off the treatment (i.e., disconnect from Detroit) and remain in compliance, because there is no minimum orthophosphate level set. This is why it's important to reinforce that OWQPs must be set for all large systems (consecutives included) unless they meet the (b)(3) criteria.

3. If there were State specified OWQPs for Flint, did the State change them when they approved the source and treatment change? If not, how did Flint comply with the orthophosphate requirements with no orthophosphate?

MDT: See response to 2. Above

4. Did the State mistakenly characterize Flint as a (b)(3) based on the two consecutive rounds of annual monitoring in 2001 and 2002 where Flint met the 90th percentile part of the (b)(3) criteria, but did not have the correct monitoring periods? Flint met the 90th percentile part of the (b)(3) criteria in all rounds until the 2014 data – post-switch.

MDT: No clue on this one. Pat Cook outlines the criteria (two six-month rounds) which Flint clearly doesn't meet, but also says they believe they meet it. There's lots of conflicting info we are getting from DEQ, so I think the easiest thing to do as I mentioned above is to just state plainly and simply that they never met the (b)(3) criteria.

I think responses to these questions would greatly help in crafting a response.

Let me know if you have questions.

Thanks

Jeff

From: Deltoral, Miguel
Sent: Monday, October 05, 2015 8:04 AM
To: Glowacki, Joanna; Poy, Thomas; Damato, Nicholas
Cc: Shoven, Heather; Crooks, Jennifer; Porter, Andrea; Moriarty, Edward; Kempic, Jeffrey
Subject: Re: Proposed EPA comment on Michigan/Flint press conference announcing steps to address lead levels in Flint drinking water

Honestly, I think the HQ folks are not understanding the rule provisions...

Can someone please tell me what data is being used to justify applying the 141.81(b)(3) criteria to Flint?

Even if we disregard the consecutive system agreement that is in place and look only at Detroit's or only at Flint's compliance data, since the source water lead is zero, the 90th lead percentile values for Detroit or Flint must be at/below 4 ug/L. It is clear from their compliance data (see below) that neither of them have ever met the (b)(3) criteria highlighted below. 141.81(b)(3)(iii) ONLY applies if you have met the (b)(3) or (b)(3)(i) criteria. Consequently, I don't see why they are even talking about (b)(3).

(3) Any water system is deemed to have optimized corrosion control if it submits results of tap water monitoring conducted in accordance with § 141.86 and source water monitoring conducted in accordance with § 141.88 that demonstrates for two consecutive 6-month monitoring periods that the difference between the 90th percentile tap water lead level computed under §141.80(c)(3), and the highest source water lead concentration is less than the Practical Quantitation Level for lead specified in § 141.89(a)(1)(ii).

(i) Those systems whose highest source water lead level is below the Method Detection Limit may also be deemed to have optimized corrosion control under this paragraph if the 90th percentile tap water lead level is less than or equal to the Practical Quantitation Level for lead for two consecutive 6-month monitoring periods.

The only time that Detroit conducted two consecutive six-month rounds of monitoring was in 1992 and 1997. They did not meet the (b)(3) criteria in either round. The rest of the monitoring is annual or triennial monitoring.

The only time that Flint conducted two six-month rounds of monitoring was in 1992 and 1997. They did not meet the (b)(3) criteria in either round. The rest of the monitoring is annual or triennial monitoring.

Therefore, unless folks are saying that the data from the entire interconnection of systems (Detroit + Flint + all others) is treated as a single system under 141.29 and collectively meets the (b)(3) criteria, I don't see how (b)(3) is even relevant in this discussion.

Detroit and Flint 90th percentile values

PWSID	PWS NAME	Monitoring Period	90th %ile Value (mg/L)
MI0001800	DETROIT CITY OF	1992-1	0.021
MI0001800	DETROIT CITY OF	1992-2	0.015
MI0001800	DETROIT CITY OF	1997-1	0.012
MI0001800	DETROIT CITY OF	1997-2	0.009
MI0001800	DETROIT CITY OF	1998-1	0.009
MI0001800	DETROIT CITY OF	1999-1	0.006
MI0001800	DETROIT CITY OF	2000-1	0.007
MI0001800	DETROIT CITY OF	2001-1	0.006
MI0001800	DETROIT CITY OF	2002-1	0.0116
MI0001800	DETROIT CITY OF	2003-2005	0.007
MI0001800	DETROIT CITY OF	2006-2008	0.004
MI0001800	DETROIT CITY OF	2009-2011	0.0034
MI0001800	DETROIT CITY OF	2012-2014	0.0023
MI0002310	FLINT, CITY OF	1992-1	0.015
MI0002310	FLINT, CITY OF	1992-2	0.014
MI0002310	FLINT, CITY OF	1997-1	0.005
MI0002310	FLINT, CITY OF	1997-2	0.005
MI0002310	FLINT, CITY OF	1998-1	0.007
MI0002310	FLINT, CITY OF	1999-1	0.005
MI0002310	FLINT, CITY OF	2000-1	0.007
MI0002310	FLINT, CITY OF	2001-1	0.004
MI0002310	FLINT, CITY OF	2002-1	0.004
MI0002310	FLINT, CITY OF	2003-2005	0.001

MI0002310	FLINT, CITY OF	2006-2008	0.000
MI0002310	FLINT, CITY OF	2009-2011	0.000
MI0002310	FLINT, CITY OF	2014-2	0.006

Miguel A. Del Toral

Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

From: Glowacki, Joanna
Sent: Sunday, October 4, 2015 07:58 PM
To: Poy, Thomas; Damato, Nicholas
Cc: Shoven, Heather; Deltoral, Miguel; Crooks, Jennifer
Subject: Fw: Proposed EPA comment on Michigan/Flint press conference announcing steps to address lead levels in Flint drinking water

Joanna Glowacki
Associate Regional Counsel
U.S. EPA, Region 5
77 West Jackson Boulevard (C-14J)
Chicago, IL 60604
312-353-3757

From: Frey, Bert
Sent: Friday, October 2, 2015 1:55:02 PM
To: Glowacki, Joanna
Cc: Lee, Sandra; Lupton, Jane
Subject: FW: Proposed EPA comment on Michigan/Flint press conference announcing steps to address lead levels in Flint drinking water

FYI

From: Neugeboren, Steven
Sent: Friday, October 02, 2015 1:48 PM
To: Meiburg, Stan; Hedman, Susan; Grevatt, Peter; Minoli, Kevin; Mitchell, Stacey; Levine, MaryEllen
Cc: Garbow, Avi; Harrison, Melissa; Kopocis, Ken; Fritz, Matthew; Vaught, Laura; Wehling, Carrie; Darman, Leslie; Kaplan, Robert; Frey, Bert
Subject: Re: Proposed EPA comment on Michigan/Flint press conference announcing steps to address lead levels in Flint drinking water

Avi's advice yesterday was **Attorney Client / Ex. 5**

Attorney Client / Ex. 5

Attorney Client / Ex. 5

Attorney Client / Ex. 5

Steven Neugeboren
Associate General Counsel
Water Law Office
U.S Environmental Protection Agency
202-564-5488
301-728-7899 (c)

From: Meiburg, Stan
Sent: Friday, October 2, 2015 1:38 PM
To: Hedman, Susan; Grevatt, Peter; Neugeboren, Steven; Minoli, Kevin; Mitchell, Stacey; Levine, MaryEllen
Cc: Garbow, Avi; Harrison, Melissa; Kopocis, Ken; Fritz, Matthew; Vaught, Laura
Subject: RE: Proposed EPA comment on Michigan/Flint press conference announcing steps to address lead levels in Flint drinking water

Attorney Client / Ex. 5

Attorney Client / Ex. 5 the facts of the situation warrant immediate action to implement corrosion control and it's a good thing that the State and city are moving forward to do this now.

Stan

A. Stanley Meiburg, Ph.D.

Acting Deputy Administrator

U.S. Environmental Protection Agency

MC-1102A

1200 Pennsylvania Avenue, NW

Washington, DC 20460

From: Hedman, Susan
Sent: Friday, October 02, 2015 1:31 PM
To: Meiburg, Stan; Grevatt, Peter; Neugeboren, Steven; Minoli, Kevin; Mitchell, Stacey; Levine, MaryEllen
Cc: Garbow, Avi; Harrison, Melissa; Kopocis, Ken; Fritz, Matthew; Vaught, Laura
Subject: RE: Proposed EPA comment on Michigan/Flint press conference announcing steps to address lead levels in Flint drinking water

Attorney Client / Ex. 5

Attorney Client / Ex. 5 That being said, EPA Region 5 has been urging the City and MDEQ to take immediate steps to implement corrosion control since results came in this summer showing that there have been 2 consecutive six-month periods during which the 90th percentile level is above 5 ug/L (ppb), which is the action level set out in 141.81(b)(3). This requirement was memorialized in a letter that MDEQ sent to the City of Flint on August 17th.

From: Meiburg, Stan
Sent: Friday, October 02, 2015 12:15 PM
To: Grevatt, Peter; Neugeboren, Steven; Minoli, Kevin; Mitchell, Stacey; Levine, MaryEllen
Cc: Garbow, Avi; Harrison, Melissa; Kopocis, Ken; Fritz, Matthew; Hedman, Susan; Vaught, Laura
Subject: RE: Proposed EPA comment on Michigan/Flint press conference announcing steps to address lead levels in Flint drinking water

Thanks, Peter. Susan, I hope this helps.

Stan

A. Stanley Meiburg, Ph.D.

Acting Deputy Administrator

U.S. Environmental Protection Agency

MC-1102A

1200 Pennsylvania Avenue, NW

Washington, DC 20460

From: Grevatt, Peter
Sent: Friday, October 02, 2015 1:14 PM
To: Meiburg, Stan; Neugeboren, Steven; Minoli, Kevin; Mitchell, Stacey
Cc: Garbow, Avi; Harrison, Melissa; Kopocis, Ken; Fritz, Matthew; Hedman, Susan; Vaught, Laura
Subject: RE: Proposed EPA comment on Michigan/Flint press conference announcing steps to address lead levels in Flint drinking water

Attorney Client / Ex. 5

Attorney Client / Ex. 5

From: Meiburg, Stan
Sent: Friday, October 02, 2015 12:51 PM
To: Neugeboren, Steven; Minoli, Kevin; Mitchell, Stacey
Cc: Garbow, Avi; Harrison, Melissa; Kopocis, Ken; Grevatt, Peter; Fritz, Matthew; Hedman, Susan; Vaught, Laura
Subject: FW: Proposed EPA comment on Michigan/Flint press conference announcing steps to address lead levels in Flint drinking water

Attorney Client / Ex. 5

Stan

A. Stanley Meiburg, Ph.D.

Acting Deputy Administrator

U.S. Environmental Protection Agency

MC-1102A

1200 Pennsylvania Avenue, NW

Washington, DC 20460

From: Hedman, Susan
Sent: Friday, October 02, 2015 12:38 PM
To: Meiburg, Stan; Fritz, Matthew; Burke, Thomas; Reynolds, Thomas; Vaught, Laura; Harrison, Melissa; Kopocis, Ken; Garbow, Avi; Giles-AA, Cynthia; Grevatt, Peter; Rupp, Mark
Subject: RE: Proposed EPA comment on Michigan/Flint press conference announcing steps to address lead levels in Flint drinking water

Attorney Client / Ex. 5

US EPA Regional Administrator comment on the State of Michigan and City of Flint press conference on October 2, 2015: Actions that the State of Michigan and the City of Flint announced today are important steps to protect public health. The immediate steps being taken to implement corrosion control will reduce lead in drinking water, as required by the Safe Drinking Water Act. US EPA will continue to provide technical assistance to the State of Michigan and the City of Flint to support their joint effort.

From: Hedman, Susan
Sent: Thursday, October 01, 2015 7:29 PM

To: Meiburg, Stan; Fritz, Matthew; Burke, Thomas; Reynolds, Thomas; Vaught, Laura; Harrison, Melissa; Kopocis, Ken; Avi Garbow; Cynthia Giles-AA; Grevatt, Peter
Subject: Proposed EPA comment on Michigan/Flint press conference announcing steps to address lead levels in Flint drinking water

Attorney Client / Ex. 5

US EPA Regional Administrator comment on the State of Michigan and City of Flint press conference on October 2, 2015: Actions that the State of Michigan and the City of Flint announced today will protect public health. The immediate steps being taken to implement corrosion control will reduce lead in drinking water, as required by the Safe Drinking Water Act. US EPA will continue to provide technical assistance to the State of Michigan and the City of Flint to support their joint effort.

1. **What about the interim report that has been attributed to a "rogue" EPA employee?** The interim report was prepared by a Region 5 employee as part of his regular duties at EPA. It was intended to be an internal document to brief EPA managers on lead levels in drinking water at three residential properties in Flint. The interim report notes that a "final report will be submitted once additional analyses have been completed on pipe and water samples." **Has a final report been prepared?** Yes. **Can I get a copy of the report?** The report contains Personally Identifiable Information and other confidential health data. If a FOIA request is submitted for the document, EPA attorneys will determine the extent to which a redacted document can be released. **Why was the interim report released without redaction?** EPA did not release the interim report to the public.

2. **What about the SDWA petition that was submitted to EPA on 10/1/2015?** EPA will review the petition.

3. **Are all large drinking water systems required to implement corrosion control?** Attorney Client / Ex. 5
Attorney Client / Ex. 5

Susan Hedman

Region 5 Administrator/Great Lakes National Program Manager

U.S. Environmental Protection Agency

77 West Jackson Blvd - 19th Floor

Chicago, Illinois 60604-3590

To: Hedman, Susan[hedman.susan@epa.gov]; Meiburg, Stan[Meiburg.Stan@epa.gov]; Sonich-Mullin, Cynthia[Sonich-Mullin.Cynthia@epa.gov]; Grevatt, Peter[Grevatt.Peter@epa.gov]
From: Burke, Thomas
Sent: Mon 10/5/2015 9:59:02 PM
Subject: Re: Flint

Susan,

I have been tied up with meetings all day and just saw the full email trail. Darren can cover the meeting, but the other request about source water is complex and ultimately a state and local decision. I would prefer we discuss first.

Tom

Thomas A. Burke, PhD, MPH
Deputy Assistant Administrator
EPA Science Advisor
Office of Research and Development
202-564-6620
burke.thomas@epa.gov

On Oct 5, 2015, at 4:14 PM, Hedman, Susan <hedman.susan@epa.gov> wrote:

> I just saw the notice saying that Michael Schock is out on vacation until October 14th. Does this mean that he won't be at the Flint Technical Advisory Committee meeting on Wednesday? If so, that could be a real problem – since people are counting on EPA to play a major role.
>
> **From:** Hedman, Susan
> **Sent:** Monday, October 05, 2015 3:11 PM
> **To:** Burke, Thomas; Schock, Michael; Lytle, Darren
> **Cc:** Meiburg, Stan
> **Subject:** Flint
>
> Tom, Michael and Darren –
>
> As you know, the Flint Technical Advisory Committee will be meeting on Wednesday. In advance of that meeting and a meeting that MDEQ Director Wyant will be having with Mayor Walling tomorrow at 10 am -- Director Wyant is asking whether it would be possible

for the three of you to reach out to his lab director George Krisztian. George's phone number is 517-204-0381. Director Wyant's Executive Assistant is also available to help with logistics – her name is Mary Beth Thelen and her contact info is THELENM2@michigan.gov / 517-284-6712.

MDEQ is seeking EPA technical assistance to weigh the relative merits of optimizing corrosion control for Flint River water versus returning to Detroit water during the next nine months – until Flint is able to be supplied with Lake Huron water through the new Karegnondi Water Authority pipeline. Director Wyant is not necessarily looking for a final answer by 10 am tomorrow, but he would at least like to clarify the specific questions that would need to be answered to make a decision.

Are you able to make that happen?

Thanks,

Susan

Susan Hedman

Region 5 Administrator/Great Lakes National Program Manager

U.S. Environmental Protection Agency

77 West Jackson Blvd - 19th Floor

Chicago, Illinois 60604-3590

To: Burke, Thomas[Burke.Thomas@epa.gov]; Meiburg, Stan[Meiburg.Stan@epa.gov]; Sonich-Mullin, Cynthia[Sonich-Mullin.Cynthia@epa.gov]; Grevatt, Peter[Grevatt.Peter@epa.gov]
From: Hedman, Susan
Sent: Mon 10/5/2015 10:18:24 PM
Subject: RE: Flint

Are you available by phone this evening around 8 pm eastern?

From: Burke, Thomas
Sent: Monday, October 05, 2015 4:59 PM
To: Hedman, Susan; Meiburg, Stan; Sonich-Mullin, Cynthia; Grevatt, Peter
Subject: Re: Flint

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EPA Science Advisor

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To: Hedman, Susan[hedman.susan@epa.gov]
Cc: Burke, Thomas[Burke.Thomas@epa.gov]; Sonich-Mullin, Cynthia[Sonich-Mullin.Cynthia@epa.gov]; Grevatt, Peter[Grevatt.Peter@epa.gov]
From: Meiburg, Stan
Sent: Mon 10/5/2015 10:34:37 PM
Subject: Re: Flint

I am. Do you need me or is this something you and Tom can deal with?

Stan

Sent from my iPhone

On Oct 5, 2015, at 6:18 PM, Hedman, Susan <hedman.susan@epa.gov> wrote:

> Are you available by phone this evening around 8 pm eastern?
>
> **From:** Burke, Thomas
> **Sent:** Monday, October 05, 2015 4:59 PM
> **To:** Hedman, Susan; Meiburg, Stan; Sonich-Mullin, Cynthia; Grevatt, Peter
> **Subject:** Re: Flint
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> Susan,
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To: Meiburg, Stan[Meiburg.Stan@epa.gov]
Cc: Burke, Thomas[Burke.Thomas@epa.gov]; Sonich-Mullin, Cynthia[Sonich-Mullin.Cynthia@epa.gov]; Grevatt, Peter[Grevatt.Peter@epa.gov]
From: Hedman, Susan
Sent: Mon 10/5/2015 10:57:44 PM
Subject: Re: Flint

Thanks Stan. If at all possible -- I'd like everyone to get on a brief call at 8 pm eastern:

Nonresponsive Conference Code

I think the real question they are asking is whether we can help figure out if it would be easier/faster to optimize corrosion control if Flint switches back to Detroit water. That's partially a source water question and partially a treatment question.

Sent from my iPhone

On Oct 5, 2015, at 5:34 PM, Meiburg, Stan <Meiburg.Stan@epa.gov> wrote:

> I am. Do you need me or is this something you and Tom can deal with?
>
> Stan
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> Sent from my iPhone
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From: Meiburg, Stan
Sent: Mon 10/5/2015 10:58:41 PM
Subject: RE: Flint

I'll be on it. Thanks, Susan.

A. Stanley Meiburg, Ph.D.

Acting Deputy Administrator

U.S. Environmental Protection Agency

MC-1102A

1200 Pennsylvania Avenue, NW

Washington, DC 20460

From: Hedman, Susan
Sent: Monday, October 05, 2015 6:58 PM
To: Meiburg, Stan
Cc: Burke, Thomas; Sonich-Mullin, Cynthia; Grevatt, Peter
Subject: Re: Flint

Thanks Stan. If at all possible -- I'd like everyone to get on a brief call at 8 pm eastern:

Nonresponsive Conference Code

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Sent from my iPhone

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>
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> >
> > **From:** Burke, Thomas
> > **Sent:** Monday, October 05, 2015 4:59 PM
> > **To:** Hedman, Susan; Meiburg, Stan; Sonich-Mullin, Cynthia; Grevatt, Peter
> > **Subject:** Re: Flint
> >
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> >
> > Tom
> >
> > Thomas A. Burke, PhD, MPH
> >
> > Deputy Assistant Administrator
> >
> > EPA Science Advisor
> >
> > Office of Research and Development
> >
> > 202-564-6620

burke.thomas@epa.gov

On Oct 5, 2015, at 4:14 PM, Hedman, Susan <hedman.susan@epa.gov> wrote:

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> **Cc:** Meiburg, Stan
> **Subject:** Flint
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> Are you able to make that happen?

Thanks,

Susan

Susan Hedman

Region 5 Administrator/Great Lakes National Program Manager

U.S. Environmental Protection Agency

77 West Jackson Blvd - 19th Floor

Chicago, Illinois 60604-3590

To: Hedman, Susan[hedman.susan@epa.gov]
Cc: Meiburg, Stan[Meiburg.Stan@epa.gov]; Sonich-Mullin, Cynthia[Sonich-Mullin.Cynthia@epa.gov]; Grevatt, Peter[Grevatt.Peter@epa.gov]
From: Burke, Thomas
Sent: Mon 10/5/2015 11:03:06 PM
Subject: Re: Flint

In transit, will try my best.

Thomas A. Burke, PhD, MPH
Deputy Assistant Administrator
EPA Science Advisor
Office of Research and Development
202-564-6620
burke.thomas@epa.gov

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Cc: Burke, Thomas[Burke.Thomas@epa.gov]; Sonich-Mullin, Cynthia[Sonich-Mullin.Cynthia@epa.gov]; Grevatt, Peter[Grevatt.Peter@epa.gov]
From: Meiburg, Stan
Sent: Mon 10/5/2015 11:27:54 PM
Subject: Re: Flint

Am I right in thinking that this sounds like it will be best addressed as a straight up technical question: putting costs aside, which water source will be easiest to optimize for restoration of the corrosion coating on pipes?

My understanding from earlier discussions is that the variability of Flint River water poses technical challenges in getting the mix right for corrosion control, whereas Detroit water already has that worked out, but that understanding needs to be tested by folks who know what they are talking about. This isn't making the decision for the city, it's offering assistance in clearly identifying pros and cons of choices.

Stan

Sent from my iPhone

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Deputy Assistant Administrator

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Region 5 Administrator/Great Lakes National Program Manager

U.S. Environmental Protection Agency

77 West Jackson Blvd - 19th Floor

Chicago, Illinois 60604-3590

To: Cassell, Peter[cassell.peter@epa.gov]
Cc: Rowan, Anne[rowan.anne@epa.gov]
From: Kelley, Jeff
Sent: Tue 10/6/2015 3:55:08 PM
Subject: RE: Flint Weekend Clips 10/6
Flint water clips for the afternoon of October 1

Recognizing that this is an easy to do clips this way, they aren't very useful. At least for Flint, let's do clips the way I was doing them last week. (See the attached example.)

Jeff Kelley
Director, Office of External Communications
U.S. EPA Region 5
ph: 312-353-1159

From: Cassell, Peter
Sent: Tuesday, October 06, 2015 10:08 AM
To: Hedman, Susan; Hyde, Tinka; Kelley, Jeff; Fortin, Denise
Cc: Peterson, John; Arcaute, Francisco; Singer, Joshua; Bassler, Rachel; Rowan, Anne; Poy, Thomas
Subject: Flint Weekend Clips 10/6

Attached are today's news clips.

From: Cassell, Peter
Sent: Monday, October 5, 2015 9:58 AM
To: Hedman, Susan; Hyde, Tinka; Kelley, Jeff; Fortin, Denise
Cc: Peterson, John; Arcaute, Francisco; Joshua Singer; Bassler, Rachel; Rowan, Anne; Poy, Thomas
Subject: Flint Weekend Clips 10/5

Attached are the weekend flint clips and news demographics. Thanks!

Pete Cassell
Press Officer
U.S. Environmental Protection Agency

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77 West Jackson Blvd (P-19J)
Chicago, IL 60604-3590
Office (312) 886-6234
Mobile (312) 859-9614

To: Hedman, Susan[hedman.susan@epa.gov]; Kaplan, Robert[kaplan.robert@epa.gov]; Hyde, Tinka[hyde.tinka@epa.gov]
Cc: Beckmann, Ronna Erin[beckmann.ronna@epa.gov]; Cassell, Peter[cassell.peter@epa.gov]; Rowan, Anne[rowan.anne@epa.gov]; Harrison, Melissa[Harrison.Melissa@epa.gov]; Abrams, Dan[Abrams.Dan@epa.gov]; Poy, Thomas[poy.thomas@epa.gov]
From: Kelley, Jeff
Sent: Thur 10/1/2015 7:25:15 PM
Subject: Flint water clips for the afternoon of October 1

•□□□□□□□□□ Public health emergency declared due to lead in Flint water (AP)

•□□□□□□□□□ Legislators take action to fix Flint water supply (Detroit Free Press)

•□□□□□□□□□ Flint data on lead water lines stored on 45,000 index cards (Flint Journal)

•□□□□□□□□□ More than 5,000 in Flint to get lead water filters following donation (Flint Journal)

•□□□□□□□□□ GM donates $50K for water filters for Flint residents (WNEM)

•□□□□□□□□□ Flint resident: Water looks like urine, smells like sewer (Detroit News)

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http://www.ksl.com/index.php?nid=157&sid=36769991&title=public-health-emergency-declared-due-to-lead-in-flint-water

Public health emergency declared due to lead in Flint water

By The Associated Press | Posted Oct 1st, 2015 @ 1:01pm

FLINT, Mich. (AP) — Genesee County commissioners have declared a public health emergency for residents using water from the Flint River through the city's water system.

Tests have shown children with elevated levels of lead, months after Flint began drawing and treating water from the river. The water is aggravating lead in old pipes in thousands of homes.

Commissioners issued an advisory Thursday recommending that people not drink the water unless tests show lead levels are down or the water has gone through an approved filter.

The General Motors Foundation, the local United Way and others have given at least $105,000 to buy filters.

Gov. Rick Snyder has pledged to announce some type of action by the end of the week. He says the consequences of using the river weren't "fully understood."

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http://www.freep.com/story/news/2015/10/01/legislators-take-action-fix-flint-water-supply/73152540/

Legislators take action to fix Flint water supply

By Kathleen Gray, Detroit Free Press Lansing Bureau 2:31 p.m. EDT October 1, 2015

LANSING The Michigan Legislature is beginning to take notice of the ongoing controversy surrounding Flint’s water system, which has been plagued since the city disconnected from the Detroit water system and began pulling its water supply from the Flint River.

The state Senate approved a supplemental appropriations bill that included a $100 placeholder while the state looks for a solution to the water issue.

“We want to make sure we have an accurate number. We didn’t want to put too much in or not enough,” said state Sen. Jim Ananich, D-Flint. “We want to get an accurate understanding of what it’s going to cost to get us the help that we need.”

The appropriation comes on the heels of Gov. Rick Snyder telling reporters on Wednesday that he’ll have some more answers on the state’s role in fixing Flint’s water problems by the end of the week.

An anonymous benefactor and the state have begun distributing water filters to Flint residents in recent weeks after a Hurley Medical Center researcher found lead levels increasing in Flint.

“We’ve been actively working that issue for a significant period of time and providing additional resources recently,” Snyder said. “I would expect us to have more to talk about that by the end of of the week and how we’re partnering with Flint and the federal government on this.”

In 2014, city officials ended the city's contract with the Detroit Water and Sewerage Department, saying that water costs were too high. They opted instead to pull from the Karegnondi Water Authority, which is building a system to supply Genesee County with water pulled from Lake Huron. In the long run, this will mean lower water costs, officials have said, adding that water from the Detroit system will cost $1.5 million more a month than the city is paying now.

But until the new system comes online in 2016, Flint is temporarily pulling water from the Flint River. Since it made the switch, residents have complained that the water smells, is discolored and makes them sick.

And the Hurley researcher recently found that the number of Flint children with elevated blood-lead levels — 5 micrograms per deciliter or more — jumped from 2.1% in the 20 months prior to Sept. 15, 2013, to 4.0% between Jan. 1 and Sept. 15 this year. In certain ZIP codes, the change was even more troubling, she said — jumping from 2.5% of the children tested to 6.3%.

Ananich said filters need to be made available to affected residents, especially vulnerable citizens like children and senior citizens, and the corrosion in the water system pipes needs to be addressed.

“And I think we need to move to a new water source, potentially going back to Detroit,” he said. “Filters can do a lot of good, corrosion control can do some good. But a new water source has to happen and it has to happen soon.”

In addition to the money for Flint water issue, the appropriations bill approved by the Senate also included a $7.7-million settlement of a lawsuit filed by a Flint woman whose car was hit by a Michigan State Police trooper, who was pursuing a driver who refused to stop for a seat belt violation.

The woman and her daughter were injured in the July 3, 2014, crash and another passenger Jacqueline Nichols, 64, of Flint, was killed. Trooper Timothy Fagin received undisclosed discipline after the crash and remains a state trooper.

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http://www.mlive.com/news/flint/index.ssf/2015/10/flint_official_says_data_on_lo.html

Flint data on lead water lines stored on 45,000 index cards

By Ron Fonger | rfonger1@mlive.com The Flint Journal on October 01, 2015 at 12:18 PM

FLINT, MI -- The city knows which homes in Flint have pipes most likely to leach lead into tap water, but can't easily access the information because it's kept on about 45,000 index cards.

Department of Public Works Director Howard Croft said his office is trying to convert data from the cards, including whether homes have lead service lines, to an electronic spreadsheet program so that homes with the highest risk of lead in water can be easily identified.

The effort could be critical to the distribution of 5,250 lead-clearing water filters being funded by the United Way, General Motors and others.

A United Way news release today, Oct. 1, says filters will be distributed "to the highest-risk populations first to ensure the safety of the community."

Testing by Virginia Tech university and a study by the director of Hurley Medical Center's pediatric residency program have warned of a serious problem with lead in Flint's drinking water.

Croft said Wednesday, Sept. 30, that he "can't put a number on" how long it will take the city to convert its paper records into electronic data or maps that can be used to pinpoint lead hotspots. "It's on our to-do list."

Work on computerizing information on the index cards has started, but about 75 percent of the work remains, the DPW director told the City Council Wednesday.

Although the city's water is lead-free when it leaves Flint's water treatment plant, lead service lines that feed about half of homes and businesses in the city have the potential to leach lead as the water flows through the pipes.

Experiments by Virginia Tech university show Flint's treated water -- drawn from the Flint River -- is about 19 times more corrosive than Lake Huron water that had been purchased from the city of Detroit for decades, making the problem much worse than in the past.

Flint changed its drinking water source from Lake Huron to Flint River in April 2014, a decision that came as the city was being run by a state-appointed emergency manager.

Although Flint Mayor Dayne Walling has said the city will complete plans for making the river water less corrosive by the end of the year, there is no treatment for corrosion -- such as the addition of phosphates -- currently.

Gov. Rick Snyder said this week that the state is preparing to announce its plans for assisting the city with the lead in water problem.

After months of assurances by the DEQ that Flint water met all requirements of the Safe Drinking Water Act, Snyder said Wednesday, Sept. 30, that "it appears that lead levels could be higher or could be increased.".

While the governor said the decision to run Flint River water through the city's aging water distribution system, including lead service lines to homes, was made "with the community," Walling has said he had no involvement in the decision and privately questioned it.

Croft has said about half of Flint's homes have lead service lines and quickly identifying where they are located could be critical for water filter distribution or any program that involves the removal and replacement of lead pipes.

Walling asked Snyder in a Sept. 14 letter for $10 million for what he called a "healthy homes initiative" aimed at replacing lead service lines in "the most vulnerable households."

Croft said he's been in contact with the University of Michigan-Flint and Kettering University, asking if students might be available to help city employees with the task of computerizing data about lead pipes from the index cards.

City Councilwoman Vicki VanBuren said she was surprised that the city's information on lead service lines isn't an a format that's already easily accessible.

"I had asked if we could get a map," VanBuren said. "When I requested that information ... (Croft) responded, 'OK, no problem.' So I was surprised when there was nothing to see.

"That seems like basic information they should already be working with," she said.

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http://www.mlive.com/news/flint/index.ssf/2015/10/more_than_5000_in_flint_to_get.html

More than 5,000 in Flint to get lead water filters following donation

By Dominic Adams | dadams5@mlive.com The Flint Journal Follow on Twitter on October 01, 2015 at 11:35 AM, updated October 01, 2015 at 12:04 PM

FLINT, MI – More than 5,000 Flint residents will be able to get water filters following an influx of $105,000 from private and public sources.

The filters come as the city and county have issued lead advisories related to the city's drinking water.

A recent study by a Hurley Medical Center doctor says infants and children are being found with elevated levels of lead in their blood since the city switched to using the Flint River as its water source.

The General Motors Foundation donated $50,000, the United Way of Genesee County pitched in $25,000 and another $10,000 came from the Making Our Children Smile Foundation.

Another $20,000 from community development block grant funds was secured by the city, according to the United Way.

The United Way will work with the Genesee County Health Department to purchase the filters, which cost about $20 each. The health department is working with community partners to prioritize need and distribute filters to the highest risk populations first to ensure the safety of the community. Water filters are NSF certified to include removal of lead.

"Upon first learning of the water quality issue in the city of Flint the United Way partnered with Hurley Children's Hospital, Mott Children's Health Center, the Food Bank of Eastern Michigan and the Flint Diaper Bank to provide bottled water to families in the community," Jamie Gaskin, CEO of the United Way of Genesee County said in a statement. "Now is the time to provide a more economical and long-term solution to help residents until the water issue is resolved."

Information on distribution of the filters will be communicated through the Health Department website, as well as a hotline that is in the process of being established, the statement said.

The Flint School District also has stopped using the city as a water source and is seeking bottled water donations.

"This is a great example of community members, leaders and partners banding together to ensure people have access to clean drinking water," Flint Mayor Dayne Walling said in a statment.

The Community Foundation of Greater Flint also is working to get filters for the initiative.

"Giving back to our communities is more than investing in our facilities; it involves helping to improve the quality of life for those who live in our plant cities," Cathy Clegg, GM North American Manufacturing and Labor Relations vice president said in a statement. "The United Way is a long-time GM partner and is well positioned in the Flint area to help the residents most in need."

Cindy Estrada, UAW vice president and director of the union's GM Department, worked with Clegg to secure the $50,000 grant from the GM Foundation. The UAW was also involved in initial efforts to get bottled water into the community, the statement said.

"The UAW has a proud history of helping workers and their families, but we also take great pride in assisting people in our communities," Estrada said. "Together with the United Way of Genesee County, GM and the GM Foundation, we hope residents are able to access clean water for their families."

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http://www.wnem.com/story/30162800/gm-donates-50k-for-water-filters-for-flint-residents

GM donates $50K for water filters for Flint residents

Posted: Oct 01, 2015 10:22 AM CDT Updated: Oct 01, 2015 10:22 AM CDT

By Brianna Owczarzak, Managing Web Editor

FLINT, MI (WNEM) -General Motors is stepping up to help Flint residents with the water crisis.

The GM Foundation is donating $50,000 to purchase water filters for Flint residents. The donation went to the United Way of Genesee County.

The filters will remove contaminants from the water, allowing residents to use the water for drinking and cooking.

“Giving back to our communities is more than investing in our facilities; it involves helping to improve the quality of life for those who live in our plant cities,” said Cathy Clegg, GM North American Manufacturing and Labor Relations vice president. “The United Way is a long-time GM partner and is well positioned in the Flint area to help the residents most in need.”

Overall, the United Way of Genesee County and the city of Flint raised more than $100,000 for water filters.

Along with the $50,000 from GM, the United Way gave $25,000 from its general fund, the Making our Children Smile Foundation donated $10,000, and $20,000 came from Community Development Block Grant funds.

The water filters cost about $20 each, according to the United Way.

The highest risk populations will get the water filters first.

“This is a great example of community members, leaders and partners banding together to ensure people have access to clean drinking water,” Flint Mayor Dayne Walling said.

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http://www.detroitnews.com/story/news/local/michigan/2015/09/30/flint-water-woes-seep-city-state-politics/73129478/

Flint resident: Water looks like urine, smells like sewer

Jim Lynch and Chad Livengood, The Detroit News 8:50 a.m. EDT October 1, 2015

Flint — The questionable quality of the city's drinking water made headlines again this week, but not much of it has been news to Ashley Holt.

For almost a year, the water from her faucet has looked "like urine," smelled "like the sewer" and, if you're brave enough to sip it, hasn't tasted "normal," the 25-year-old Flint resident said. It's why she's limited for months how often her children — ages 5, 6 and 12 — come in contact with it.

But following last week's revelation that Flint children are showing higher amounts of lead in their blood, the situation has escalated for her cash-strapped family.

In a city where 41.5 percent of the population is below the poverty line, a lack of money is the reason Holt was walking instead of driving downtown this week to pick up her children from school. She scrambles to find enough to buy them bottled water.

"The only option I've got is just to not drink the water and stick with pop and juice," Holt said. "(I) go to the store and get a gallon of water a day, if I can afford it at the time."

The hardships experienced by residents here are having public health and political ripple effects that are being felt from city hall to the governor's office. Gov. Rick Snyder said Tuesday he could unveil "more action steps" as early as the end of this week.

Researchers from Virginia Tech and Hurley Children's Hospital in Flint said last week

that lead levels in local children have risen since the city, under Snyder's appointed emergency manager, started getting its water from the Flint River instead of the Detroit Water & Sewerage System. Studies showed that in some areas lead levels doubled and, in two local zip codes, the levels tripled.

Lead poisoning can cause learning disabilities, according to the Centers for Disease Control and Prevent. At very high levels, it also can lead to seizures, coma and even death.

Water quality has become the central issue in the mayoral election that is a month away. It also has put Snyder's administration — particularly the Michigan Department of Environmental Quality — under the microscope. There are questions about how the DEQ tests water quality, as well as the governor's back-channel efforts this summer to send 1,500 water filters to Flint families when state officials insisted the water was fine.

Sommer Adams said there are doctor's visits in the future for her three kids because she fears they may have been exposed to lead.

"Even though I don't see it in my water or haven't experienced no type of (problems) with drinking it, you never know," said Adams, 23.

Governor questioned

The idea of switching water systems seemed to make sense. Municipal officials didn't like the rates residents were forced to pay and wanted to be part of a new supply system being built to draw from Lake Huron, just like Detroit's system.

Tapping the river for a year or two was supposed to provide water until the Karegondi Water Authority was up and running. Almost immediately after the switch in April 2014, there were complaints about the treated river water's appearance, smell and taste.

A year later, the state-appointed successor emergency manager, Jerry Ambrose, rejected the city council's attempts to tie back to the Detroit system as "incomprehensible."

"(Lake Huron) water from Detroit is no safer than water from Flint," Ambrose said at the time.

The Snyder administration's confirmation Tuesday that it helped an anonymous donor send 1,500 water filters to Flint families seemed to undercut the decision. At an unrelated Wednesday press conference, the Capitol press corps grilled the governor about Flint's woes.

"It appears that lead levels could be higher or have increased... ," Snyder said. "We're looking at making sure they're within safe limits, according to the federal government."

Mayor election a focus

The water problems have ratcheted up interest in the Nov. 3 mayoral election, which figured to draw more scrutiny anyway since Flint emerged from state control in late April.

Business owner and candidate Karen Weaver has attacked incumbent Mayor Dayne Walling for failing to take back total control of the government from the city administrator left in place by the state's emergency manager. After the reporting of the lead results, Weaver has claimed that Walling knew about the problem as far back as June, thanks to a U.S. Environmental Protection Agency report that flagged the situation.

"You didn't speak up," she said Wednesday. "Yes, the emergency manager had power to make the final decision, but nobody takes your voice."

Walling countered that the first time he heard of the elevated lead levels was Sept. 21, a few days before the results were made public.

“I’m asking everyone to carefully consider my record because it has been a complicated four years with four different emergency managers that each involved myself and city council in different ways at different times,” Walling said.

This month, Walling wrote to Snyder requesting the state help with $30 million in new infrastructure improvement aid.

Public Information Officer Jason Lorenz said the city hasn’t received a response.

Old pipes complicate testing

Shervon Goss, 32, paints a disturbing picture of what she experiences in her townhouse complex in Flint’s south end. Her tap water has an odor, Goss said, and showers result in dry skin and rashes.

“It’s a complex with a whole lot of people and a whole lot of babies there,” she said. “These are people who probably can’t afford to go and buy bottled water. So they get forced into drinking the (tap) water that’s unhealthy.”

Like many residents, Goss wonders how this happened.

State officials admitted it is difficult to do consistent lead testing on water being pumped through old lead plumbing and service connection lines. Water tested at intake or upon release from the treatment plant can be exposed to lead when it reaches old lead connections on private property, the officials said.

“The testing protocol that we have tends to offer a systemwide assessment of how water interacts with that line and home plumbing,” said Brad Wurfel, DEQ’s spokesman. “There’s a lot we unfortunately don’t know about those (home lead) levels.”

Some local groups have stepped up to provide free water to residents. The House of Prayer Missionary Baptist Church gave away bottled water Wednesday, drawing a line of cars.

On Thursday, the Food Bank of Eastern Michigan will ship packages of diapers combined with gallon jugs of water to area social service organizations.

Local activists are prepared to hold protests and urge residents to stop paying their water bills if state and city officials don’t make the switch back to water from Detroit, said Rev. Alfred Harris, pastor of Saints Church in Flint.

“We’re praying that the governor will say we’ve got to go back to Detroit water,” Harris said.

Jeff Kelley
Director, Office of External Communications
U.S. EPA Region 5
ph: 312-353-1159

To: Pniak, Edward[pniak.edward@epa.gov]
From: Crooks, Jennifer
Sent: Tue 10/6/2015 4:11:09 PM
Subject: FW: Final Notes from Michigan semi-annual call on 6/10

Ed--we discussed in our Team meeting this morning, that these 6-month calls with our States RE: their activities under the PWSS grant, show oversight by EPA, so we think these should be in the official grant file with the EOYs.
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From: Crooks, Jennifer
Sent: Tuesday, July 28, 2015 8:47 AM
To: Shekter Smith, Liane (DNRE); Richard Benzie; kris philip; Monosmith, Carrie (DNRE); DeBruyn, Dana (DEQ); 'Dettweiler, Dan (DEQ)'; 'Busch, Stephen (DEQ)'; 'Prysby, Mike (DEQ)'; 'cookp@michigan.gov'; 'Holdwick, Kevin (DEQ)'
Cc: 'Thomas Poy'; Bair, Rita; Damato, Nicholas; Shoven, Heather; Kuefler, Janet; Murphy, Thomas; Porter, Andrea; Deltoral, Miguel
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Subject: Draft Notes from Michigan semi-annual call on 6/10

All--Below are my draft notes from our call last week, June 10, 2015. Thank you all for participating. I apologize for the delay in getting these out in draft to you all for review--I was hoping to get a couple of items ironed out that were fuzzy during our discussions, but hasn't happened yet. Several ACTION items below. So, please review to make sure I documented our discussion/agreements correctly, and feel free to edit as needed. I you could get back to me by July 13, that would be great. Thank you!

Jennifer

Attendees:
MDEQ: Liane Shekter-Smith, Richard Benzie, Carrie Monosmith, Kris Philip, Dan Dettweiler,

Marjorie Rodriguez (Student), Kevin Holdwick, Mike Prysby, Dana DeBruyn, Steve Busch
EPA Region 5: Tom Poy, Rita Bair, Nick Damato, Janet Kuefler, Michele Palmer, Tom Murphy, Heather Shoven, Cary McElhinney, Andrea Porter, Miguel Deltoral, Mostafa Noureldin

Summary:

1.Changes in Lead Disinvestments and Commitments for FY 2016 ARDP--for discussion: Due to our extreme focus on lead in drinking water, this is the consensus here.

a. Consumer notification of tap results at NTNCWSs:
(Suggested wording) The NCWS program commits to full implementation of the lead consumer notification of tap results requirement, to begin in CY 2016. Region 5 will assist in a notification outreach effort in late FY 2015 to remaining 698 NTNCWSs that are not schools/daycares, to begin providing lead consumer notice in CY 2016. NCWS program commits to include information on providing lead consumer notice in the annual monitoring letter sent to all NTNCWSs for CY 2016.

STATE: The State found this change in the wording acceptable.

b. Collection of Lead samples at NTNCWSs during June - September 2016 timeframe
(Suggested wording) NCWS program commits to including information in the applicable NTNCWS annual monitoring letters of the requirement to collect their annual/triennial lead sample between June and September only, during CY 2016. The MDEQ NCWS program currently does not have the capability to easily track lead sampling compliance within this specific timeframe.

STATE: The State found this change in the wording acceptable.

c. Follow-up Actions for NTNCWSs that sample outside of June-September 2015 timeframe
(From 5/5/15 call notes w/EPA) MDEQ commits to providing Region 5 with all CY 2015 lead (and copper?) sample data for all NTNCWSs by March 2016 so that EPA can analyze how many PWSs monitored outside the June through October timeframe. EPA commits to follow-up with MDEQ to discuss follow-up actions.

STATE: The State agreed to providing EPA R5 the raw lead and copper data for all CY 2015 for all NTNCWSs. The WaterTrack database does have data, but it can't generate violations. MDEQ doesn't commit to enforcing against 2016 violators in FY 2016. The State said, it is planning on disinvesting in enforcing against these violators due to limited capability of WaterTrack; however, if the State's noncommunity data management capabilities improve during FY 2016, implementation of this disinvestment may become a reality. The State has not designated an alternate timeframe, or done system specific documentation as to why the system qualifies for a different timeframe.

d. Submittal of the lead and copper reporting form
(Suggested wording) MDEQ commits to requiring CWSs and NTNCWSs to submit the lead and copper reporting form via the annual monitoring letters to each system, tracking CWSs and NTNCWSs submittal of the lead and copper reporting form, and commits to issuing violations for failure to submit the lead and copper reporting form. The reporting form provides the address of the sample site, designates sampling site selection criteria, and

explanation(s) for any changes in sampling sites.

STATE: Dan Dettweiler stated that the NCWS program was not in a position to do this for the NTNCWSs at this time. Tom Murphy asked how does WaterTrack handle/track high lead results? Tom M said there is a truncation issue on the sample location name field. Dan acknowledged that this problem has been identified, and the Department of Technology Management and Budget (DTMB) has been trying to fix this problem, but it is a challenging problem. Dan stated that sample sites for NTNCWSs are actually identified by LHDs during the sanitary survey and are documented in the sanitary survey. The LHDs check the pdf of the laboratory results that clearly states where the sample was taken, and calculates the 90th percentile. However, Dan stated that the requirement to send in the lead and copper reporting form is not currently in the LHD annual monitoring letter sent to each system. The NTNCWSs do not couple this form to the Lead Consumer Notice, as does the CWSs. Kris Philip pointed out that the LHDs select the sample sites, thus when they are calculating the 90th percentile, they are actually double checking the sites with the results.

From our discussion, the Region concluded that at this time, the LHDs are actively reviewing the lead and copper results and the sample locations when they calculate the 90th percentiles to ensure proper LCR monitoring is conducted by ALL NTNCWSs at the proper sample sites. After our call, I asked for verification of this statement, and Dan Dettweiler responded, "Just as with an exceeding value of an MCL, WaterTrack alerts the LHD when at least one sample for a water system exceeds the AL. A 90th percentile calculation is made only when an exceeding result alerts the LHD. For cases where there are no exceeding results, private lab samples are reviewed at the time LHDs hand-enter them into WaterTrack. State lab samples, which flow electronically via nightly downloads from the state lab database, are reviewed when pdfs of the analysis reports are, routinely, emailed by the state lab to LHDs. Beyond that, MDEQ's annual evaluation of the LHDs provides another opportunity for us to oversee the proper assigning and use of designated sampling locations."

ACTION: The Region will discuss Dan's response internally, and get back to the State with any issues/concerns.

Kris Philip said that the CWS program is requiring that the systems submit the form, but they are not enforcing whether or not the system submits the form. Often, the CWS will submit the Lead Consumer Notice and the Lead and Copper reporting form together. Kris said if 90%+ are already submitting the forms, then the State will agree to follow-up and enforce this requirement. But, if less than that, will probably be too much of a burden. Kris said they may change the way DEQ is tracking in SDWIS during FY 2016. But, the Region said SDWIS-Prime probably won't be available until 2017 at the earliest.

ACTION: Kris Philip will research with the District Offices to determine the current submittal rate of the lead and copper reporting form from CWSs; and report back to the Region.

Nonresponsive

Nonresponsive

3. Status of Flint
   a. TTHM levels for May--Due to MDEQ district engineer June 10-RECEIVED; see link to results https://www.cityofflint.com/2015/06/01/may-water-testing-results-show-all-locations-are-within-acceptable-limits-for-tthm/
   All samples below the TTHM MCL; one site still has an LRAA above the MCL but decreased from 105 ppb in Feb to 93.5 ppb in May.

   Mike Prysby said he is getting ready to issue the construction permit to the City of Flint to install a GAC filter in July, that will remove more TOC to further reduce the potential of developing TTHMs. Mike said he has already issued a construction permit for a transmission line within the City that will help reduce water age.

   b. Lead in Flint

Our discussions with MDEQ indicate that no phosphates/corrosion control has been added to the system since April 2014 when the source of drinking water changed to the Flint River. We understand that the City is just finishing up its second set of 6-month initial monitoring for lead; where the results will probably warrant a Corrosion Control Study to be conducted. Since Flint has lead service lines, we understand some citizen-requested lead sampling is exceeding the Action Level, and the source of drinking water will be changing again in 2016, so to start a Corrosion Control Study now doesn't make sense. The idea to ask Flint to simply add phosphate may be premature; there are many other issues and factors that must be taken into account which would require a comprehensive look at the water quality and the system before any treatment recommendations can/should be made. Miguel is recommending MDEQ and EPA? approach Flint about formally requesting EPA's Office of Research and Development in Cincinnati support on the lead in Flint drinking water issue, and request that Mike Schock, ORD, and possibly Darren Lytle, ORD, to participate in Flint's drinking water advisory committee so that a comprehensive evaluation on how to proceed can be discussed.

Miguel provided a brief summary of the high lead results found at the residence of Ms. Leeanne Walters in Flint. Miguel will follow up with a written summary of the work conducted, sample results, and conclusions.
Miguel believes that lead levels in Flint are being affected by the lack of Corrosion Control being conducted by the City, since the LCR requires 2 6-month initial monitoring for a new source. Steve Busch stated that in the Lead sampling pool, almost all of the lead sample sites are lead service lines, and the State is not seeing large increases in lead levels at the tap. Miguel suggested that EPA experts in Lead, Mike Schock; and in distribution systems, Darren Lytle, be added to the Flint drinking water advisory committee to assist the City/State in determining the best way to proceed to minimize lead in the City's drinking water during the interim use of the Flint River, and subsequent use of Lake Huron water.

Miguel said he will send Mike Schock and Darren Lytle's contact information to Steve and Mike. Steve pointed out that the City is following the LCR requirements, and completing the requirements in a timely manner. Miguel's point is that since the LCR was promulgated 20+ years ago, that research and different situations, like Washington D.C., have educated scientists, experts, and regulators that the existing requirements in the LCR may not be as protective as previously thought. Thus, he can only make recommendations as to how to revise sampling protocols. And Miguel acknowledges that it may be another year before these regulation changes are promulgated in the Long-Term Lead and Copper Rule. In December 2015, the NDWAC recommendation is expected.

The Region asked the State if the Flint River will be a permanent supplemental source of drinking water, once the City of Flint connects with the Karegdodi pipeline from Lake Huron. Mike Prysby said that the City is currently pumping 22MGD, but the City has 40-50 MG of storage. The City is currently working on reducing its unaccounted for water losses, and these water losses are dropping. The State, through the Governor's office, provided disadvantaged system funding, $2M which includes $900K for lead detection, and pipe inspection.

4. Update on WaterTrack to SDWIS-State: The migration of WaterTrack data to SDWIS-State was number 39 on the Dept of Technology Management and Budget's (DTMB) project list last year; this year it is
number 30. It doesn't appear this project has a high priority. Does the State have any new information on the progress of this project?

Dan said that the migration of WaterTrack data to SDWIS-State has moved to a priority of 26 with DTMB so far this year. But Dan said they are going to take this project out of the que, since Ronda Page has returned to the drinking water program from DTMB. Ronda said she re-estimated DTMB's involvement in this project to be far less than originally thought, so there is no need for any program developers or the tech team. This project will only need the Data Team and the web designers only. Ronda said they can set-up on a new server and migrate the data from WaterTrack to SDWIS-State themselves; in-house. Kris Philip remembers migrating the CWS data to SDWIS-State, so she can be a resource for this project. The parts that are needed to be completed by DTMB could be contracted out. Cary McElhinney said that there is a process of withholding PWSS grant funds and re-directing the funds to a HQ contract with SAIC. Richard Benzie said the process worked well last year when MI used PWSS funds to contract with a HQ contractor to conduct NEEDS survey training.

ACTION: Jen will follow up with State and Tribal Programs Branch about the process and timing of holding back funds from the PWSS grant for the purpose of contracting with SAIC.

5. Consequences of cutting the State drinking water program to a "minimal program"
Jennifer had a discussion with Richard Benzie regarding the possibility of the Michigan State Legislature looking to have just a minimal drinking water program, meaning only a program with activities that are required by the Federal SDWA. Jennifer ultimately discussed this internally with Tom Poy. The minimal program suggested would cut out Operator Certification, Capacity Development, Plan Review, Cross Connection Control, Source Water Protection, among other programs that are State required. Operator Certification and Capacity Development, while not required by the Federal regulations, do have financial strings attached. And Plan review/construction permits are required by the SRF program for a loan. Any recent communication with the State Legislature that they might proceed and make this possibility a reality?

   Richard and Liane said there is no current threat from the State Legislature to cut the State-funded PWSS program activities. But there is a State-wide impetus to delete old programs and regulations, so this could lead to questioning the purpose of State-funded PWSS program activities. Richard is just being proactive in preparing a justification. Richard remembers a discussion many years ago about what constitutes a "comprehensive drinking water program". Tom Poy and Jennifer commented in a previous communication with Richard that the EPA PWSS primacy program and the State-funded activities in the drinking water program were meant to complement each other. To support this statement, Jennifer sent Richard some PWSS Priority guidance from the 90's, some preamble language from the 1976 SDWA found by our attorney, and language from Section 142 of the SDWA regulations from 1976 that might assist him in his justification.

6. EPA's Resource Message at the LHD Workshop in April
From the 2014 analysis of Shared Goals 2013 data, which is compliance data, for noncommunity systems, there are increasing trends of nitrate M/R violations for both NTNCWSs and TNCWSs. We discussed this on the last semi-annual call. Analysis of the 2015 Shared Goals 2014 data (April 2015) shows an improvement--that of decreasing numbers of bacti/nitrate M/R violations.

   However, in light of the upcoming implementation of RTCR in 2016, the question raised here in the Region is:

> Does the State have a plan with the LHDs as to what activities must be prioritized, and what will fall off the plate? Not all LHDs will need to disinvest based upon each LHD's resources, but some poorly funded LHDs may have to disinvest in some activities/drop activities that have no risk to public health.
>
> Carrie Monosmith said that she met with the RTCR workgroup, comprised of LHD Directors/sanitarians, last fall to identify activities that the state can disinvest in during the next several years as the LHDs begin implementation of RTCR. They could not identify any activity that could be dropped. The main thing that will help the LHDs save time is to get the electronic DWR (eDWR) going, or the CMD portal, which will drastically reduce the LHDs time in inputting laboratory data into WaterTrack/SDWIS-State. From there, they can develop electronic data forms (CROMEER compliant) that the systems can submit.

Thank you!

Jennifer

shekterl@michigan.gov; 'Richard Benzie' <benzier@michigan.gov>; 'kris philip' <philipk@michigan.gov>; 'Monosmith, Carrie (DNRE)' <MONOSMITHC@michigan.gov>; 'DeBruyn, Dana (DEQ)' <DebruynD@michigan.gov>; Dettweiler, Dan (DEQ) <DETTWEILERD@michigan.gov>; Poy, Thomas <poy.thomas@epa.gov>; Kuefler, Janet <kuefler.janet@epa.gov>; Damato, Nicholas <damato.nicholas@epa.gov>; Shoven, Heather <shoven.heather@epa.gov>; Murphy, Thomas <murphy.thomas@epa.gov>; Bair, Rita <bair.rita@epa.gov>; McElhinney, Cary <mcelhinney.cary@epa.gov>; Pniak, Edward <pniak.edward@epa.gov>; 'cookp@michigan.gov'; 'Prysby, Mike (DEQ)' <PRYSBYM@michigan.gov>; Busch, Stephen (DEQ) <BUSCHS@michigan.gov>

To: Hedman, Susan[hedman.susan@epa.gov]; Hyde, Tinka[hyde.tinka@epa.gov]; Poy, Thomas[poy.thomas@epa.gov]; Harrison, Melissa[Harrison.Melissa@epa.gov]
Cc: Kelley, Jeff[kelley.jeff@epa.gov]; Cassell, Peter[cassell.peter@epa.gov]; Fortin, Denise[Fortin.Denise@epa.gov]; Peterson, John[peterson.john@epa.gov]
From: Rowan, Anne
Sent: Tue 10/6/2015 4:49:51 PM
Subject: Flint's Water Crisis -- Michigan's Environment Report

October 6, 2015

This Week on The Environment Report

Water samples from Flint (L) and Detroit (R). Photo, Steve Carmody / Michigan

In Flint, lead levels in some children's blood have spiked dramatically since the city started using the Flint River as its water source. We've been hearing some conflicting things from state officials about what exactly Flint has been doing--if anything--to cut down on lead in the water. We'll sort that out, on the next *Environment Report*.

Listen to *The Environment Report* on Michigan Radio, Tuesdays and Thursdays at

Environmental News from Around the World

Radi

8:50 am & 5:45 pm. Or, visit us .

South Carolina Copes With Deadly Flooding: 'Something We've Never Seen Before'

Obama just announced the first new marine sanctuaries in 15 years

AP analysis: Dozens of deaths likely from VW pollution dodge

Indonesia Forest Fires Could Become Worst on Record: NASA

BP settlement agreement announced in July to be filed Monday

The Environment Report, Michigan Radio

535 W. William, Ann Arbor, MI 48103

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Michigan Radio | 535 West William Street | Suite 110 | Ann Arbor | MI | 48103

To: Hedman, Susan[hedman.susan@epa.gov]
Cc: Hyde, Tinka[hyde.tinka@epa.gov]; Rowan, Anne[rowan.anne@epa.gov]
From: Kelley, Jeff
Sent: Tue 10/6/2015 5:35:03 PM
Subject: Inquiry from the Washington Examiner re Flint

I got a call from Kyle Feldscher of the Washington Examiner regarding Flint drinking water. In his message he says that a lot of people are calling for EPA to get involved and he asks what it would take for that to happen. Here's the statement we issued on Friday:

Actions that the State of Michigan and the City of Flint announced today are important steps to protect public health. The immediate steps being taken to implement corrosion control will reduce lead in drinking water, as required by the Safe Drinking Water Act. U.S. EPA will continue to provide technical assistance to the State of Michigan and the City of Flint to support their joint effort.

Would you like to add any more detail about how we're involved, or just update to this:

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U.S. EPA Region 5
ph: 312-353-1159

To: Kelley, Jeff[kelley.jeff@epa.gov]
Cc: Hyde, Tinka[hyde.tinka@epa.gov]; Rowan, Anne[rowan.anne@epa.gov]
From: Hedman, Susan
Sent: Tue 10/6/2015 5:41:34 PM
Subject: Re: Inquiry from the Washington Examiner re Flint

I think the updated statement looks good -- so please go ahead.

Sent from my iPhone

On Oct 6, 2015, at 1:35 PM, Kelley, Jeff <kelley.jeff@epa.gov> wrote:

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> \---
> *Jeff Kelley*
> *Director, Office of External Communications*
> *U.S. EPA Region 5*

ph: 312-353-1159

To: Crooks, Jennifer[crooks.jennifer@epa.gov]
From: Pniak, Edward
Sent: Tue 10/6/2015 6:06:28 PM
Subject: RE: Final Notes from Michigan semi-annual call on 6/10

Thanks. I've included a copy in the grant file.

From: Crooks, Jennifer
Sent: Tuesday, October 06, 2015 11:11 AM
To: Pniak, Edward
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Miguel believes that lead levels in Flint are being affected by the lack of Corrosion Control being conducted by the City, since the LCR requires 2 6-month initial monitoring for a new source. Steve Busch stated that in the Lead sampling pool, almost all of the lead sample sites are lead service lines, and the State is not seeing large increases in lead levels at the tap. Miguel suggested that EPA experts in Lead, Mike Schock; and in distribution systems, Darren Lytle, be added to the Flint drinking water advisory committee to assist the City/State in determining the best way to proceed to minimize lead in the City's drinking water during the interim use of the Flint River, and subsequent use of Lake Huron water.

Miguel said he will send Mike Schock and Darren Lytle's contact information to Steve and Mike. Steve pointed out that the City is following the LCR requirements, and completing the requirements in a timely manner. Miguel's point is that since the LCR was promulgated 20+ years ago, that research and different situations, like Washington D.C., have educated scientists, experts, and regulators that the existing requirements in the LCR may not be as protective as previously thought. Thus, he can only make recommendations as to how to revise sampling protocols. And Miguel acknowledges that it may be another year before these regulation changes are promulgated in the Long-Term Lead and Copper Rule. In December 2015, the NDWAC recommendation is expected.

The Region asked the State if the Flint River will be a permanent supplemental source of drinking water, once the City of Flint connects with the Karegdodi pipeline from Lake Huron. Mike Prysby said that the City is currently pumping 22MGD, but the City has 40-50 MG of storage. The City is currently working on reducing its unaccounted for water losses, and these water losses are dropping. The State, through the Governor's office, provided disadvantaged system funding, $2M which includes $900K for lead detection, and pipe inspection.

Nonresponsive

Nonresponsive

Thank you!

Jennifer

shekterl@michigan.gov; 'Richard Benzie' <benzier@michigan.gov>; 'kris philip' <philipk@michigan.gov>; 'Monosmith, Carrie (DNRE)' <MONOSMITHC@michigan.gov>; 'DeBruyn, Dana (DEQ)' <DebruynD@michigan.gov>; Dettweiler, Dan (DEQ) <DETTWEILERD@michigan.gov>; Poy, Thomas <poy.thomas@epa.gov>; Kuefler, Janet <kuefler.janet@epa.gov>; Damato, Nicholas <damato.nicholas@epa.gov>; Shoven, Heather <shoven.heather@epa.gov>; Murphy, Thomas <murphy.thomas@epa.gov>; Bair, Rita <bair.rita@epa.gov>; McElhinney, Cary <mcelhinney.cary@epa.gov>; Pniak, Edward <pniak.edward@epa.gov>; 'cookp@michigan.gov'; 'Prysby, Mike (DEQ)' <PRYSBYM@michigan.gov>; Busch, Stephen (DEQ) <BUSCHS@michigan.gov>

To: Hedman, Susan[hedman.susan@epa.gov]; Hyde, Tinka[hyde.tinka@epa.gov]; Kelley, Jeff[kelley.jeff@epa.gov]
Cc: Peterson, John[peterson.john@epa.gov]; Arcaute, Francisco[Arcaute.Francisco@epa.gov]; Singer, Joshua[Singer.Joshua@epa.gov]; Bassler, Rachel[Bassler.Rachel@epa.gov]; Rowan, Anne[rowan.anne@epa.gov]; Poy, Thomas[poy.thomas@epa.gov]; Fiscus, Taylor[Fiscus.Taylor@epa.gov]; Kaplan, Robert[kaplan.robert@epa.gov]; Fortin, Denise[Fortin.Denise@epa.gov]; Deamer, Eileen[deamer.eileen@epa.gov]; Beckmann, Ronna Erin[beckmann.ronna@epa.gov]
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Sent: Wed 10/7/2015 3:47:45 PM
Subject: Flint Clips 10/7
FlintClips10_7.pdf

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USA Today Network Nancy Kaffer, Detroit Free Press 8:02 p.m. CDT October 6, 2015

Dan Wyant, director for the Michigan Department of Environmental Quality and Nick Lyon, director for the Michigan Department of Health and Human Services, discuss action plan for Flint drinking water. Ryan Garza Detroit Free Press

Lee Anne Walters of Flint, Mich., pours a heated gallon of bottled water into the bath tub for her two sons to take a weekly bath on Oct. 1, 2015. Walters uses 8 to 10 gallons of bottled water to avoid her children's exposure to Flint water that contains high levels of lead. (Photo: Ryan Garza,

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26 CONNECT 79 TWEET 1 LINKEDIN 15 COMMENT

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Contributing: Robin Erb and Kathleen Gray, Detroit Free Press

The cartoonist's homepage, freep.com/mikethompson (Photo: Mike Thompson, Detroit Free Press)

See Gannett's October political cartoon gallery here.

Q4 | 15

Daily Flint Drinking Water Clip Report

Peter Cassell

Daily Flint Clips Report

U.S. EPA Region 5

Date	Headline	Contact	Outlet	PDF	Text
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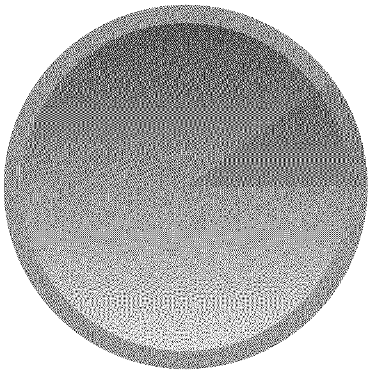
Advanced Analysis

News by State Chart



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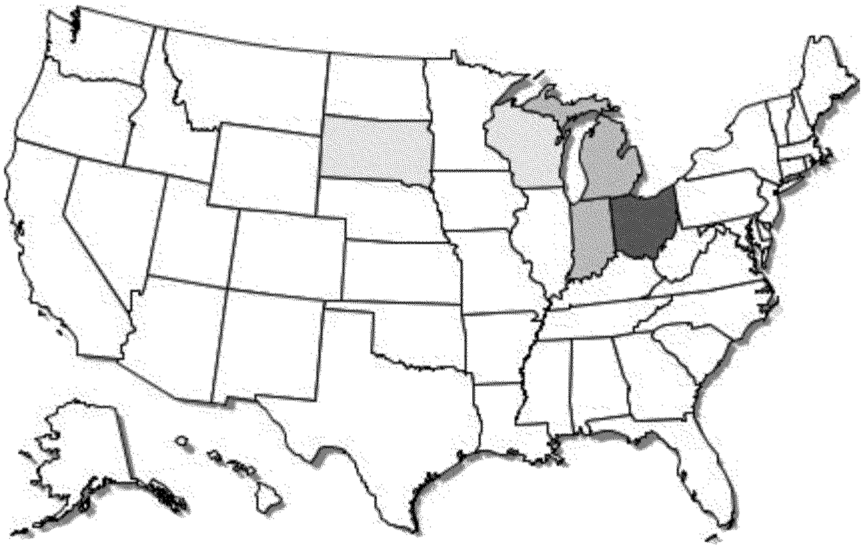
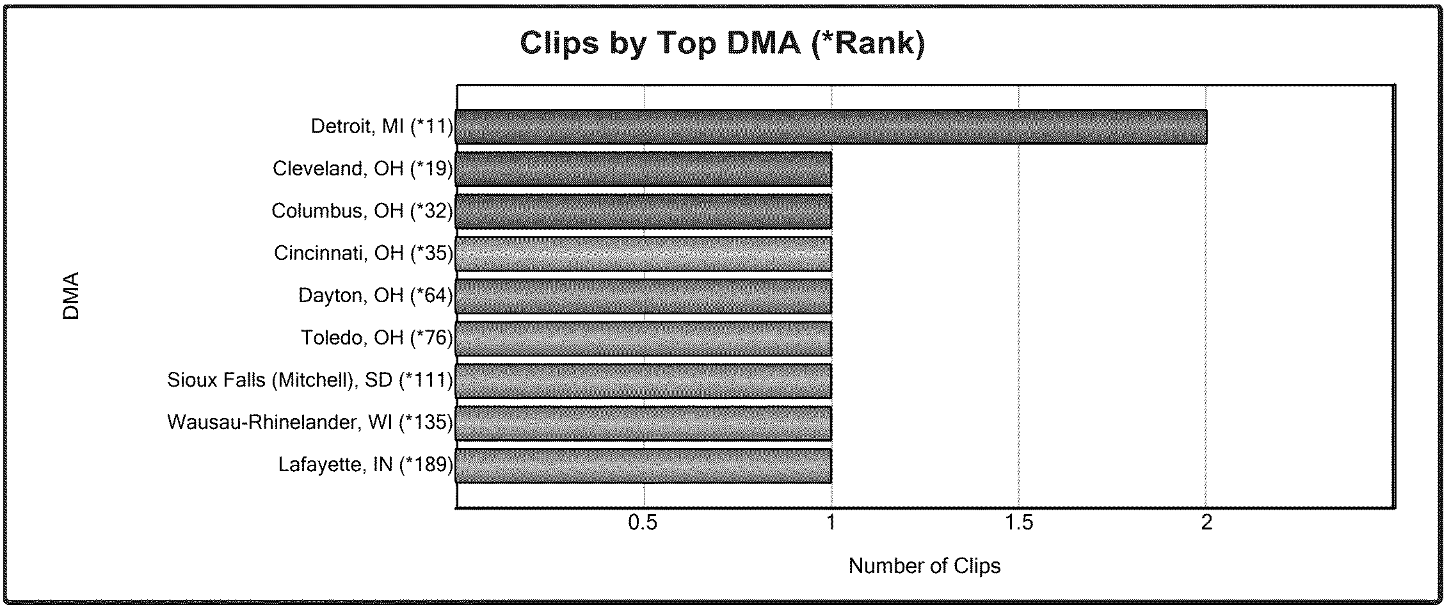
▨	OH	4	40.00 %	▨	MI	2	20.00 %	▨	SD	1	10.00 %	▨	WI	1	10.00 %
▨	IN	2	20.00 %												

News Map by US State

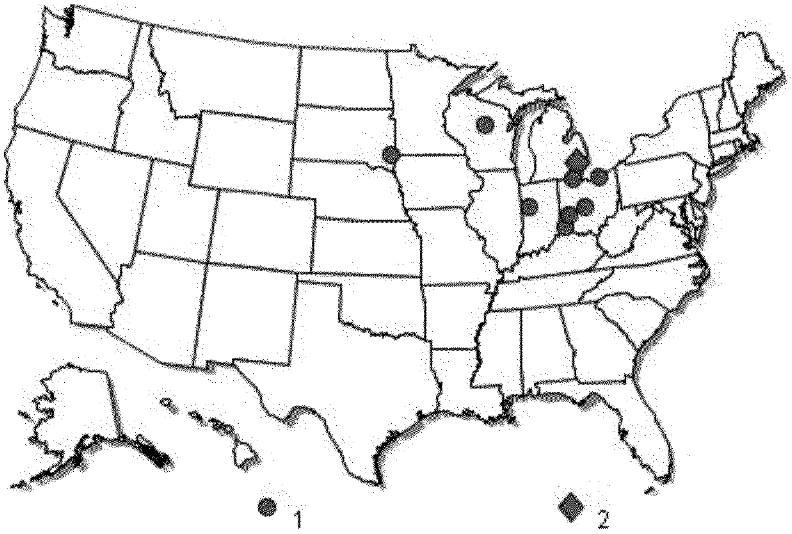


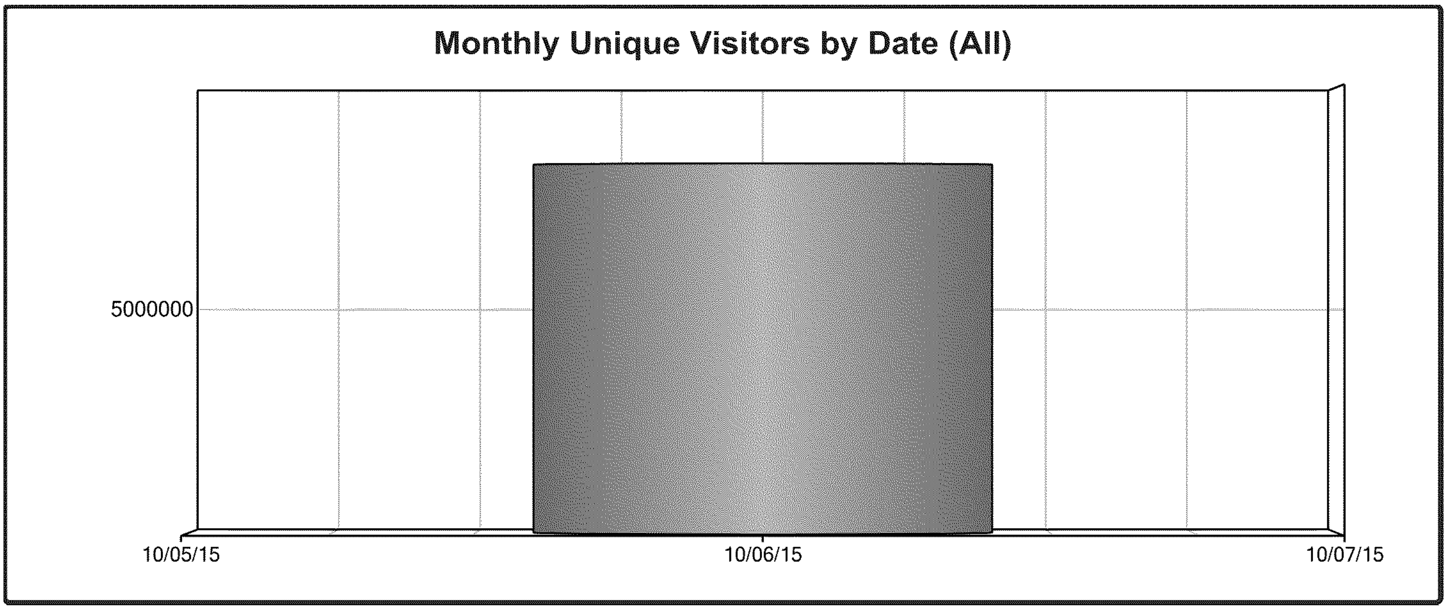


Top Outlets by News Articles List

Outlet	Count
The News-Messenger	1
The Marion Star	1
The Cincinnati Enquirer	1
Palladium-Item	1
Observer & Eccentric Newspapers - Detroit	1
News Journal	1
Marshfield News-Herald	1
Journal & Courier	1
Detroit Free Press	1
Argus Leader	1

News Map by US DMA





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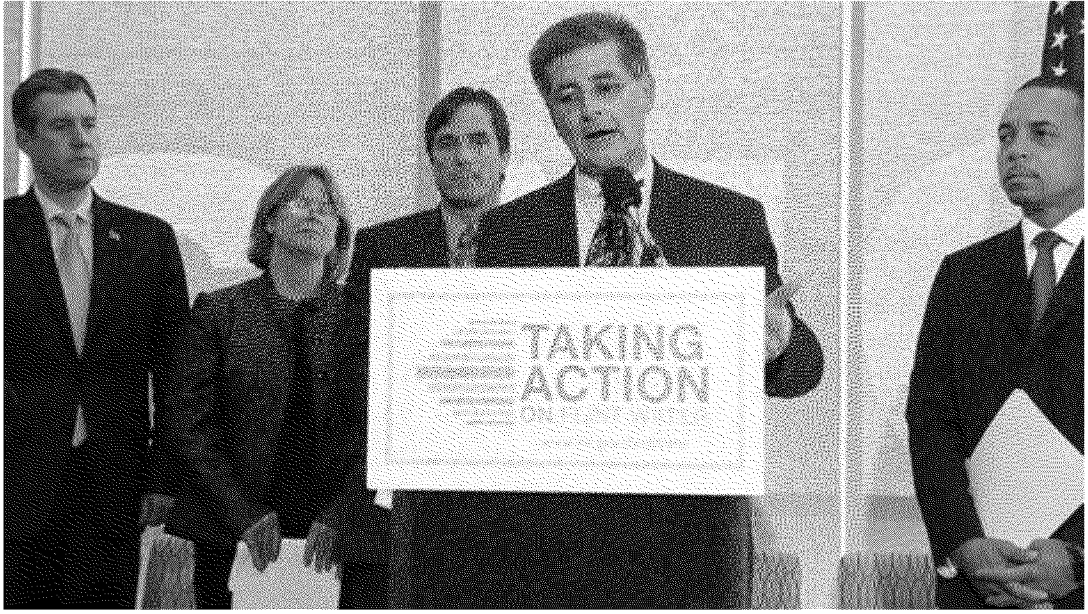

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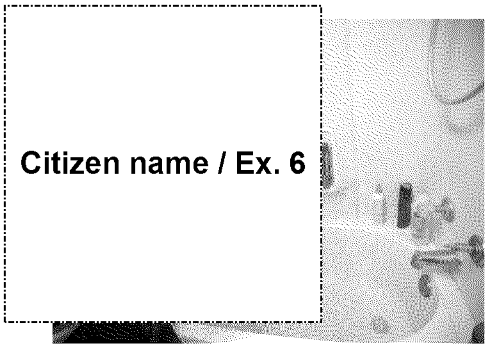

Citizen name / Ex. 6

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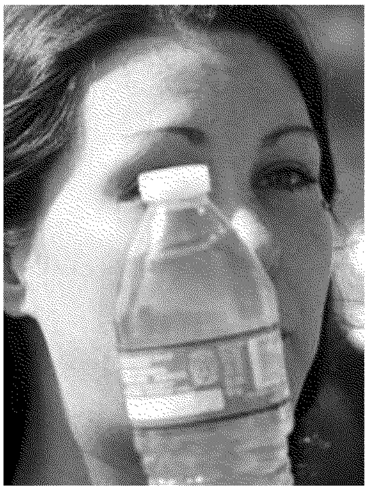

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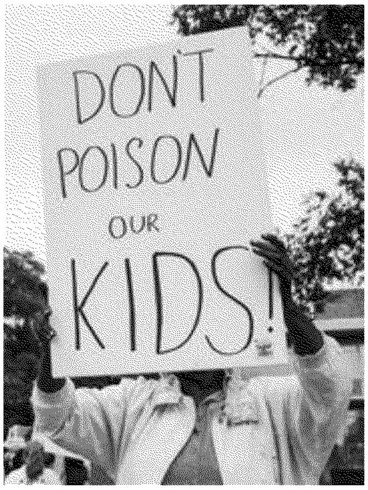

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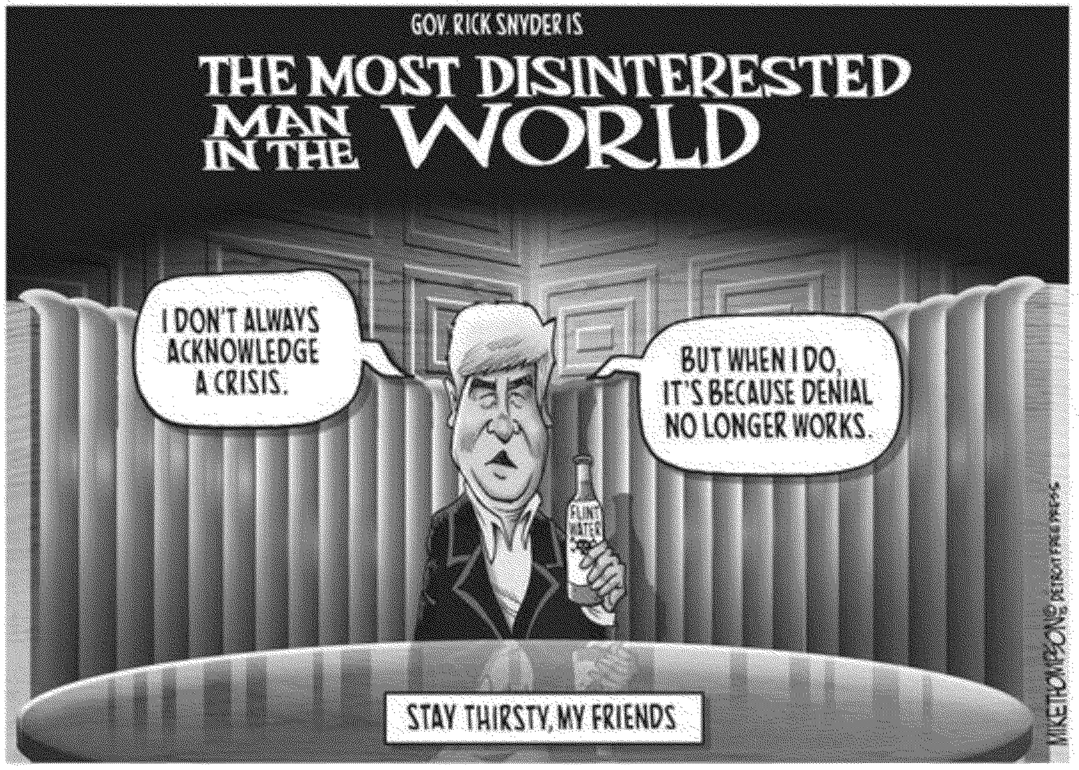
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THE MOST DISINTERESTED MAN IN THE WORLD
I DON'T ALWAYS ACKNOWLEDGE A CRISIS.
BUT WHEN I DO, IT'S BECAUSE DENIAL NO LONGER WORKS.
FLINT WATER
STAY THIRSTY, MY FRIENDS
MIKE THOMPSON DETROIT FREE PRESS

The cartoonist's homepage, freep.com/mikethompson (Photo: Mike Thompson, Detroit Free Press)

See Gannett's October political cartoon gallery here.

To: Hedman, Susan[hedman.susan@epa.gov]; Hyde, Tinka[hyde.tinka@epa.gov]
From: Kelley, Jeff
Sent: Wed 10/7/2015 8:33:15 PM
Subject: Michigan Radio: Flint had no plan to minimize lead corrosion in people's drinking water post river switch

We'll send around a larger batch of today's clips this afternoon, but want to make sure you see this one …

http://michiganradio.org/post/flint-had-no-plan-minimize-lead-corrosion-peoples-drinking-water-post-river-switch#stream/0

Flint had no plan to minimize lead corrosion in people's drinking water post river switch

By REBECCA WILLIAMS & LINDSEY SMITH, Michigan Radio • OCT 6, 2015

Confused about corrosion control? We were too.

In Flint, lead levels in some children's blood have spiked dramatically. Scientists believe the Flint River is part of the problem. Flint switched from Detroit's water system and started pulling water from the Flint River last year.

We've been hearing some conflicting things from state officials about what exactly Flint has been doing — if anything — to cut down on lead in the water.

The confusion

State regulators told federal regulators earlier this year by email that Flint is not using corrosion control.

Corrosion control is important because it helps prevent lead from leaching out of old pipes into people's tap water.

But on Friday, Michigan Department of Environmental Quality Director Dan Wyant said this:

"Know that when the city switched from Detroit sewer and water, that the city utilized corrosion controls," he said.

That directly conflicts with what the state said before.

After Friday's press conference, we asked DEQ spokesman Brad Wurfel to clarify. He then said the corrosion control Flint used was lime.

"Flint was trying to address the hardness of the water, so they chose lime to address the hardness," he said. "That is also a corrosion control agent. It's a recognized corrosion control agent. It just wasn't, it wasn't cutting it."

We ran this by some outside experts.

Daniel Giammar is an expert on lead in water. He's a professor of environmental engineering at Washington University in St. Louis, Missouri.

"Simply claiming to have lime addition as corrosion control is insufficient," he says.

Giammar told us that you can use lime for corrosion control, but you have to have a plan. You want to make sure your water hits a certain pH range and alkalinity so that you minimize the amount of lead in the water.

“Whether or not you have corrosion control isn’t whether or not you’re adding lime, but it’s rather, are you achieving the target pH that you set out?” he says.

The softening process could be making the situation worse.

Marc Edwards is a civil engineering professor from Virginia Tech University and a nationally renowned expert on water treatment. He was also confused by Wyant’s claim that Flint had corrosion controls in place. So, over this past weekend, he took a closer look at Flint’s data.

He says the water softening treatment Flint is using is actually making Flint’s water more corrosive.

“Even as they’re denying the water is corrosive and it’s causing this higher lead, the pH value is plummeting, it’s becoming more acidic,” Edwards says. “And it led me to wonder, I mean, are they even watching what’s happening to the pH of their water? It’s like flying a jumbo jet without checking your gas tank.”

We requested an interview with someone from Flint's water department, but they did not provide anyone to talk to us for this story by our deadline.

The DEQ's response

The DEQ says they have been keeping an eye on the pH of Flint’s water.

Liane Shekter Smith heads up DEQ's Office of Drinking Water and Municipal Assistance.

"Absolutely, we've been monitoring the pH data. We monitored it prior to the switch to the Flint River and we monitored it since. And we've compared the pH data and there has not been a significant change."

Shekter Smith says they consider a pH of 7.5 to be acceptable. But both Marc Edwards and Daniel Giammar told us cities should shoot for a pH of 8 or above to minimize the amount of lead getting into drinking water. That's because you want the water to be less acidic to minimize corrosion.

Data available online from the City of Flint show that the pH of treated water leaving the plant has been trending downward - becoming more acidic. Monthly average pH measurements dropped from 8.07 in December 2014 to 7.34 in August 2015.

A key point here: there's a difference between having some kind of treatment process that might work and having an approved corrosion control plan.

Yesterday, Shekter Smith confirmed that Flint does not have a corrosion control plan.

"At the time they proposed switching to the Flint River and implementing the lime softening treatment method, there was an indication that the pH control provided by that method perhaps would provide optimal corrosion control," Shekter Smith says.

It's clear that method didn't work.

Tomorrow, city, state, and federal officials will get together to come up with some kind of plan to control the corrosion.

Jeff Kelley
Director, Office of External Communications
U.S. EPA Region 5
ph: 312-353-1159

To: Hedman, Susan[hedman.susan@epa.gov]; Hyde, Tinka[hyde.tinka@epa.gov]; Kelley, Jeff[kelley.jeff@epa.gov]
Cc: Peterson, John[peterson.john@epa.gov]; Arcaute, Francisco[Arcaute.Francisco@epa.gov]; Singer, Joshua[Singer.Joshua@epa.gov]; Bassler, Rachel[Bassler.Rachel@epa.gov]; Rowan, Anne[rowan.anne@epa.gov]; Poy, Thomas[poy.thomas@epa.gov]; Fiscus, Taylor[Fiscus.Taylor@epa.gov]; Kaplan, Robert[kaplan.robert@epa.gov]; Fortin, Denise[Fortin.Denise@epa.gov]; Deamer, Eileen[deamer.eileen@epa.gov]; Beckmann, Ronna Erin[beckmann.ronna@epa.gov]
From: Cassell, Peter
Sent: Wed 10/7/2015 9:17:45 PM
Subject: RE: Flint Clips 10/7 COB

- □□□□□□□□ Flint had no plan to minimize lead corrosion in people's drinking water post river switch
- □□□□□□□□ Michigan Governor Rick Snyder dedicating $1 million to purchase lead filters for Flint residents
- □□□□□□□□ Public Health Emergency Declared in Flint, Michigan Due to Lead Contamination in Water
- □□□□□□□□ Michigan
- □□□□□□□□ CBS Evening News puts Flint water crisis on national stage
- □□□□□□□□ Poisoning People, the Future and the Public Interest in Flint, Michigan
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- □□□□□□□□ Erin Brockovich highlights the Flint water fight
- □□□□□□□□ Guyette: Federal Oversight Needed to Assure Water Safety in Flint
- □□□□□□□□ Lead levels in Mich. city have moms avoiding tap water
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- □□□□□□□□ Flint police block some media, public from water advisory meeting
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- □□□□□□□□ How to get your free Flint water filter
- □□□□□□□□ Michigan providing water filters in Flint after high lead readings

- □□□□□□□□ Uber Collecting Bottled Water For Flint Schools
- □□□□□□□□ How lead in drinking water can be harmful to children, others
- □□□□□□□□ Flint water

Flint had no plan to minimize lead corrosion in people's drinking water post river switch

By Rebecca Williams & Lindsey Smith · Oct 6, 2015

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http://michiganradio.org/post/flint-had-no-plan-minimize-lead-corrosion-peoples-drinking-water-post-river-switch#stream/0

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Listen to today's Environment Report.

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<img src="/sites/michigan/files/styles/default/public/201510/1394876976_4d5541c0d5_b.jpg" alt="Beach-Garland Street - Flint River Bridge.">

Beach-Garland Street - Flint River Bridge.

Credit Sarah Razak / Flickr - http://michrad.io/1LXrdJM

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**This post has been updated.*

Related Program:

The Environment Report

Tags:

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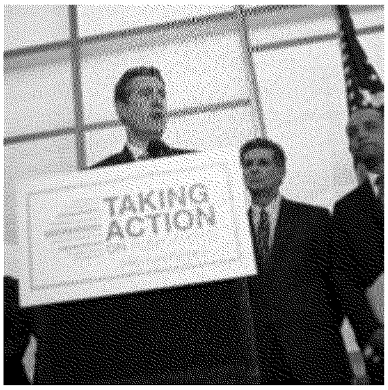
Michigan Governor Rick Snyder

dedicating $1 million to purchase lead filters for Flint residents

Submitted by Diane Hoffman on Wed, 10/07/2015 - 16:58

http://nycity.today/content/286001-michigan-governor-rick-snyder-dedicating-1-million-purchase-lead-filters-flint



It is now that Michigan Gov. Rick Snyder has agreed that there are profound problems with Flint's water. For over a year, Flint residents have been saying that their water is not ok. They have complained about its bad smell, bad taste and also told that people have become sick after having it, but the state told them that the water was safe.

Flint's water had enormous amount of lead coming from aging pipes. It has been entering into the water. The problem has aggravated due to the failure of adding appropriate chemicals by local treatment plant.

For past so many years, the City of Flint has got its water from the Detroit Water and Sewerage Department. In 2013, the city chose to join the Karegnondi Water Authority. In 2014, it chose to pump water from the Flint River.

It is now that the governor's team has acknowledged that its data is not complete and there is a need to take action. Snyder is promising $1 million to purchase lead filters for Flint residents. He has ordered further testing and working on to improve corrosion control at the Flint water treatment plant. As per experts, Flint River was never a permanent solution to the city's water requirements.

It was just a short-term fix for the city that is making efforts to save money. Switching to river led Flint to save $7 million a year rather than $5 million.

Topics:

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News

Public Health Emergency Declared in Flint, Michigan Due to Lead Contamination in Water

http://ecowatch.com/2015/10/07/flint-michigan-lead-contamination/

Lorraine Chow | October 7, 2015 11:27 am | Comments

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After a public health emergency was declared Tuesday due to the ongoing water crisis in Flint, Michigan, the state is now distributing free water filters and bottled water to the city's residents, according to *Reuters*.

#FlintWater quality reaches crisis level http://t.co/mIDIasyiuk pic.twitter.com/MSBLYEIfL5

— Progress Michigan (@ProgressMich) September 25, 2015

Recent tests from a local children's hospital showed that children had elevated levels of lead in their blood a year after the city began using water from a local river instead of buying Lake Huron water through Detroit in order cut costs.

The tests "found the number of Flint kids under the age of 5 years old with above average lead levels nearly doubled city-wide and in some cases, tripled," reported FOX 2's Randy Wimbley.

"Our children are a top priority given the effects lead can have on their development," Mayor Walling said in a statement. "Any bottled water donations we receive will be used for our children and other high risk groups, such as our seniors."

It appears that the toxic metal had been entering drinking water through corroded pipes and plumbing materials, according to Flintwaterinfo.com.

Or, as Henry Henderson, the director of Natural Resources Defense Council's (NRDC) Midwest office, explained in a blog post, "the water from the Flint River, as treated, is far more corrosive than the Lake Huron water that had previously coursed through the City's pipes and water infrastructure."

"As a result of the change to corrosive river water," Henderson continued, "the aging lead pipes released higher concentrations of lead into Flint's homes. Despite the urgently stated concerns raised by residents and presented to state and local officials, the people of Flint were told their water was safe."

Based on state official's action plan for #flintwater, we can't let this crisis continue. http://t.co/th35Vp6g4Q pic.twitter.com/MHtH1HyzbX

— Senator Jim Ananich (@jimananich) October 2, 2015

Lead, which is most harmful to pregnant women, women who are nursing and children under age 6, can damage the brain and kidneys, and can interfere with the production of red blood cells. Lead poisoning can also irreversibly stunt a child's mental and physical development.

The U.S. Environmental Protection Agency says that 15 parts per billion (ppb) is the maximum recommended level of lead in household water. However, an alarming Flint Water Study found that about 10 percent of their local water samples had values of lead at levels of 25 ppb.

Local parent Lee-Anne Walters told *The Guardian* she was "shocked, angry … and hysterical" after learning in March that her son's immune system was compromised after unsafe lead exposure.

“I just couldn’t believe that we were paying to poison our kids,” she said.

To make matters worse, as *The Guardian* pointed out, Flint residents “pay some of the highest water rates in the U.S., in the community known for its economic decline.”

Officials had been insisting the water in Flint was safe and within federal guidelines. But they finally shifted positions this week after a public health emergency was declared by Genesee County Sheriff Robert Pickell.

Reuters reported that on Friday Michigan Gov. Snyder announced a plan that calls for “increased water testing, additional precautions for families with lead plumbing and long-term solutions to address the city’s water infrastructure challenges.”

The plan does not include restoring Detroit as a water source.

15

comments

CBS Evening News puts Flint water crisis on national stage

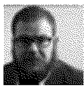
1 / 7

Arthur Woodson yells in a megaphone marching with other Flint residents protesting the water quality in the city on Monday, Oct. 5, 2015, outside Flint City Hall in Flint, Mich. Tests have shown elevated lead levels in the drinking water after Flint began drawing and treating water from the Flint River. Danny Miller | MLive.com

Danny Miller | dmille17@mlive.com

Print Email

http://www.mlive.com/news/flint/index.ssf/2015/10/flint_water_crisis_gets_nation.html



By Gary Ridley | gridley@mlive.com
Follow on Twitter

on October 07, 2015 at 9:56 AM, updated October 07, 2015 at 12:29 PM

FLINT, MI -- Flint's water crisis is garnering national attention after the issue was featured in a segment on the CBS Evening News.

"It's not safe to drink the water in Flint, Michigan," anchor Scott Pelley said Tuesday, Oct. 6, as he introduced the roughly two-minute long report.

RELATED: How the Flint water crisis emerged

The segment included interviews with residents affected by poor water conditions in the city and with Mayor Dayne Walling.

"I am angry that Flint's been put in this situation," Walling told reporter Dean Reynolds.

The report highlighted Flint's switch from treated Detroit water to treating its own water from the Flint River.

Controversy surrounding the change began not long after the switch when residents started to complain of foul-smelling, dirty water. The situation escalated when the city was found in violation of the Safe Drinking Water Act when high levels of trihalomethanes -- or TTHM -- a group of four chemicals that are formed as a byproduct of disinfecting water. Over many years, the chemicals could cause liver, kidney or central nervous system problems and an increased risk of cancer.

The controversy grew once a researcher from Virginia Tech discovered elevated levels of lead in the city's water. Researchers pointed to the corrosive nature of treated Flint River water as the cause, saying the water caused lead to leach from pipes and solder into the water supply. Lead concerns were expounded when a Hurley Medical Center researcher discovered elevated lead levels in Flint children since the water switch.

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Poisoning People, the Future and the Public Interest in Flint, Michigan

Posted: 10/06/2015 6:38 pm EDT Updated: 10/06/2015 6:59 pm EDT

http://www.huffingtonpost.com/henry-henderson/poisoning-people-the-futu_b_8254390.html

SWITCHBOARD .nrdc.org Lead is a devastating toxin. It ravages the brain. Robs children of IQ points and brain function. And deprives our society of vast potential. It has cast a huge, destructive shadow across human civilization.

That's why Americans eliminated it from paint. From gasoline. And have struggled mightily to ban it from toys. The continuing negative impact of lead remains in soil, homes and infrastructure exposed to lead in the past, before we were able to ban it from products.

And in Flint, Michigan, its concentration in the drinking water is shockingly high.

Pipes and taps in Flint have brought water replete with toxic lead into homes for some time since the cash-strapped city shifted water sources from Detroit's treated supply drawn from Lake Huron, and began to pull water out of the Flint River.

All water isn't the same everywhere. The water from the Flint River, as treated, is far more corrosive than the Lake Huron water that had previously coursed through the City's pipes and water infrastructure. As a result of the change to corrosive river water, the aging lead pipes released higher concentrations of lead into Flint's homes. Despite the urgently stated concerns raised by residents and presented to state and local officials, the people of Flint were told their water was safe. This amazing situation has gone on repeatedly over the past year and a half. During which more and more lead-contaminated water has gone into homes, drinking glasses, baby formula, and cooking water.

Put simply and starkly: the water being delivered to the people of Flint is not safe.

Independent tests have demonstrated the city's water to be unfit for consumption. This is particularly the case with children, whose brains and bodies are developing, making them especially vulnerable to the poisonous impact of lead.

And yet, Flint's water pipes, treatment works and supply have not been fixed or effectively addressed. Instead of immediately switching the source back to Lake Huron water through Detroit, the city and state are taking baby steps--seemingly to buy time for a new water supply pipeline that will be completed next summer.

We don't think this is right. You probably don't either.

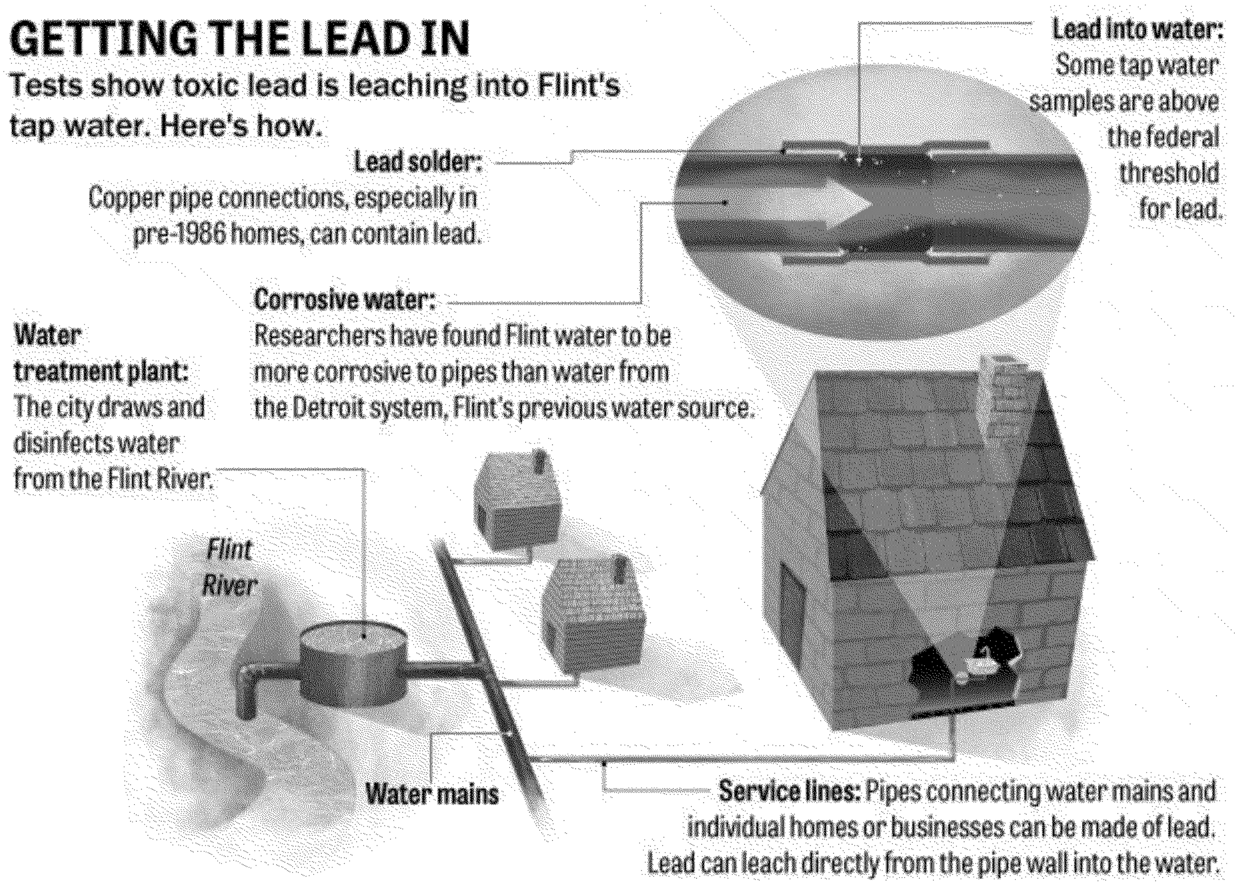
Because the situation is wrong and unacceptable, NRDC joined with local groups and the Michigan ACLU to demand emergency federal action under the Safe Drinking Water Act. If the City and State are not going to get the poison out of Flint's water, the federal government has authority to do so under emergency powers. Our group filed a petition with the U.S. Environmental Protection Agency last week to demand quick action.

We don't think anyone should be forced to drink dangerous water. Particularly, citizens of our great democracy should not have contaminated water delivered to their homes through the public water utility. Flint, Michigan is an American city; it was a manufacturing marvel that helped define the American Century with the production of cars and a strong, vibrant middle class; and, it happens to be a city in the center of the largest resource of fresh water in North America, the Great Lakes. Our fellow citizens deserve much, much better. There is strong moral responsibility to act and act quickly. The people of Flint should not drink lead-laced water for another day, let alone another year.

Flint, MI image by Axel Drainville via Flickr

Watch live: Experts meet amid Flint drinking water crisis

http://www.mlive.com/news/flint/index.ssf/2015/10/watch_live_advisory_committee.html


GETTING THE LEAD IN
Tests show toxic lead is leaching into Flint's tap water. Here's how.
Lead solder: Copper pipe connections, especially in pre-1986 homes, can contain lead.
Lead into water: Some tap water samples are above the federal threshold for lead.
Corrosive water: Researchers have found Flint water to be more corrosive to pipes than water from the Detroit system, Flint's previous water source.
Water treatment plant: The city draws and disinfects water from the Flint River.
Flint River
Water mains
Service lines: Pipes connecting water mains and individual homes or businesses can be made of lead. Lead can leach directly from the pipe wall into the water.

(MLive.com)

Print Email

By Ron Fonger | rfonger1@mlive.com
on October 07, 2015 at 3:04 PM, updated October 07, 2015 at 3:10 PM

Reddit

FLINT, MI -- A blue ribbon panel of water experts that has been dormant for months is meeting this afternoon to discuss Flint's drinking water problems.

The committee is meeting on the third floor of Flint City Hall.

Mayor Dayne Walling said the committee will "discuss short, intermediate and long-term (plans) including filters, corrosion control, the (Detroit Water and Sewerage Department) option, lead service lines and the" Karegnondi Water Authority pipeline that officials expect to serve Flint at some point next year.

On a possible reconnection to Detroit, Walling said: "That option continues to be actively under discussion."

A livestream of the meeting is being made available by Sen. Jim Ananich, D-Flint, and Senate Democrats and can be viewed below.

Erin Brockovich highlights the Flint water fight

Posted By Lee DeVito on Wed, Oct 7, 2015 at 12:07 PM

http://www.metrotimes.com/Blogs/archives/2015/10/07/erin-brockovich-highlights-the-flint-water-fight

•□□□□□□□□ Photo credit: Eva Rinaldi from Sydney Australia,via Wikimedia Commons

•□□□□□□□□ Erin Brockovich

Environmental activist Erin Brockovich took to Facebook on Tuesday to slam Michigan authorities regarding Flint's drinking water controversy — and offered a shoutout to *Metro Times* and contributor Curt Guyette for covering the issue.

Brockovich posted a photo of Brad Wurfel, the Communications Director at Michigan Department of Environmental Quality, captioning the image with a lengthy tirade calling Wurfel a "spin doctor" and "paid distorter of truth" for his role in downplaying a July EPA memo and ongoing investigation that revealed the presence of lead in Flint's drinking water supply.

Brockovich then cited *Metro Times* contributor Curt Guyette's recent reporting on the issue, highlighting three times Wurfel had attempted to discredit or deny the ongoing investigations.

On Thursday, the Genesee County Health Department finally admitted there was a problem with Flint's water, declaring a public health emergency and urging citizens not to drink water that has not been tested or filtered.

As Guyette reported, further study of Flint's water quality was launched by a group of citizens working in conjunction with researchers at Virginia Tech and the ACLU of Michigan, who continued to study the issue despite Wurfel's denial. "If [they] had been willing to swallow that claim, children in Flint would still be getting lead poisoned," he wrote.

Read Guyette's story here or read it in this week's print edition of *Metro Times*. Read Brockovich's full post below:

Tags: Erin Brockovich, Flint, Brad Wurfel, lead, water, drinking water, Curt

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Guyette: Federal Oversight Needed to Assure Water Safety in Flint

October 6th, 2015, 10:48 PM

http://www.deadlinedetroit.com/articles/13364/guyette_federal_oversight_needed_to_assure_water_safety_in_fl

THE WEAK HANDS OF THE POOR CAN GIVE NO MORE!!!
They Got $ Rich We Got

Residents of Flint protest outside City Hall in April (ACLU photo)

Curt Guyette, who has been reporting away for months on the Flint water problem, writes in Metro Times that federal oversight is needed to safeguard Flint's drinking water.

Guyette, an investigative reporter for the ACLU of Michigan, writes:

In the past few weeks, the problem of lead in Flint's drinking water has quickly gone from being a story largely ignored by the mainstream media to a scandal that's making headlines nationally.

Faced with overwhelming evidence, state and local officials who adamantly insisted for months that there was no problem have been forced to admit that their unequivocal assurances were completely false.

For that reason, the U.S. EPA needs to quickly respond to last week's formal petition calling upon the agency to step in and take a greater role in assuring that Flint's water is safe. Also needed is an investigation by an outside entity with subpoena powers to determine if laws were broken and, if so, who broke them.

One thing is certain: The MDEQ (Michigan Department of Environmental Quality) has failed miserably in its obligation to ensure that the public health is being protected. Just the opposite: The agency's consistent denials that a danger existed only served to create a false sense of security, keeping people from taking the actions needed to help limit their exposure to a potent neurotoxin that can cause irreversible damage — especially to children.

Lead levels in Mich. city have moms avoiding tap water

USA Today Network Nancy Kaffer, Detroit Free Press 9:02 p.m. EDT October 6, 2015

http://www.usatoday.com/story/news/nation-now/2015/10/06/lead-water-flint-michigan/73486840/

Dan Wyant, director for the Michigan Department of Environmental Quality and Nick Lyon, director for the Michigan Department of Health and Human Services, discuss action plan for Flint drinking water. Ryan Garza Detroit Free Press

(Photo: Ryan Garza, Detroit Free Press)

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FLINT, Mich. — Outside a taco shop on Fifth Street, Estella Walker balances a gallon jug of water on top of the stroller that holds her 3-month-old son, DeWayne.

She's mixing bottles of formula for DeWayne and his 19-month-old sister Vanessa.

Nadene Strickland sits outside her home on the city's north side, watching her grandsons play basketball. She still drinks the water. She can't afford bottled.

Shopping at the local farmers market with five of her seven children, Tena Fransioli says she hasn't used tap water in a long time.

Across town, LeeAnne Walters' kids are having bath night. She heats bottled water in the microwave and carries it to the bathroom, slowly filling the tub.

USA TODAY

Yards pose health risk to kids, moms near factory site

In Melissa Mays' bathroom, a reminder is taped to the wall: To brush your teeth, use the bottled water on the bathroom counter.

This is life in Michigan's seventh largest city, where you really should not drink the water.

“I was hysterical. I cried when they gave me my first lead report.”

LeeAnne Walters, Flint, Mich.

For more than a year, Flint residents have been screaming that their water wasn't OK, that it smelled bad, tasted bad, looked bad and was making them sick.

Few listened. The state told them, again and again, that the water was safe — that contamination had been handled and that the water was within acceptable levels.

Not until the end of September did Michigan Gov. Rick Snyder finally acknowledge the profound problems with Flint's water. Lead, from aging pipes, is leaching into the water the city pumps from the Flint River, exacerbated by a local treatment plant's failure to add appropriate chemicals.

For decades, the City of Flint bought its water from the Detroit Water and Sewerage Department, water that arrived treated to make it safe for human consumption. In 2013, the city opted to join the Karegnondi Water Authority along with Genesee, Lapeer and Sanilac counties, and in 2014 to pump water from the Flint River while the new system is under construction.

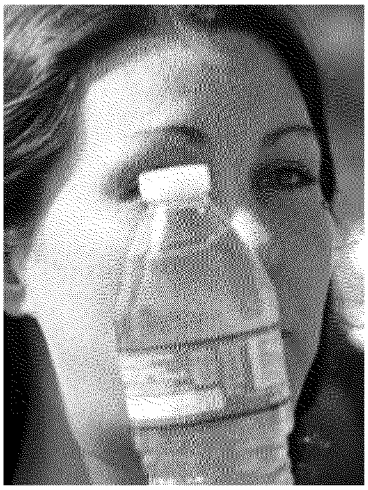
Joining the Karegnondi Water Authority didn't mandate the end of Flint's relationship with Detroit's water system. Genesee County, for example, has continued to purchase its water from Detroit, albeit at a premium, county drain commissioner Jeff Wright said.

USA TODAY

N.C. residents worry over coal ash ponds

In Flint, both decisions were made during the appointments of four different emergency managers, turnaround guys the governor brought in to fix Flint's budget woes, and with the approval of the Michigan Department of Environmental Quality, which monitors water quality and treatment.

For most of the past year, the state has told residents that the water here was fine, that it met the standards of the Safe Drinking Water Act. The state, for the most part, still says that's true.



Jessica Owens of Flint, Mich., holds a bottle of drinking water Oct. 2, 2015, that came from her home two weeks previous that she said had been proven to contain lead. (Photo: Ryan Garza, Detroit Free Press)

But now the governor's team acknowledges that its data are incomplete and that high lead levels found in the water for this city of 99,000 — and an increasing number of Flint kids with elevated blood-lead levels — merit action. Snyder is dedicating $1 million to purchase lead filters for Flint residents, has ordered further testing and is improving corrosion control at the Flint water treatment plant, which should help keep lead out of the water.

Flint River never was meant to be a long-term answer to the city's water needs. It was a short-term fix for a city scrambling to save money.

When Flint joined the Karegnondi Water Authority, the Detroit Water and Sewerage Department terminated its 35-year contract with the city. To continue to purchase Detroit water, Flint would have had to renegotiate a short-term contract at a higher cost.

Switching to river water saved Flint $5 million to $7 million a year.

The region had long wanted its own water system, Wright said. Because of its elevation and distance from Detroit, Flint paid a higher rate for Detroit water than most far-flung communities.

Only one pipeline stretches that far north, and that means Flint — and the other Karegnondi Water Authority communities — are vulnerable. In 2000, the pipeline went down, leaving 250,000 people without water for four days, he said.

It had happened before, and it has happened since. The area needed a second pipeline, but Detroit wouldn't build it without a 30-year commitment from the communities the pipeline would serve.

USA TODAY

Audit faults EPA in delays probing lead factory dangers

At the rates Detroit Water is obliged to charge, the communities were reluctant to make that commitment, Wright said.

When the Karegnondi Water Authority system is complete next year, Flint will be back on Lake Huron water, same as Detroit. But unless its treatment plant is capable of properly treating the water, its problems will not end.

“There is no safe level of lead.”

Dr. Eden Wells, Michigan Department of Health and Human Services

Because much of this area's infrastructure is composed of copper pipes with lead welds, systems like Detroit's add anticorrosive agents to prevent lead from leaching into the water. River water is more difficult to treat than lake water, and its chemistry can change daily, Wright said.

Because the Flint River is shallow compared with Lake Huron its temperature is higher. All of this affects the composition of the water and the chemicals required to make it potable and safe to pass through old pipes.

When Flint started pumping river water, its local plant either never employed corrosion control or didn't use sufficient control. Remarks that Dan Wyant, Michigan Department of Environmental Quality chief, made Friday didn't make that entirely clear and Snyder's office didn't respond to an e-mail seeking clarification.

It didn't take long for residents to notice a difference. By June 2014, according to the city, residents began to complain about the water.

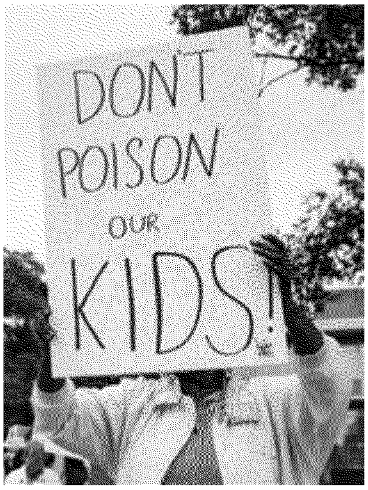
And as water quality suffered, Flint residents' bills have gone up, thanks to rate increases imposed first by Mayor Dayne Walling, and then built into the budget by Snyder's emergency managers. A Genesee Circuit Court judge issued an injunction in August rolling back a 35% rate increase imposed in 2011.

USA TODAY

Lead poisoning's impact: Kids suspended more at school

A Virginia Tech University researcher tested water from hundreds of Flint homes, releasing a report showing elevated lead levels in the city's children. State data showed the highest rates of lead in Flint's water in 20 years.

And a blood test analysis that a Michigan pediatric researcher released Sept. 24 and the state Department of Health and Human Services confirmed Friday, found the percentage of Flint kids with elevated blood-lead levels — 5 micrograms per deciliter or more — jumped from 2.1% in the 20 months prior to Sept. 15, 2013, to 4.0% between Jan. 1 and Sept. 15 this year. In certain ZIP codes, it doubled since the switch.



Flint residents protest the water quality in the city Oct. 5, 2015, outside City Hall in Flint, Mich. (Photo: Danny Miller, AP)

In children, exposure to lead can cause behavior or attention problems, hearing problems, kidney damage, reduced IQ and slowed body growth, among other effects. The damage is irreversible.

"There is no safe level of lead," said Dr. Eden Wells, the health department's chief medical executive.

For children like Gavin, one of LeeAnne Walters' 4-year-old twins, the potential for problems is more serious. Because Gavin's immune system is compromised — a condition unrelated to the water — he's more susceptible to the effects of lead.

The whole family developed rashes, likely because of a disinfectant added to the water to combat coliform bacteria.

Gavin stopped gaining weight, lagging his twin; now he's 37 pounds, compared with his twin's 52 pounds. Doctors weren't sure what was happening.

Then she asked the city to test her water. It showed astronomically high rates of lead, prompting an urgent e-mail exchange with the city, the state Department of Environmental Quality and the U.S. Environmental Protection Agency, according to documents obtained by the American Civil Liberties Union through the Freedom of Information Act.

Walters said she received an urgent call from city hall advising her to stop using her water.

USA TODAY

Lead poisoning toll revised to 1 in 38 young kids

Lead screening showed that Gavin's blood-lead levels had soared, up to 6.5 micrograms per deciliter of blood from 2, before the switch.

"I was hysterical," Walters said. "I cried when they gave me my first lead report."

Before that, she'd pushed her kids to drink water instead of juice or soda.

"I'm trying to do my job as a mom," she said. Now, "my kids will never drink tap water again."

One of the worst things about lead is that it's hard to know exactly how it will manifest.

USA TODAY

EPA fails to revise key lead-poisoning hazard standards

"What's the difference going to be between Gavin and his brother in school? Is he going to have more issues as this progresses?" Walters asked.

That's what haunts Mays, who said her family has experienced a range of health problems she links to the water. Mays and Walters have become relentless advocates for safe water, leading protests, interacting with Virginia Tech researchers and challenging city and state assurances that the water was OK.

These days, even Mays' cat drinks bottled water.

USA TODAY

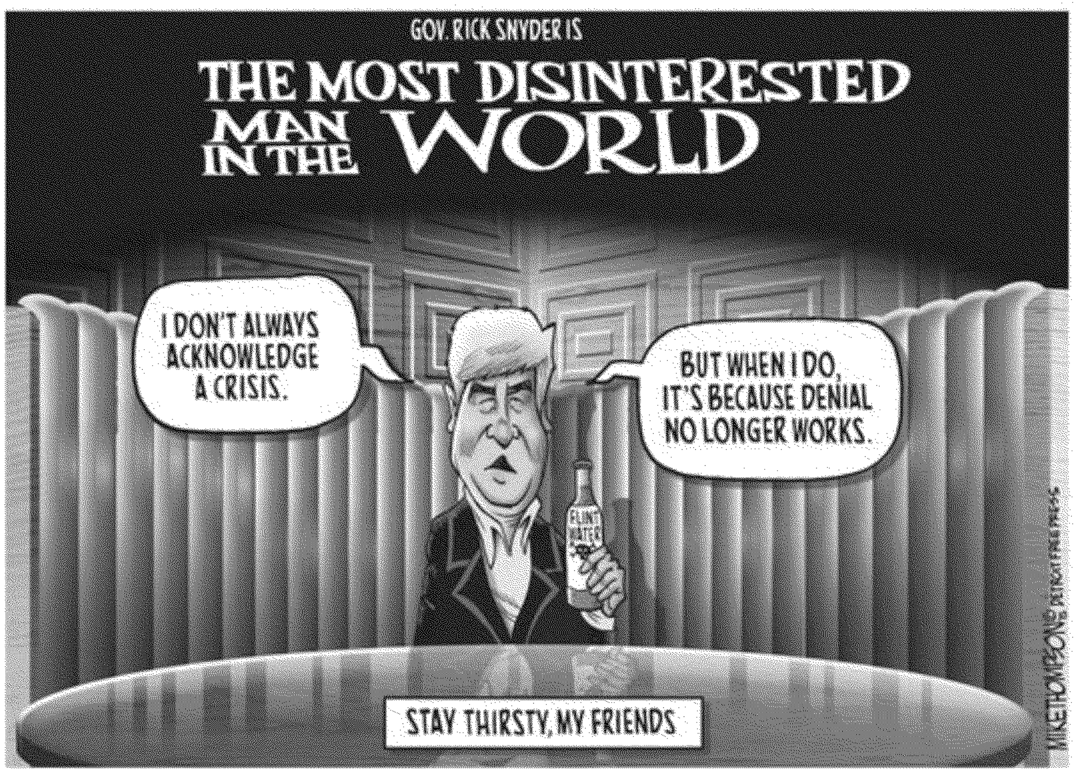
Lead poisoning: What parents can do

"I pushed them to drink water: 'Put down that juice, go get some water,' " she said of her teenage sons. "Lead is in our blood."

As Mays' children grow, she said she'll always wonder whether any problem is because of lead or would it have happened anyway.

"I'll never know," she said.

Contributing: Robin Erb and Kathleen Gray, Detroit Free Press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MIKETHOMPSON DETROIT FREE PRESS

The cartoonist's homepage, freep.com/mikethompson (Photo: Mike Thompson, Detroit Free Press)

Flint River Fest canceled amid city's drinking water problems

By Steve Carmody • 6 hours ago

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Flint's drinking water controversy has led to the cancelation of a festival celebrating the Flint River.

The Flint River

Credit Steve Carmody / Michigan Radio

Tests link the corrosive nature of the river water to high lead levels in Flint tap water. Complaints about the quality of Flint's drinking water have been escalating since the city switched from Detroit water to the Flint River last year.

Rebecca Fedewa is with the Flint River Watershed Coalition, one of the organizers of River Fest.

She says organizers of Flint River Fest were worried Friday's event would not be the showcase for the Flint River they intended.

"It is a great recreational resource. It's a huge asset for the city, and that's what we wanted to show people," says Fedewa. "With the drinking water situation, we felt it could just cast a cloud over what we were trying to do."

Organizers hope to reschedule Flint River Fest for the Spring.

http://michiganradio.org/post/flint-river-fest-canceled-amid-citys-drinking-water-problems#stream/0

Flint police block some media, public from water advisory meeting

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By Ron Fonger | rfonger1@mlive.com
on October 07, 2015 at 4:08 PM, updated October 07, 2015 at 4:18 PM
http://www.mlive.com/news/flint/index.ssf/2015/10/flint_police_block_press_publi.html

The scene outside a meeting of Flint's Technical Advisory Committee today, Oct. 7.Ron Fonger | The Flint Journal

FLINT, MI -- City police blocked the door outside the meeting room of a committee of water experts today, Oct. 7, leaving some news reporters and the public outside.

Flint spokesman Jason Lorenz said City Administrator Natasha Henderson ordered the arrangement because the room where the committee was meeting in City Hall was too small to accommodate non-committee members.

The Technical Advisory Committee, which has about 30 members, has been dormant for months, but was singled out by state officials last month as being a key part of improving Flint's water quality moving forward.

High levels of lead in city water and in the blood of children and infants since the city changed its water source in April 2014 have triggered a public health emergency here, including the mass distribution of water filters.

Mayor Dayne Walling told The Flint Journal-MLive earlier this week when and where the committee meeting would be today and indicated it was open to the public.

But when citizens and journalists showed up before the meeting started at 2 p.m., they were turned away from the door by police.

As the meeting started, a door to the City Council meeting room was left open. Some reporters, including a Flint Journal reporter, were allowed inside only as chairs opened up -- about 25 minutes after the meeting started.

The committee is discussing issues including the potential for the city to return to purchasing Lake Huron water from the Detroit Water and Sewerage Department.

Formed in March by Walling and former emergency manager Jerry Ambrose, the advisory committee has met just twice, but it has grown to include an expert appointed to serve by the U.S. Environmental Protection Agency's Office of Research and Development.

In announcing an "action plan" for Flint water Friday, Oct. 2, state officials touted the committee's role in ensuring "the best technology, practices and science are being followed" going forward.

Debunking that social media rumor on Flint water filters

1 / 30

Genesee County employee Shemicka Patton, center, assists Flint residents in filling out paperwork to receive water filters funded by private donors, local organizations and the state of Michigan on Wednesday, Oct. 7, 2015, at the Genesee County Community Resource Department office on Lippincott Boulevard in Flint, Mich. Danny Miller | MLive.com

Danny Miller | dmille17@mlive.com

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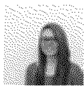By Sarah Schuch | sschuch@mlive.com
on October 07, 2015 at 1:06 PM, updated October 07, 2015 at 4:50 PM

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Flint police block some media, public from water advisory meeting

Here's how that toxic lead gets into Flint water

Debunking that social media rumor on Flint water filters

Water, water everywhere and not a drop that's safe to drink -- Andrew Heller

How to get your free Flint water filter

All Stories

Confirming Brita faucet filter removes lead Reporter Sarah Schuch calls a Brita customer service representative and confirms that their faucet mount filters remove lead, and are NSF certified to do so.

FLINT, MI – The question has been spreading on social media and through the neighborhoods: Are the free faucet water filters being handed out in Flint certified to remove lead?

The answer is yes. Both NSF International -- the organization that certifies consumer products for various safety standards -- and Brita confirmed that all Brita faucet mount filters, whether white or chrome, are certified to reduce lead in drinking water.

A video making the rounds on Facebook shows a man calling Brita customer service and asking if the filters remove lead. According to the video, a response from a woman identifying herself as a customer service representative named Camille says the Brita faucet filter lost its NSF certification to remove lead. The woman claimed the packaging that says the filter is NSF certified is outdated, and the filter is no longer certified.

The Facebook video, posted Tuesday evening, had been viewed more than 10,000 times as of 1 p.m. Wednesday.

The information given by "Camille" over the phone in the video is false, according to NSF, a Flint Journal phone call to Brita's customer service and a follow-up phone call to a Brita representative.

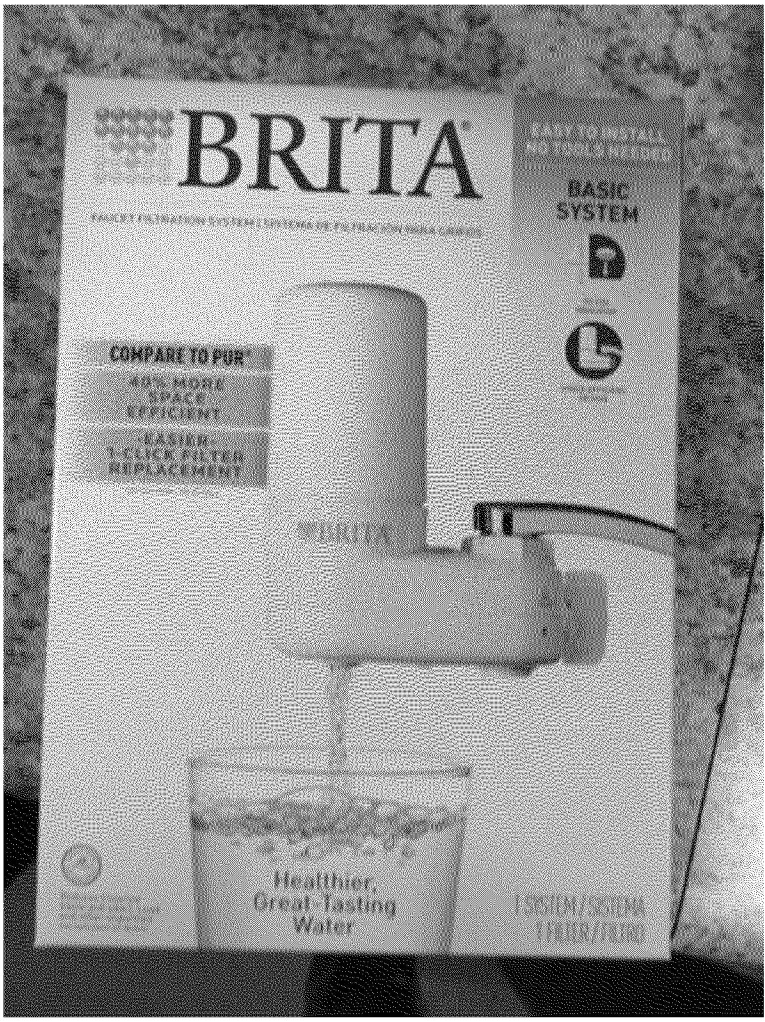
David Kargas, a spokesman for Brita, confirmed that the information heard on the video is incorrect, and there is no issue with outdated packaging. After checking into the situation, Kargas said the customer service representative pulled up the wrong Brita model number, and therefore gave incorrect information.

"We have worked with our customer service team to correct this," he said in an email.

"All Brita faucet mount filters, including the 20,000 faucet mount filters distributed this week by state and local organizations, are certified by NSF International to remove 99.3 percent of lead from tap water that has a lead concentration of 150 parts per billion – far higher than what has been reported in Flint," Kargas said.

"There is no possible issue with old or outdated packaging," he said. "Quite simply, all Brita Faucet Mount filters are certified by NSF International to reduce lead."

Related: How to get your free Flint water filter



One of the Brita faucet mount filters being given away in Flint, Michigan.MLive.com

Kargas said he was surprised to hear early Wednesday morning of the video going around social media.

"It's of paramount importance to us that we are providing the information not just in this instance but in all instances," Kargas said. "We've been working with a variety of different folks in Flint over the past few days. ... Seeing the wrong information going around is discouraging to us."

According to Brita's website, the pitcher and dispenser filters do not remove lead but the faucet filters do. The faucet filters are the ones being given out in Flint.

NSF International also confirmed that the Brita faucet filters will remove 99.3 percent of lead.

NSF International, the public health and safety organization that tests and certifies residential drinking water filtration systems, has confirmed that the three water filter systems being distributed by officials in Flint are currently certified by NSF International for lead reduction, according to a written statement.

"Specifically, Brita Faucet Filtration System, model number SAFF-100 (in white, black or chrome), the PUR Faucet Mount, model number FM-3700B, and the Zero Technologies Water Treatment Pour Through Pitcher, model number ZD-018, are certified for lead reduction in accordance with NSF/ANSI 53 – Drinking Water Treatment Unit Standard for Health Effects," the statement read.

Health advisories warning of some of the harmful effects of lead were issued by the city and county after elevated levels of lead were discovered in the drinking water of some Flint customers.

Meanwhile, the Flint School District began asking students to avoid school drinking fountains and bring bottled water to school.

The state issued an "action plan" for Flint water that includes filters and free water tests, among other items, and various community organizations have also begun donating filters and bottled water.

A call to the Brita customer service line (video above) asked about the Brita faucet filter model SAFF-100 – the brand being handed out at GCARD and other locations -- and was told it does remove lead from the water.

On the filter's box it reads NSF/ANSI Standard 53, which shows that it is certified to remove lead.

Individuals wishing to verify that a specific filter is NSF certified can do so via the NSF website. Here are the links to verify each certification: Brita Faucet Filter System SAFF-100, PUR Faucet Water Filter System and the Zero Water Technologies Water Pitcher Filtration System

Consumers can contact NSF International at info@nsf.org or 1-800-673-8010 for any additional questions.

Additionally NSF International has other resources for the consumer regarding drinking water safety:

http://www.mlive.com/news/flint/index.ssf/2015/10/debunking_that_social_media_ru.html

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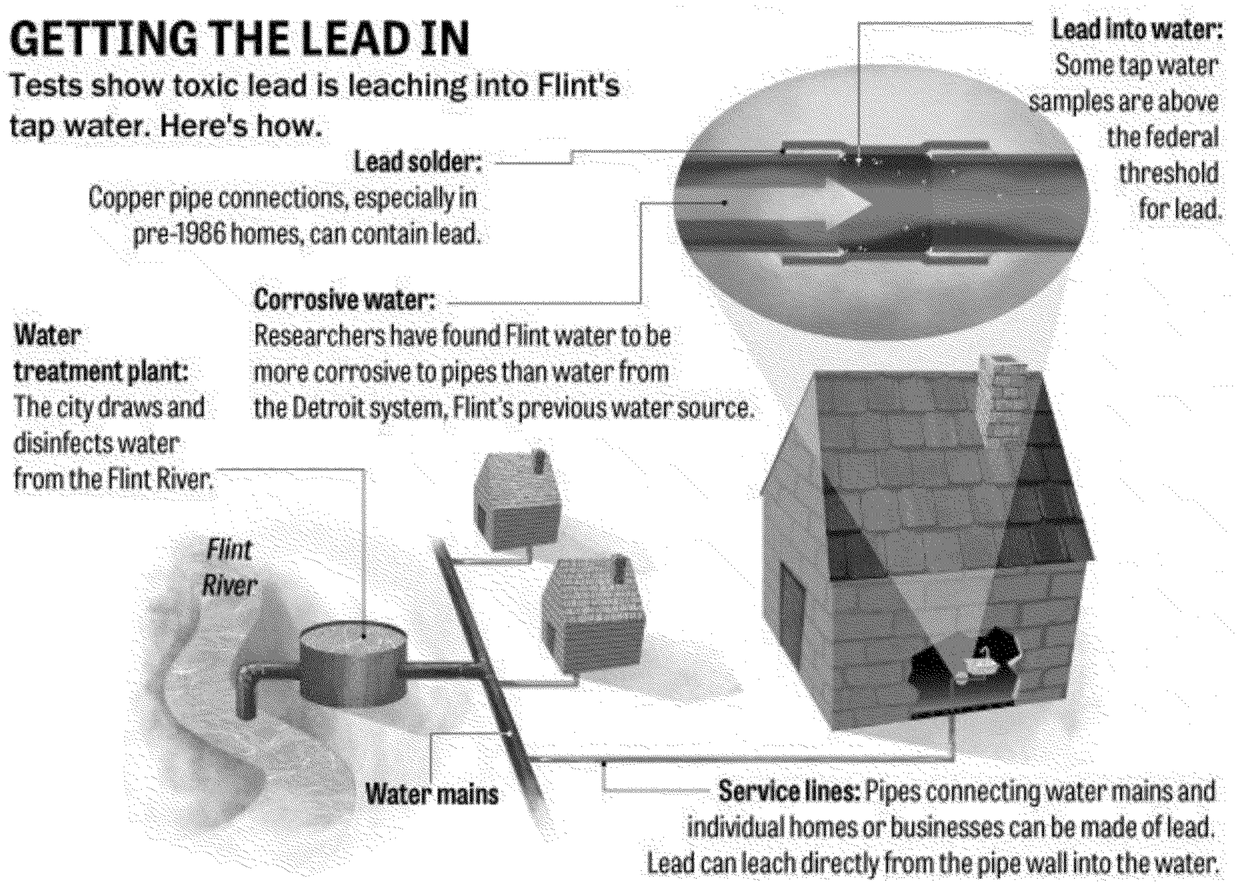
Here's how that toxic lead gets into Flint water


GETTING THE LEAD IN
Tests show toxic lead is leaching into Flint's tap water. Here's how.
Lead solder: Copper pipe connections, especially in pre-1986 homes, can contain lead.
Lead into water: Some tap water samples are above the federal threshold for lead.
Corrosive water: Researchers have found Flint water to be more corrosive to pipes than water from the Detroit system, Flint's previous water source.
Water treatment plant: The city draws and disinfects water from the Flint River.
Flint River
Water mains
Service lines: Pipes connecting water mains and individual homes or businesses can be made of lead. Lead can leach directly from the pipe wall into the water.

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By Ron Fonger | rfonger1@mlive.com
on October 07, 2015 at 2:23 PM, updated October 07, 2015 at 2:25 PM

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flint water

Flint police block some media, public from water advisory meeting

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Water, water everywhere and not a drop that's safe to drink -- Andrew Heller

How to get your free Flint water filter

All Stories

FLINT, MI -- Tests show water leaving Flint's treatment plant is lead free, but by the time it reaches the tap, it sometimes has elevated levels of lead, and here's why.

Since April 2014, the city has drawn raw water from the Flint River before treating it at its plant on Dort Highway.

Water is pumped into pipes that carry it to about 31,000 homes and businesses in the city, an estimated half of which have individual lead service lines.

Water from Lake Huron, which the city had purchased from Detroit since the 1960s, was far less corrosive than water that's being produced from the river today, according to researchers from Virginia Tech university.

The city's own testing has also shown lead levels have been rising since the city began using the Flint River as its water source. Virginia Tech testing has shown 10 percent of homes tested across the city had 25 parts per billion of lead or more -- far more than the allowable level -- 15 ppb -- set in federal guidelines.

As Flint River water contacts lead, particularly in areas where water is stagnant, it leaches into the water supply inside homes and businesses. Lead can leach from service lines and plumbing materials, including fixtures, faucets and fittings, according to the DEQ.

Although DEQ Director Dan Wyant said last week that Flint had a plan in place for corrosion control when the switch to the river was made, city and state officials have said previously that those plans were never fully developed as they waited on the results of two rounds of water testing inside city homes.

Last month, Flint Mayor Dayne Walling said the city was speeding up plans for making the city's water less corrosive.

The city has not yet spelled out what actions will be put in place to better control corrosion, but Richard Benzie, chief of field operations in the DEQ Office of Drinking Water and Municipal Assistance, has said plans typically involve the addition of supplements such as phosphates at the treatment plant.

Walling has also asked the state for $10 million to begin a program of removing lead service lines in the city, but the DEQ says it would likely take up to 15 years to complete the job of replacing them -- "Even if many crews were contracted."

http://www.mlive.com/news/flint/index.ssf/2015/10/see_step_by_step_how_lead_is_g.html

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How to get your free Flint water filter

1 / 7

Genesee County Health Department and United Way of Genesee County staff help distribute water filters to Flint residents on Saturday, Oct. 3, 2015, at the University of Michigan-Flint's Recreation Center in Flint, Mich. The United Way of Genesse County received donations to purchase over 4000 filters for Flint residents in efforts combat lead levels in Flint's drinking water. Danny Miller | MLive.com

Danny Miller | dmille17@mlive.com

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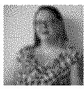
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All Stories

FLINT, MI -- After a number of water filter giveaways to help Flint residents combat high lead levels in their drinking water, city water customers can visit four locations Monday thru Friday 9 a.m. until 4 p.m. to get water filters.

Beginning Tuesday, Oct. 6, Flint residents enrolled in Health and Human Services assistance programs can pick up a water filter at the HHS offices at 125 E. Union Street and 4809 Clio Road.

Residents who are not enrolled in assistance programs should visit the Genesee County

Community Resource Department offices located at 2727 Lippincott Boulevard and 601 North Saginaw Street.

HHS clients who live in the city and who are enrolled in the Family Independence Program, Food Assistance Program, Child Development and Care, State Disability Assistance, or Social Security Insurance programs should bring valid identification and a copy of their water bill to their local HHS office to receive their free filter, the state's statement says.

City residents who are not active HHS clients should bring identification and their water bill to one of the GCCARD locations.

The area's non-emergency help line -- 211 -- is being used to share where Flint residents can find water filters for their homes.

The United Way of Genesee County said in a news release Tuesday, Oct. 6, that Central Michigan 211 can provide callers with details on eligibility for the filters and the location of service centers where they can be picked up.

Operators at 211 can help connect residents who cannot travel with agencies and organizations working to distribute filters to the homebound.

A filter giveaway was held at the University of Michigan-Flint at the Recreation Center on Saturday, Oct. 3. Originally, organizers were focusing on low-income families with children, pregnant women, and the elderly, but opened it up to all residents in the afternoon.

The United Way, University of Michigan-Flint, city of Flint, and other local agencies and businesses partnered to help distribute the filters.

Another filter giveaway was held on Sept. 1 by the Concerned Pastors for Social Action. The pastors distributed 1,500 water filters on a first-come, first served basis to Flint residents.

Health officials locally and on the state level have said there are no safe levels of lead. From children's development to health issues in adults – especially pregnant women – multiple sources say lead in the blood stream can be hazardous.

Michigan providing water filters in Flint after high lead readings

Published October 07, 2015

http://www.foxnews.com/health/2015/10/07/michigan-providing-water-filters-in-flint-after-high-lead-readings/

Reuters

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DETROIT – Michigan on Tuesday began distributing free water filters to residents of Flint, a week after confirming that some children had elevated levels of lead in their blood since the city began taking water from a nearby river.

The state last week confirmed a recent study at Hurley Children's Hospital that found increased lead levels in blood tests for children living in two Flint ZIP codes.

The city of about 100,000 residents started using the Flint River as its water source in 2014 after a state-appointed emergency manager ruled out a deal to keep buying water from Detroit, 66 miles (106 km) to the southeast.

The filters are being distributed to public assistance recipients and Flint residents through a partnership between the Michigan Department of Health and Human Services and the Genesee County Community Action Resource Department.

About 5,500 filters had already been given out through private donations.

Michigan Governor Rick Snyder on Friday announced a plan to address the city's drinking water. The state insists the water is safe to drink, but some families could experience higher lead levels if their homes have lead plumbing or service connections.

More on this...

14 mistakes you're making with your teeth

How much water do you actually need?

The plan calls for increased water testing, additional precautions for families with lead plumbing and long-term solutions to address the city's water infrastructure challenges. It does not include restoring Detroit as the water source.

Uber Collecting Bottled Water For Flint Schools

October 6, 2015 10:55 PM

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CBS Detroit (con't)

Affordable Care Act Updates: **CBSDetroit.com/ACA**

Health News & Information: **CBSDetroit.com/Health**

FLINT, Mich. (AP) – The ride-sharing service Uber is willing to give bottled water a lift to Flint.

Uber says it will pick up water donations for free from people in the Detroit area, through Thursday. The water will eventually be delivered to Flint schools.

Uber is advising people to open the Uber app, look for the “WaterforFlint” option and request a car.

Flint schools are discouraging kids from using drinking fountains because of lead leaching from old pipes in the city. Thousands of filters are also being distributed to residents.

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http://detroit.cbslocal.com/2015/10/06/uber-collecting-bottled-water-for-flint-schools/

How lead in drinking water can be harmful to children, others

http://www.mlive.com/news/flint/index.ssf/2015/10/how_lead_in_drinking_water_can.html

Genesee County Health Department and United Way of Genesee County staff help distribute water filters to Flint residents on Saturday, Oct. 3, 2015, at the University of Michigan-Flint's Recreation Center in Flint, Mich. The United Way of Genesse County received donations to purchase over 4000 filters for Flint residents in efforts combat lead levels in Flint's drinking water. Danny Miller | MLive.com

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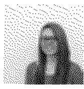
By Sarah Schuch | sschuch@mlive.com
on October 06, 2015 at 6:00 PM, updated October 06, 2015 at 9:18 PM

Flint water

- Flint police block some media, public from water advisory meeting
- Here's how that toxic lead gets into Flint water
- Debunking that social media rumor on Flint water filters
- Water, water everywhere and not a drop that's safe to drink -- Andrew Heller
- How to get your free Flint water filter

All Stories

FLINT, MI – Health officials at the local and state levels have said it several times: There are no safe levels of lead.

Health advisories warning of some of the harmful effects of lead were issued by the city and county after elevated levels of lead were discovered in the drinking water of some Flint customers.

Meanwhile, the Flint School District began asking students to avoid school drinking fountains and bring bottled water to school.

The state issued an "action plan" for Flint water that includes filters and free water tests, among other items, and various community organizations have also begun donating filters and bottled water.

From children's development to health issues in adults – especially pregnant women – multiple sources say lead in the blood stream can be hazardous. Dr. Mona Hanna-Attisha, director of Hurley Medical Center's pediatric residency program, along with the Center for Disease Control and Prevention, say no amount of lead in the blood stream is safe.

"The bottom line is there are no safe levels of lead," Hanna-Attisha said in a previous interview.

Lead exposure can affect nearly every system in the body, according to the CDC website.

Here's the breakdown:

- Lead is a toxic metal that can enter drinking water from corroded pipes and plumbing materials. Flint's new water source is more corrosive to lead pipes, which is how lead may be entering the water system.
- Lead is most harmful to pregnant women, women who are nursing and children under age 6. Your child's mental and physical development can be irreversibly stunted by lead poisoning.
- Lead can damage the brain and kidneys, and can interfere with the production of red blood cells that carry oxygen to all parts of your body.
- More information: www.flintwaterinfo.com

How is too much lead harmful? Here are few ways:

- In pregnant woman, it can cause miscarriage or premature birth.
- A Hurley study looking at affects in children says there is vast evidence that supports the increased likelihood of decrease in IQ.
- A small change in mean IQ shifts the entire population IQ distribution, the study states.
- Reduces high achievers IQs (>130) and increases kids with low IQs (<70)
- The study also stated there is increased likelihood of ADHD behaviors, delinquent behaviors and arrests, total arrests and increased rates of arrests involving violent offenses
- Other health effects for lead poisoning in children include hematologic, cardiovascular, immunologic and endocrine, the Hurley study stated.

The Mayo Clinic lists symptoms of lead poisoning for children and adults.

Initially, lead poisoning can be hard to detect — even people who seem healthy can have high blood levels of lead. Signs and symptoms usually don't appear until dangerous amounts have accumulated, according to the Mayo Clinic website.

The signs and symptoms of lead poisoning in children may include:

- Developmental delay
- Learning difficulties
- Irritability
- Loss of appetite
- Weight loss
- Sluggishness and fatigue
- Abdominal pain
- Vomiting
- Constipation
- Hearing loss

Babies who are exposed to lead before birth may experience:

- Learning difficulties
- Slowed growth

Although children are primarily at risk, lead poisoning is also dangerous for adults.

Signs and symptoms in adults may include:

- High blood pressure
- Abdominal pain
- Constipation
- Joint pains
- Muscle pain
- Declines in mental functioning
- Pain, numbness or tingling of the extremities
- Headache
- Memory loss
- Mood disorders
- Reduced sperm count, abnormal sperm
- Miscarriage or premature birth in pregnant women

To: Henry, Timothy[henry.timothy@epa.gov]; Davis, CatherineM[Davis.CatherineM@epa.gov]
From: Fortin, Denise
Sent: Wed 10/7/2015 9:33:21 PM
Subject: FW: Flint Clips 10/7 COB

FYI

Denise Fortin

Congressional Liaison

Office of Regional Administrator

U.S. Environmental Protection Agency

312-886-9859

From: Cassell, Peter
Sent: Wednesday, October 07, 2015 4:18 PM
To: Hedman, Susan; Hyde, Tinka; Kelley, Jeff
Cc: Peterson, John; Arcaute, Francisco; Singer, Joshua; Bassler, Rachel; Rowan, Anne; Poy, Thomas; Fiscus, Taylor; Kaplan, Robert; Fortin, Denise; Deamer, Eileen; Beckmann, Ronna Erin
Subject: RE: Flint Clips 10/7 COB

- □□□□□□□□ Flint had no plan to minimize lead corrosion in people's drinking water post river switch
- □□□□□□□□ Michigan Governor Rick Snyder dedicating $1 million to purchase lead filters for Flint residents
- □□□□□□□□ Public Health Emergency Declared in Flint, Michigan Due to Lead Contamination in Water
- □□□□□□□□ Michigan
- □□□□□□□□ CBS Evening News puts Flint water crisis on national stage
- □□□□□□□□ Poisoning People, the Future and the Public Interest in Flint, Michigan
- □□□□□□□□ Watch live: Experts meet amid Flint drinking water crisis

- □□□□□□□□ Erin Brockovich highlights the Flint water fight
- □□□□□□□□ Guyette: Federal Oversight Needed to Assure Water Safety in Flint
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- □□□□□□□□ How to get your free Flint water filter
- □□□□□□□□ Michigan providing water filters in Flint after high lead readings
- □□□□□□□□ Uber Collecting Bottled Water For Flint Schools
- □□□□□□□□ How lead in drinking water can be harmful to children, others
- □□□□□□□□ Flint water

Flint had no plan to minimize lead corrosion in people's drinking water post river switch

By Rebecca Williams & Lindsey Smith • Oct 6, 2015

ShareTwitter Facebook Google+ Email

http://michiganradio.org/post/flint-had-no-plan-minimize-lead-corrosion-peoples-drinking-water-post-river-switch#stream/0

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Listening...

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4:00

Listen to today's Environment Report.

Confused about corrosion control? We were too.

In Flint, lead levels in some children's blood have spiked dramatically. Scientists believe the Flint River is part of the problem. Flint switched from Detroit's water system and started pulling water from the Flint River last year.

We've been hearing some conflicting things from state officials about what exactly Flint has been doing — if anything — to cut down on lead in the water.

The confusion

<img src="/sites/michigan/files/styles/default/public/201510/1394876976_4d5541c0d5_b.jpg" alt="Beach-Garland Street - Flint River Bridge.">

Beach-Garland Street - Flint River Bridge.

Credit Sarah Razak / Flickr - http://michrad.io/1LXrdJM

State regulators told federal regulators earlier this year by email that Flint is not using corrosion control.

Corrosion control is important because it helps prevent lead from leaching out of old pipes into people's tap water.

But on Friday, Michigan Department of Environmental Quality Director Dan Wyant said this:

"Know that when the city switched from Detroit sewer and water, that the city utilized corrosion controls," he said.

That directly conflicts with what the state said before.

After Friday's press conference, we asked DEQ spokesman Brad Wurfel to clarify. He then said the corrosion control Flint used was lime.

"Flint was trying to address the hardness of the water, so they chose lime to address the hardness," he said. "That is also a corrosion control agent. It's a recognized corrosion control agent. It just wasn't, it wasn't cutting it."

We ran this by some outside experts.

Daniel Giammar is an expert on lead in water. He's a professor of environmental engineering at Washington University in St. Louis, Missouri.

"Simply claiming to have lime addition as corrosion control is insufficient," he says.

Giammar told us that you can use lime for corrosion control, but you have to have a plan. You want to make sure your water hits a certain pH range and alkalinity so that you minimize the amount of lead in the water.

"Whether or not you have corrosion control isn't whether or not you're adding lime, but it's rather, are you achieving the target pH that you set out?" he says.

The softening process could be making the situation worse.

Marc Edwards is a civil engineering professor from Virginia Tech University and a nationally renowned expert on water treatment. He was also confused by Wyant's claim that Flint had corrosion controls in place. So, over this past weekend, he took a closer look at Flint's data.

He says the water softening treatment Flint is using is actually making Flint's water more corrosive.

“Even as they’re denying the water is corrosive and it’s causing this higher lead, the pH value is plummeting, it’s becoming more acidic,” Edwards says. “And it led me to wonder, I mean, are they even watching what’s happening to the pH of their water? It’s like flying a jumbo jet without checking your gas tank.”

We requested an interview with someone from Flint's water department, but they did not provide anyone to talk to us for this story by our deadline.

The DEQ's response

The DEQ says they have been keeping an eye on the pH of Flint’s water.

Liane Shekter Smith heads up DEQ’s Office of Drinking Water and Municipal Assistance.

"Absolutely, we've been monitoring the pH data. We monitored it prior to the switch to the Flint River and we monitored it since. And we've compared the pH data and there has not been a significant change."

Shekter Smith says they consider a pH of 7.5 to be acceptable. But both Marc Edwards and Daniel Giammar told us cities should shoot for a pH of 8 or above to minimize the amount of lead getting into drinking water. That's because you want the water to be less acidic to minimize corrosion.

Data available online from the City of Flint show that the pH of treated water leaving the plant has been trending downward - becoming more acidic. Monthly average pH measurements dropped from 8.07 in December 2014 to 7.34 in August 2015.

A key point here: there’s a difference between having some kind of treatment process that might work and having an approved corrosion control plan.

Yesterday, Shekter Smith confirmed that Flint does not have a corrosion control plan.

“At the time they proposed switching to the Flint River and implementing the lime softening treatment method, there was an indication that the pH control provided by that method perhaps would provide optimal corrosion control,” Shekter Smith says.

It’s clear that method didn’t work.

Tomorrow, city, state, and federal officials will get together to come up with some kind of plan to control the corrosion.

**This post has been updated.*

Related Program:

The Environment Report

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corrosion control

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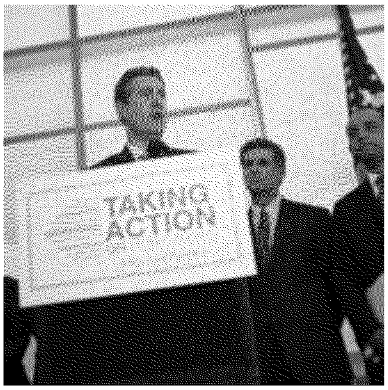
Michigan Governor Rick Snyder dedicating $1 million to purchase lead filters for Flint residents

Submitted by Diane Hoffman on Wed, 10/07/2015 - 16:58

http://nycity.today/content/286001-michigan-governor-rick-snyder-dedicating-1-million-purchase-lead-filters-flint



It is now that Michigan Gov. Rick Snyder has agreed that there are profound problems with Flint's water. For over a year, Flint residents have been saying that their water is not ok. They have complained about its bad smell, bad taste and also told that people have become sick after having it, but the state told them that the water was safe.

Flint's water had enormous amount of lead coming from aging pipes. It has been entering into the water. The problem has aggravated due to the failure of adding appropriate chemicals by local treatment plant.

For past so many years, the City of Flint has got its water from the Detroit Water and Sewerage Department. In 2013, the city chose to join the Karegnondi Water Authority. In 2014, it chose to pump water from the Flint River.

It is now that the governor's team has acknowledged that its data is not complete and there is a need to take action. Snyder is promising $1 million to purchase lead filters for Flint residents. He has ordered further testing and working on to improve corrosion control at the Flint water treatment plant. As per experts, Flint River was never a permanent solution to the city's water requirements.

It was just a short-term fix for the city that is making efforts to save money. Switching to river led Flint to save $7 million a year rather than $5 million.

Topics:

Health

News

Public Health Emergency Declared in Flint, Michigan Due to Lead Contamination in Water

http://ecowatch.com/2015/10/07/flint-michigan-lead-contamination/

Lorraine Chow | October 7, 2015 11:27 am | Comments

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After a public health emergency was declared Tuesday due to the ongoing water crisis in Flint, Michigan, the state is now distributing free water filters and bottled water to the city's residents, according to *Reuters*.

#FlintWater quality reaches crisis level http://t.co/mIDIasyiuk pic.twitter.com/MSBLYEIfL5

— Progress Michigan (@ProgressMich) September 25, 2015

Recent tests from a local children's hospital showed that children had elevated levels of lead in their blood a year after the city began using water from a local river instead of buying Lake Huron water through Detroit in order cut costs.

The tests "found the number of Flint kids under the age of 5 years old with above average lead levels nearly doubled city-wide and in some cases, tripled," reported FOX 2's Randy Wimbley.

"Our children are a top priority given the effects lead can have on their development," Mayor Walling said in a statement. "Any bottled water donations we receive will be used for our children and other high risk groups, such as our seniors."

It appears that the toxic metal had been entering drinking water through corroded pipes and plumbing materials, according to Flintwaterinfo.com.

Or, as Henry Henderson, the director of Natural Resources Defense Council's (NRDC) Midwest office, explained in a blog post, "the water from the Flint River, as treated, is far more corrosive than the Lake Huron water that had previously coursed through the City's pipes and water infrastructure."

"As a result of the change to corrosive river water," Henderson continued, "the aging lead pipes released higher concentrations of lead into Flint's homes. Despite the urgently stated concerns raised by residents and presented to state and local officials, the people of Flint were told their water was safe."

Based on state official's action plan for #flintwater, we can't let this crisis continue. http://t.co/th35Vp6g4Q pic.twitter.com/MHtH1HyzbX

— Senator Jim Ananich (@jimananich) October 2, 2015

Lead, which is most harmful to pregnant women, women who are nursing and children under age 6, can damage the brain and kidneys, and can interfere with the production of red blood cells. Lead poisoning can also irreversibly stunt a child's mental and physical development.

The U.S. Environmental Protection Agency says that 15 parts per billion (ppb) is the maximum recommended level of lead in household water. However, an alarming Flint Water Study found that about 10 percent of their local water samples had values of lead at levels of 25 ppb.

Local parent Lee-Anne Walters told *The Guardian* she was "shocked, angry … and hysterical" after learning in March that her son's immune system was compromised after unsafe lead exposure.

"I just couldn't believe that we were paying to poison our kids," she said.

To make matters worse, as *The Guardian* pointed out, Flint residents "pay some of the highest water rates in the U.S., in the community known for its economic decline."

Officials had been insisting the water in Flint was safe and within federal guidelines. But they finally shifted positions this week after a public health emergency was declared by Genesee County Sheriff Robert Pickell.

Reuters reported that on Friday Michigan Gov. Snyder announced a plan that calls for "increased water testing, additional precautions for families with lead plumbing and long-term solutions to address the city's water infrastructure challenges."

The plan does not include restoring Detroit as a water source.

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comments

CBS Evening News puts Flint water crisis on national stage

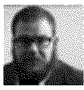
1 / 7

Arthur Woodson yells in a megaphone marching with other Flint residents protesting the water quality in the city on Monday, Oct. 5, 2015, outside Flint City Hall in Flint, Mich. Tests have shown elevated lead levels in the drinking water after Flint began drawing and treating water from the Flint River. Danny Miller | MLive.com

Danny Miller | dmille17@mlive.com

Print Email

http://www.mlive.com/news/flint/index.ssf/2015/10/flint_water_crisis_gets_nation.html


By Gary Ridley | gridley@mlive.com
Follow on Twitter
on October 07, 2015 at 9:56 AM, updated October 07, 2015 at 12:29 PM

FLINT, MI -- Flint's water crisis is garnering national attention after the issue was featured in a segment on the CBS Evening News.

"It's not safe to drink the water in Flint, Michigan," anchor Scott Pelley said Tuesday, Oct. 6, as he introduced the roughly two-minute long report.

RELATED: How the Flint water crisis emerged

The segment included interviews with residents affected by poor water conditions in the city and with Mayor Dayne Walling.

"I am angry that Flint's been put in this situation," Walling told reporter Dean Reynolds.

The report highlighted Flint's switch from treated Detroit water to treating its own water from the Flint River.

Controversy surrounding the change began not long after the switch when residents started to complain of foul-smelling, dirty water. The situation escalated when the city was found in violation of the Safe Drinking Water Act when high levels of trihalomethanes -- or TTHM -- a group of four chemicals that are formed as a byproduct of disinfecting water. Over many years, the chemicals could cause liver, kidney or central nervous system problems and an increased risk of cancer.

The controversy grew once a researcher from Virginia Tech discovered elevated levels of lead in the city's water. Researchers pointed to the corrosive nature of treated Flint River water as the cause, saying the water caused lead to leach from pipes and solder into the water supply. Lead concerns were expounded when a Hurley Medical Center researcher discovered elevated lead levels in Flint children since the water switch.

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Poisoning People, the Future and the Public Interest in Flint, Michigan

Posted: 10/06/2015 6:38 pm EDT Updated: 10/06/2015 6:59 pm EDT

http://www.huffingtonpost.com/henry-henderson/poisoning-people-the-futu_b_8254390.html

SWITCHBOARD .nrdc.org Lead is a devastating toxin. It ravages the brain. Robs children of IQ points and brain function. And deprives our society of vast potential. It has cast a huge, destructive shadow across human civilization.

That's why Americans eliminated it from paint. From gasoline. And have struggled mightily to ban it from toys. The continuing negative impact of lead remains in soil, homes and infrastructure exposed to lead in the past, before we were able to ban it from products.

And in Flint, Michigan, its concentration in the drinking water is shockingly high.

Pipes and taps in Flint have brought water replete with toxic lead into homes for some time since the cash-strapped city shifted water sources from Detroit's treated supply drawn from Lake Huron, and began to pull water out of the Flint River.

All water isn't the same everywhere. The water from the Flint River, as treated, is far more corrosive than the Lake Huron water that had previously coursed through the City's pipes and water infrastructure. As a result of the change to corrosive river water, the aging lead pipes released higher concentrations of lead into Flint's homes. Despite the urgently stated concerns raised by residents and presented to state and local officials, the people of Flint were told their water was safe. This amazing situation has gone on repeatedly over the past year and a half. During which more and more lead-contaminated water has gone into homes, drinking glasses, baby formula, and cooking water.

Put simply and starkly: the water being delivered to the people of Flint is not safe.

Independent tests have demonstrated the city's water to be unfit for consumption. This is particularly the case with children, whose brains and bodies are developing, making them especially vulnerable to the poisonous impact of lead.

And yet, Flint's water pipes, treatment works and supply have not been fixed or effectively addressed. Instead of immediately switching the source back to Lake Huron water through Detroit, the city and state are taking baby steps--seemingly to buy time for a new water supply pipeline that will be completed next summer.

We don't think this is right. You probably don't either.

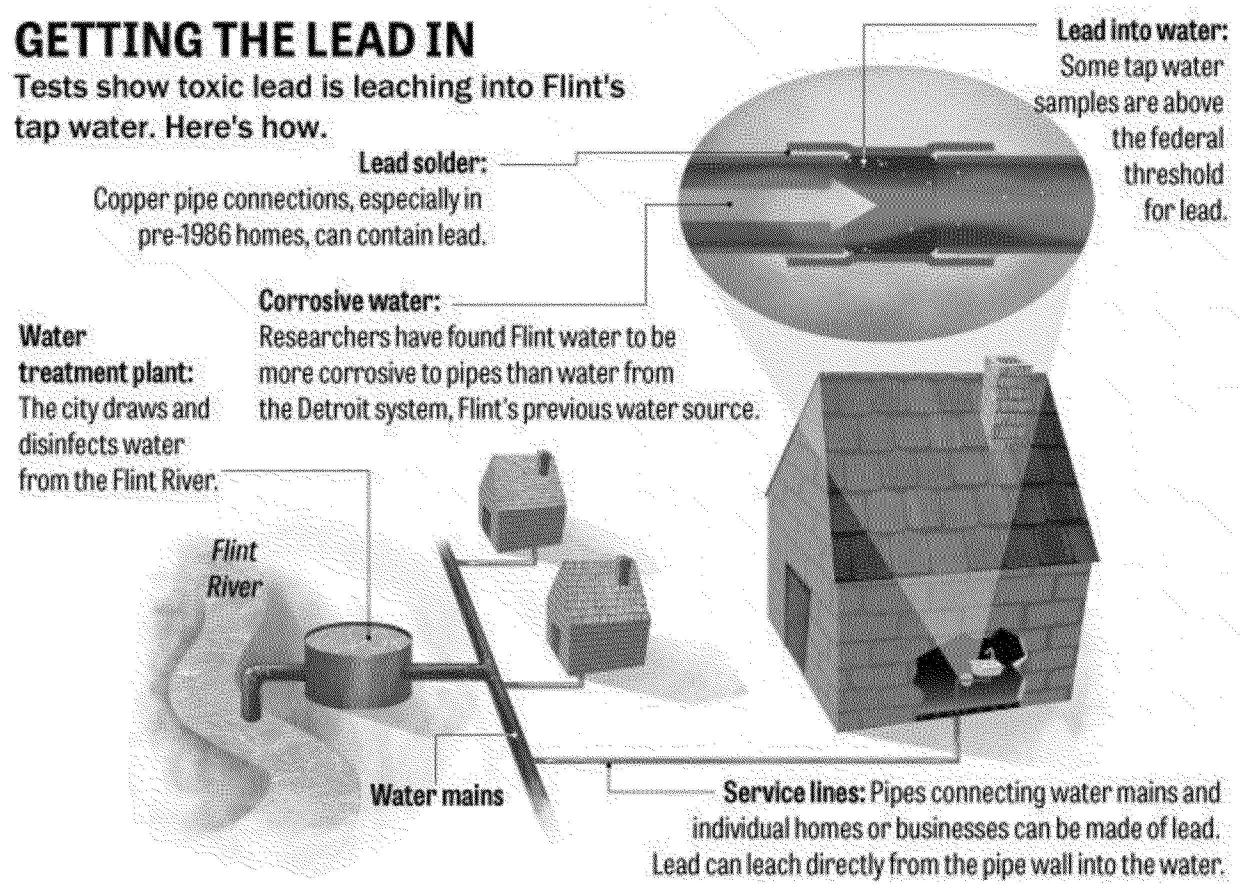
Because the situation is wrong and unacceptable, NRDC joined with local groups and the Michigan ACLU to demand emergency federal action under the Safe Drinking Water Act. If the City and State are not going to get the poison out of Flint's water, the federal government has authority to do so under emergency powers. Our group filed a petition with the U.S. Environmental Protection Agency last week to demand quick action.

We don't think anyone should be forced to drink dangerous water. Particularly, citizens of our great democracy should not have contaminated water delivered to their homes through the public water utility. Flint, Michigan is an American city; it was a manufacturing marvel that helped define the American Century with the production of cars and a strong, vibrant middle class; and, it happens to be a city in the center of the largest resource of fresh water in North America, the Great Lakes. Our fellow citizens deserve much, much better. There is strong moral responsibility to act and act quickly. The people of Flint should not drink lead-laced water for another day, let alone another year.

Flint, MI image by Axel Drainville via Flickr

Watch live: Experts meet amid Flint drinking water crisis

http://www.mlive.com/news/flint/index.ssf/2015/10/watch_live_advisory_committee.html


GETTING THE LEAD IN
Tests show toxic lead is leaching into Flint's tap water. Here's how.
Lead solder: Copper pipe connections, especially in pre-1986 homes, can contain lead.
Lead into water: Some tap water samples are above the federal threshold for lead.
Corrosive water: Researchers have found Flint water to be more corrosive to pipes than water from the Detroit system, Flint's previous water source.
Water treatment plant: The city draws and disinfects water from the Flint River.
Flint River
Water mains
Service lines: Pipes connecting water mains and individual homes or businesses can be made of lead. Lead can leach directly from the pipe wall into the water.

(MLive.com)

Print Email

By Ron Fonger | rfonger1@mlive.com
on October 07, 2015 at 3:04 PM, updated October 07, 2015 at 3:10 PM

Reddit

FLINT, MI -- A blue ribbon panel of water experts that has been dormant for months is meeting this afternoon to discuss Flint's drinking water problems.

The committee is meeting on the third floor of Flint City Hall.

Mayor Dayne Walling said the committee will "discuss short, intermediate and long-term (plans) including filters, corrosion control, the (Detroit Water and Sewerage Department) option, lead service lines and the" Karegnondi Water Authority pipeline that officials expect to serve Flint at some point next year.

On a possible reconnection to Detroit, Walling said: "That option continues to be actively under discussion."

A livestream of the meeting is being made available by Sen. Jim Ananich, D-Flint, and Senate Democrats and can be viewed below.

Erin Brockovich highlights the Flint water fight

Posted By Lee DeVito on Wed, Oct 7, 2015 at 12:07 PM

http://www.metrotimes.com/Blogs/archives/2015/10/07/erin-brockovich-highlights-the-flint-water-fight

- □□□□□□□□ Photo credit: Eva Rinaldi from Sydney Australia,via Wikimedia Commons

- □□□□□□□□ Erin Brockovich

Environmental activist Erin Brockovich took to Facebook on Tuesday to slam Michigan authorities regarding Flint's drinking water controversy — and offered a shoutout to *Metro Times* and contributor Curt Guyette for covering the issue.

Brockovich posted a photo of Brad Wurfel, the Communications Director at Michigan Department of Environmental Quality, captioning the image with a lengthy tirade calling Wurfel a "spin doctor" and "paid distorter of truth" for his role in downplaying a July EPA memo and ongoing investigation that revealed the presence of lead in Flint's drinking water supply.

Brockovich then cited *Metro Times* contributor Curt Guyette's recent reporting on the issue, highlighting three times Wurfel had attempted to discredit or deny the ongoing investigations.

On Thursday, the Genesee County Health Department finally admitted there was a problem with Flint's water, declaring a public health emergency and urging citizens not to drink water that has not been tested or filtered.

As Guyette reported, further study of Flint's water quality was launched by a group of citizens working in conjunction with researchers at Virginia Tech and the ACLU of Michigan, who continued to study the issue despite Wurfel's denial. "If [they] had been willing to swallow that claim, children in Flint would still be getting lead poisoned," he wrote.

Read Guyette's story here or read it in this week's print edition of *Metro Times*. Read Brockovich's full post below:

Tags: Erin Brockovich, Flint, Brad Wurfel, lead, water, drinking water, Curt

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Guyette: Federal Oversight Needed to Assure Water Safety in Flint

October 6th, 2015, 10:48 PM

http://www.deadlinedetroit.com/articles/13364/guyette_federal_oversight_needed_to_assure_water_safety_in_fl

THE WEAK HANDS OF THE POOR CAN GIVE NO MORE!!!
They Got $ So Rich We C

Residents of Flint protest outside City Hall in April (ACLU photo)

Curt Guyette, who has been reporting away for months on the Flint water problem, writes in Metro Times that federal oversight is needed to safeguard Flint's drinking water.

Guyette, an investigative reporter for the ACLU of Michigan, writes:

In the past few weeks, the problem of lead in Flint's drinking water has quickly gone from being a story largely ignored by the mainstream media to a scandal that's making headlines nationally.

Faced with overwhelming evidence, state and local officials who adamantly insisted for months that there was no problem have been forced to admit that their unequivocal assurances were completely false.

For that reason, the U.S. EPA needs to quickly respond to last week's formal petition calling upon the agency to step in and take a greater role in assuring that Flint's water is safe. Also needed is an investigation by an outside entity with subpoena powers to determine if laws were broken and, if so, who broke them.

One thing is certain: The MDEQ (Michigan Department of Environmental Quality) has failed miserably in its obligation to ensure that the public health is being protected. Just the opposite: The agency's consistent denials that a danger existed only served to create a false sense of security, keeping people from taking the actions needed to help limit their exposure to a potent neurotoxin that can cause irreversible damage — especially to children.

Lead levels in Mich. city have moms avoiding tap water

USA Today Network Nancy Kaffer, Detroit Free Press 9:02 p.m. EDT October 6, 2015

http://www.usatoday.com/story/news/nation-now/2015/10/06/lead-water-flint-michigan/73486840/

Dan Wyant, director for the Michigan Department of Environmental Quality and Nick Lyon, director for the Michigan Department of Health and Human Services, discuss action plan for Flint drinking water. Ryan Garza Detroit Free Press

(Photo: Ryan Garza, Detroit Free Press)

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FLINT, Mich. — Outside a taco shop on Fifth Street, Estella Walker balances a gallon jug of water on top of the stroller that holds her 3-month-old son, DeWayne.

She's mixing bottles of formula for DeWayne and his 19-month-old sister Vanessa.

Nadene Strickland sits outside her home on the city's north side, watching her grandsons play basketball. She still drinks the water. She can't afford bottled.

Shopping at the local farmers market with five of her seven children, Tena Fransioli says she hasn't used tap water in a long time.

Across town, LeeAnne Walters' kids are having bath night. She heats bottled water in the microwave and carries it to the bathroom, slowly filling the tub.

USA TODAY

Yards pose health risk to kids, moms near factory site

In Melissa Mays' bathroom, a reminder is taped to the wall: To brush your teeth, use the bottled water on the bathroom counter.

This is life in Michigan's seventh largest city, where you really should not drink the water.

“I was hysterical. I cried when they gave me my first lead report.”

LeeAnne Walters, Flint, Mich.

For more than a year, Flint residents have been screaming that their water wasn't OK, that it smelled bad, tasted bad, looked bad and was making them sick.

Few listened. The state told them, again and again, that the water was safe — that contamination had been handled and that the water was within acceptable levels.

Not until the end of September did Michigan Gov. Rick Snyder finally acknowledge the profound problems with Flint's water. Lead, from aging pipes, is leaching into the water the city pumps from the Flint River, exacerbated by a local treatment plant's failure to add appropriate chemicals.

For decades, the City of Flint bought its water from the Detroit Water and Sewerage Department, water that arrived treated to make it safe for human consumption. In 2013, the city opted to join the Karegnondi Water Authority along with Genesee, Lapeer and Sanilac counties, and in 2014 to pump water from the Flint River while the new system is under construction.

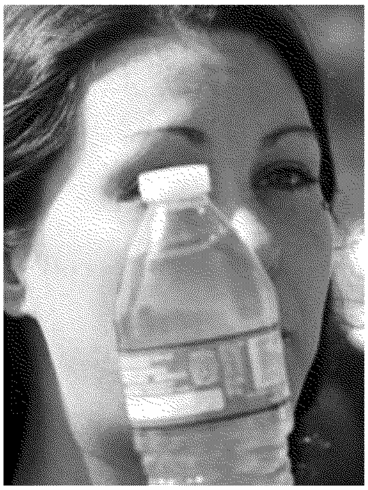
Joining the Karegnondi Water Authority didn't mandate the end of Flint's relationship with Detroit's water system. Genesee County, for example, has continued to purchase its water from Detroit, albeit at a premium, county drain commissioner Jeff Wright said.

USA TODAY

N.C. residents worry over coal ash ponds

In Flint, both decisions were made during the appointments of four different emergency managers, turnaround guys the governor brought in to fix Flint's budget woes, and with the approval of the Michigan Department of Environmental Quality, which monitors water quality and treatment.

For most of the past year, the state has told residents that the water here was fine, that it met the standards of the Safe Drinking Water Act. The state, for the most part, still says that's true.



Jessica Owens of Flint, Mich., holds a bottle of drinking water Oct. 2, 2015, that came from her home two weeks previous that she said had been proven to contain lead. (Photo: Ryan Garza, Detroit Free Press)

But now the governor's team acknowledges that its data are incomplete and that high lead levels found in the water for this city of 99,000 — and an increasing number of Flint kids with elevated blood-lead levels — merit action. Snyder is dedicating $1 million to purchase lead filters for Flint residents, has ordered further testing and is improving corrosion control at the Flint water treatment plant, which should help keep lead out of the water.

Flint River never was meant to be a long-term answer to the city's water needs. It was a short-term fix for a city scrambling to save money.

When Flint joined the Karegnondi Water Authority, the Detroit Water and Sewerage Department terminated its 35-year contract with the city. To continue to purchase Detroit water, Flint would have had to renegotiate a short-term contract at a higher cost.

Switching to river water saved Flint $5 million to $7 million a year.

The region had long wanted its own water system, Wright said. Because of its elevation and distance from Detroit, Flint paid a higher rate for Detroit water than most far-flung communities.

Only one pipeline stretches that far north, and that means Flint — and the other Karegnondi Water Authority communities — are vulnerable. In 2000, the pipeline went down, leaving 250,000 people without water for four days, he said.

It had happened before, and it has happened since. The area needed a second pipeline, but Detroit wouldn't build it without a 30-year commitment from the communities the pipeline would serve.

USA TODAY

Audit faults EPA in delays probing lead factory dangers

At the rates Detroit Water is obliged to charge, the communities were reluctant to make that commitment, Wright said.

When the Karegnondi Water Authority system is complete next year, Flint will be back on Lake Huron water, same as Detroit. But unless its treatment plant is capable of properly treating the water, its problems will not end.

“There is no safe level of lead.”

Dr. Eden Wells, Michigan Department of Health and Human Services

Because much of this area's infrastructure is composed of copper pipes with lead welds, systems like Detroit's add anticorrosive agents to prevent lead from leaching into the water. River water is more difficult to treat than lake water, and its chemistry can change daily, Wright said.

Because the Flint River is shallow compared with Lake Huron its temperature is higher. All of this affects the composition of the water and the chemicals required to make it potable and safe to pass through old pipes.

When Flint started pumping river water, its local plant either never employed corrosion control or didn't use sufficient control. Remarks that Dan Wyant, Michigan Department of Environmental Quality chief, made Friday didn't make that entirely clear and Snyder's office didn't respond to an e-mail seeking clarification.

It didn't take long for residents to notice a difference. By June 2014, according to the city, residents began to complain about the water.

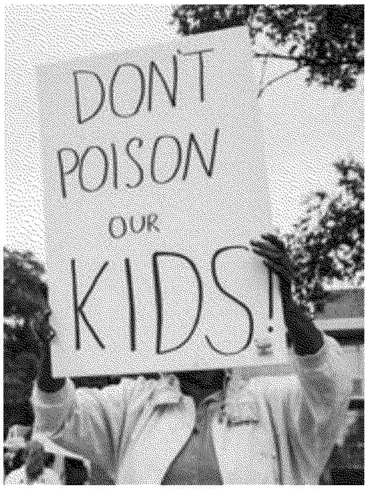
And as water quality suffered, Flint residents' bills have gone up, thanks to rate increases imposed first by Mayor Dayne Walling, and then built into the budget by Snyder's emergency managers. A Genesee Circuit Court judge issued an injunction in August rolling back a 35% rate increase imposed in 2011.

USA TODAY

Lead poisoning's impact: Kids suspended more at school

A Virginia Tech University researcher tested water from hundreds of Flint homes, releasing a report showing elevated lead levels in the city's children. State data showed the highest rates of lead in Flint's water in 20 years.

And a blood test analysis that a Michigan pediatric researcher released Sept. 24 and the state Department of Health and Human Services confirmed Friday, found the percentage of Flint kids with elevated blood-lead levels — 5 micrograms per deciliter or more — jumped from 2.1% in the 20 months prior to Sept. 15, 2013, to 4.0% between Jan. 1 and Sept. 15 this year. In certain ZIP codes, it doubled since the switch.



Flint residents protest the water quality in the city Oct. 5, 2015, outside City Hall in Flint, Mich. (Photo: Danny Miller, AP)

In children, exposure to lead can cause behavior or attention problems, hearing problems, kidney damage, reduced IQ and slowed body growth, among other effects. The damage is irreversible.

"There is no safe level of lead," said Dr. Eden Wells, the health department's chief medical executive.

For children like Gavin, one of LeeAnne Walters' 4-year-old twins, the potential for problems is more serious. Because Gavin's immune system is compromised — a condition unrelated to the water — he's more susceptible to the effects of lead.

The whole family developed rashes, likely because of a disinfectant added to the water to combat coliform bacteria.

Gavin stopped gaining weight, lagging his twin; now he's 37 pounds, compared with his twin's 52 pounds. Doctors weren't sure what was happening.

Then she asked the city to test her water. It showed astronomically high rates of lead, prompting an urgent e-mail exchange with the city, the state Department of Environmental Quality and the U.S. Environmental Protection Agency, according to documents obtained by the American Civil Liberties Union through the Freedom of Information Act.

Walters said she received an urgent call from city hall advising her to stop using her water.

USA TODAY

Lead poisoning toll revised to 1 in 38 young kids

Lead screening showed that Gavin's blood-lead levels had soared, up to 6.5 micrograms per deciliter of blood from 2, before the switch.

"I was hysterical," Walters said. "I cried when they gave me my first lead report."

Before that, she'd pushed her kids to drink water instead of juice or soda.

"I'm trying to do my job as a mom," she said. Now, "my kids will never drink tap water again."

One of the worst things about lead is that it's hard to know exactly how it will manifest.

USA TODAY

EPA fails to revise key lead-poisoning hazard standards

"What's the difference going to be between Gavin and his brother in school? Is he going to have more issues as this progresses?" Walters asked.

That's what haunts Mays, who said her family has experienced a range of health problems she links to the water. Mays and Walters have become relentless advocates for safe water, leading protests, interacting with Virginia Tech researchers and challenging city and state assurances that the water was OK.

These days, even Mays' cat drinks bottled water.

USA TODAY

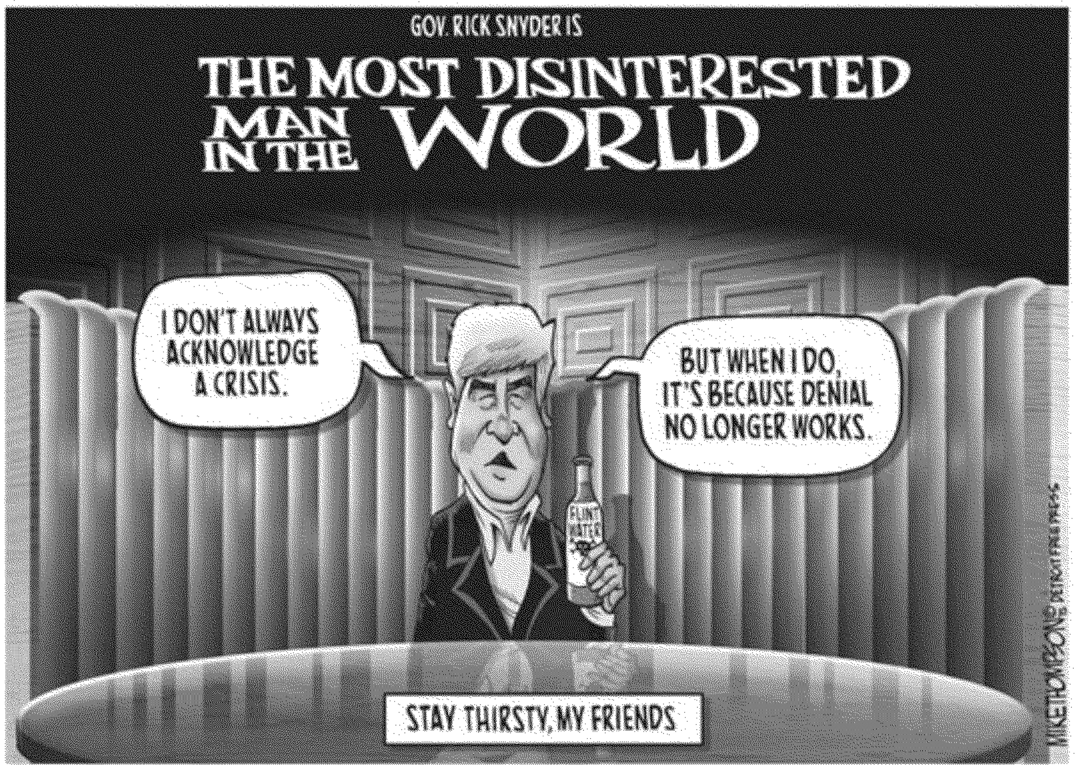
Lead poisoning: What parents can do

"I pushed them to drink water: 'Put down that juice, go get some water,' " she said of her teenage sons. "Lead is in our blood."

As Mays' children grow, she said she'll always wonder whether any problem is because of lead or would it have happened anyway.

"I'll never know," she said.

Contributing: Robin Erb and Kathleen Gray, Detroit Free Press


GOV. RICK SNYDER IS
THE MOST DISINTERESTED MAN IN THE WORLD
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BUT WHEN I DO, IT'S BECAUSE DENIAL NO LONGER WORKS.
FLINT WATER
STAY THIRSTY, MY FRIENDS
MIKETHOMPSON DETROIT FREE PRESS

The cartoonist's homepage, freep.com/mikethompson (Photo: Mike Thompson, Detroit Free Press)

Flint River Fest canceled amid city's drinking water problems

By Steve Carmody • 6 hours ago

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Flint's drinking water controversy has led to the cancelation of a festival celebrating the Flint River.

The Flint River

Credit Steve Carmody / Michigan Radio

Tests link the corrosive nature of the river water to high lead levels in Flint tap water. Complaints about the quality of Flint's drinking water have been escalating since the city switched from Detroit water to the Flint River last year.

Rebecca Fedewa is with the Flint River Watershed Coalition, one of the organizers of River Fest.

She says organizers of Flint River Fest were worried Friday's event would not be the showcase for the Flint River they intended.

"It is a great recreational resource. It's a huge asset for the city, and that's what we wanted to show people," says Fedewa. "With the drinking water situation, we felt it could just cast a cloud over what we were trying to do."

Organizers hope to reschedule Flint River Fest for the Spring.

http://michiganradio.org/post/flint-river-fest-canceled-amid-citys-drinking-water-problems#stream/0

Flint police block some media, public from water advisory meeting

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By Ron Fonger | rfonger1@mlive.com
on October 07, 2015 at 4:08 PM, updated October 07, 2015 at 4:18 PM
http://www.mlive.com/news/flint/index.ssf/2015/10/flint_police_block_press_publi.html

The scene outside a meeting of Flint's Technical Advisory Committee today, Oct. 7.Ron Fonger | The Flint Journal

FLINT, MI -- City police blocked the door outside the meeting room of a committee of water experts today, Oct. 7, leaving some news reporters and the public outside.

Flint spokesman Jason Lorenz said City Administrator Natasha Henderson ordered the arrangement because the room where the committee was meeting in City Hall was too small to accommodate non-committee members.

The Technical Advisory Committee, which has about 30 members, has been dormant for months, but was singled out by state officials last month as being a key part of improving Flint's water quality moving forward.

High levels of lead in city water and in the blood of children and infants since the city changed its water source in April 2014 have triggered a public health emergency here, including the mass distribution of water filters.

Mayor Dayne Walling told The Flint Journal-MLive earlier this week when and where the committee meeting would be today and indicated it was open to the public.

But when citizens and journalists showed up before the meeting started at 2 p.m., they were turned away from the door by police.

As the meeting started, a door to the City Council meeting room was left open. Some reporters, including a Flint Journal reporter, were allowed inside only as chairs opened up -- about 25 minutes after the meeting started.

The committee is discussing issues including the potential for the city to return to purchasing Lake Huron water from the Detroit Water and Sewerage Department.

Formed in March by Walling and former emergency manager Jerry Ambrose, the advisory committee has met just twice, but it has grown to include an expert appointed to serve by the U.S. Environmental Protection Agency's Office of Research and Development.

In announcing an "action plan" for Flint water Friday, Oct. 2, state officials touted the committee's role in ensuring "the best technology, practices and science are being followed" going forward.

Debunking that social media rumor on Flint water filters

1 / 30

Genesee County employee Shemicka Patton, center, assists Flint residents in filling out paperwork to receive water filters funded by private donors, local organizations and the state of Michigan on Wednesday, Oct. 7, 2015, at the Genesee County Community Resource Department office on Lippincott Boulevard in Flint, Mich. Danny Miller | MLive.com

Danny Miller | dmille17@mlive.com

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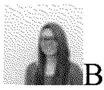By Sarah Schuch | sschuch@mlive.com
on October 07, 2015 at 1:06 PM, updated October 07, 2015 at 4:50 PM

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Flint water

Flint police block some media, public from water advisory meeting

Here's how that toxic lead gets into Flint water

Debunking that social media rumor on Flint water filters

Water, water everywhere and not a drop that's safe to drink -- Andrew Heller

How to get your free Flint water filter

All Stories

Confirming Brita faucet filter removes lead Reporter Sarah Schuch calls a Brita customer service representative and confirms that their faucet mount filters remove lead, and are NSF certified to do so.

FLINT, MI – The question has been spreading on social media and through the neighborhoods: Are the free faucet water filters being handed out in Flint certified to remove lead?

The answer is yes. Both NSF International -- the organization that certifies consumer products for various safety standards -- and Brita confirmed that all Brita faucet mount filters, whether white or chrome, are certified to reduce lead in drinking water.

A video making the rounds on Facebook shows a man calling Brita customer service and asking if the filters remove lead. According to the video, a response from a woman identifying herself as a customer service representative named Camille says the Brita faucet filter lost its NSF certification to remove lead. The woman claimed the packaging that says the filter is NSF certified is outdated, and the filter is no longer certified.

The Facebook video, posted Tuesday evening, had been viewed more than 10,000 times as of 1 p.m. Wednesday.

The information given by "Camille" over the phone in the video is false, according to NSF, a Flint Journal phone call to Brita's customer service and a follow-up phone call to a Brita representative.

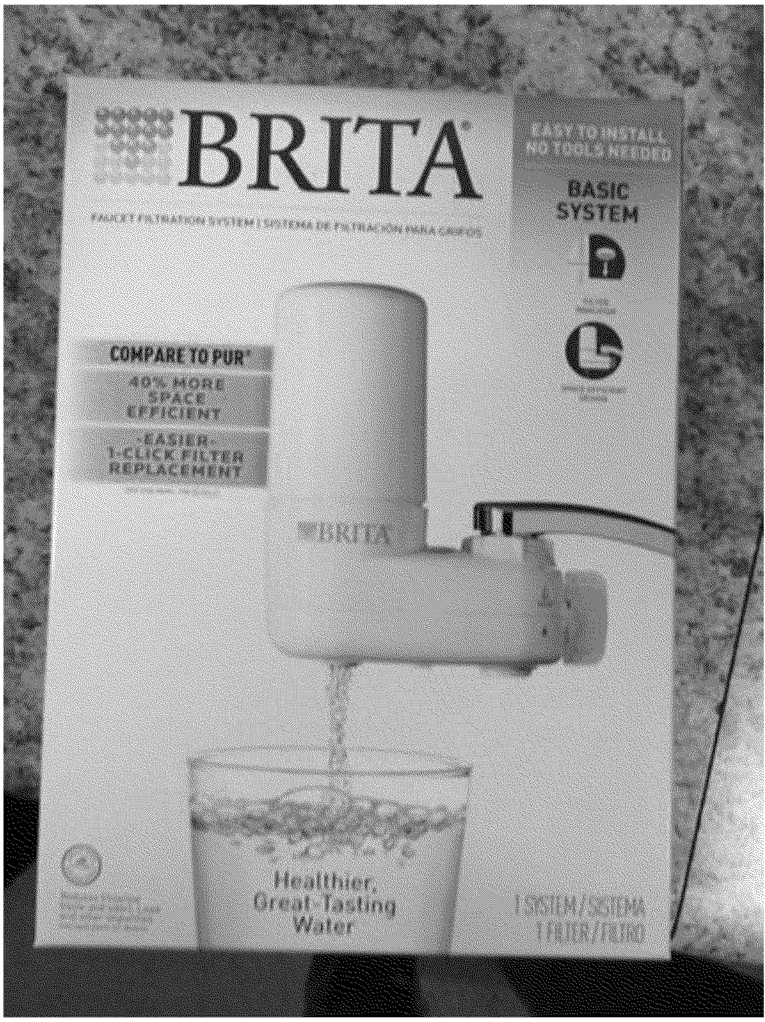
David Kargas, a spokesman for Brita, confirmed that the information heard on the video is incorrect, and there is no issue with outdated packaging. After checking into the situation, Kargas said the customer service representative pulled up the wrong Brita model number, and therefore gave incorrect information.

"We have worked with our customer service team to correct this," he said in an email.

"All Brita faucet mount filters, including the 20,000 faucet mount filters distributed this week by state and local organizations, are certified by NSF International to remove 99.3 percent of lead from tap water that has a lead concentration of 150 parts per billion – far higher than what has been reported in Flint," Kargas said.

"There is no possible issue with old or outdated packaging," he said. "Quite simply, all Brita Faucet Mount filters are certified by NSF International to reduce lead."

Related: How to get your free Flint water filter


BRITA
EASY TO INSTALL NO TOOLS NEEDED
BASIC SYSTEM
COMPARE TO PUR
40% MORE SPACE EFFICIENT
EASIER 1-CLICK FILTER REPLACEMENT
BRITA
Healthier, Great-Tasting Water
1 SYSTEM/SISTEMA
1 FILTER/FILTRO

One of the Brita faucet mount filters being given away in Flint, Michigan.MLive.com

Kargas said he was surprised to hear early Wednesday morning of the video going around social media.

"It's of paramount importance to us that we are providing the information not just in this instance but in all instances," Kargas said. "We've been working with a variety of different folks in Flint over the past few days. ... Seeing the wrong information going around is discouraging to us."

According to Brita's website, the pitcher and dispenser filters do not remove lead but the faucet filters do. The faucet filters are the ones being given out in Flint.

NSF International also confirmed that the Brita faucet filters will remove 99.3 percent of lead.

NSF International, the public health and safety organization that tests and certifies residential drinking water filtration systems, has confirmed that the three water filter systems being distributed by officials in Flint are currently certified by NSF International for lead reduction, according to a written statement.

"Specifically, Brita Faucet Filtration System, model number SAFF-100 (in white, black or chrome), the PUR Faucet Mount, model number FM-3700B, and the Zero Technologies Water Treatment Pour Through Pitcher, model number ZD-018, are certified for lead reduction in accordance with NSF/ANSI 53 – Drinking Water Treatment Unit Standard for Health Effects," the statement read.

Health advisories warning of some of the harmful effects of lead were issued by the city and county after elevated levels of lead were discovered in the drinking water of some Flint customers.

Meanwhile, the Flint School District began asking students to avoid school drinking fountains and bring bottled water to school.

The state issued an "action plan" for Flint water that includes filters and free water tests, among other items, and various community organizations have also begun donating filters and bottled water.

A call to the Brita customer service line (video above) asked about the Brita faucet filter model SAFF-100 – the brand being handed out at GCARD and other locations -- and was told it does remove lead from the water.

On the filter's box it reads NSF/ANSI Standard 53, which shows that it is certified to remove lead.

Individuals wishing to verify that a specific filter is NSF certified can do so via the NSF website. Here are the links to verify each certification: Brita Faucet Filter System SAFF-100, PUR Faucet Water Filter System and the Zero Water Technologies Water Pitcher Filtration System

Consumers can contact NSF International at info@nsf.org or 1-800-673-8010 for any additional questions.

Additionally NSF International has other resources for the consumer regarding drinking water safety:

http://www.mlive.com/news/flint/index.ssf/2015/10/debunking_that_social_media_ru.html

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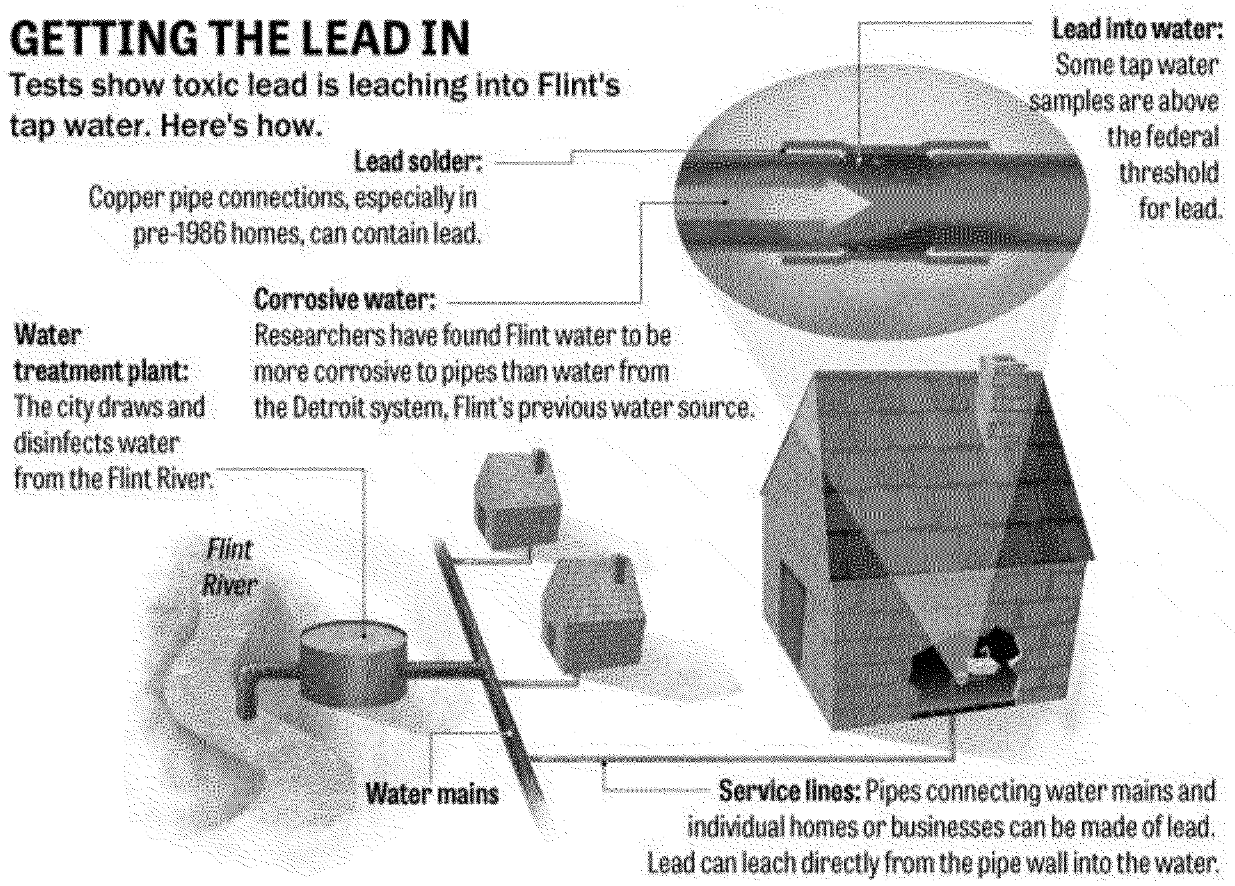
Here's how that toxic lead gets into Flint water


GETTING THE LEAD IN
Tests show toxic lead is leaching into Flint's tap water. Here's how.
Lead solder: Copper pipe connections, especially in pre-1986 homes, can contain lead.
Lead into water: Some tap water samples are above the federal threshold for lead.
Corrosive water: Researchers have found Flint water to be more corrosive to pipes than water from the Detroit system, Flint's previous water source.
Water treatment plant: The city draws and disinfects water from the Flint River.
Flint River
Water mains
Service lines: Pipes connecting water mains and individual homes or businesses can be made of lead. Lead can leach directly from the pipe wall into the water.

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By Ron Fonger | rfonger1@mlive.com
on October 07, 2015 at 2:23 PM, updated October 07, 2015 at 2:25 PM

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flint water

Flint police block some media, public from water advisory meeting

Here's how that toxic lead gets into Flint water

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Water, water everywhere and not a drop that's safe to drink -- Andrew Heller

How to get your free Flint water filter

All Stories

FLINT, MI -- Tests show water leaving Flint's treatment plant is lead free, but by the time it reaches the tap, it sometimes has elevated levels of lead, and here's why.

Since April 2014, the city has drawn raw water from the Flint River before treating it at its plant on Dort Highway.

Water is pumped into pipes that carry it to about 31,000 homes and businesses in the city, an estimated half of which have individual lead service lines.

Water from Lake Huron, which the city had purchased from Detroit since the 1960s, was far less corrosive than water that's being produced from the river today, according to researchers from Virginia Tech university.

The city's own testing has also shown lead levels have been rising since the city began using the Flint River as its water source. Virginia Tech testing has shown 10 percent of homes tested across the city had 25 parts per billion of lead or more -- far more than the allowable level -- 15 ppb -- set in federal guidelines.

As Flint River water contacts lead, particularly in areas where water is stagnant, it leaches into the water supply inside homes and businesses. Lead can leach from service lines and plumbing materials, including fixtures, faucets and fittings, according to the DEQ.

Although DEQ Director Dan Wyant said last week that Flint had a plan in place for corrosion control when the switch to the river was made, city and state officials have said previously that those plans were never fully developed as they waited on the results of two rounds of water testing inside city homes.

Last month, Flint Mayor Dayne Walling said the city was speeding up plans for making the city's water less corrosive.

The city has not yet spelled out what actions will be put in place to better control corrosion, but Richard Benzie, chief of field operations in the DEQ Office of Drinking Water and Municipal Assistance, has said plans typically involve the addition of supplements such as phosphates at the treatment plant.

Walling has also asked the state for $10 million to begin a program of removing lead service lines in the city, but the DEQ says it would likely take up to 15 years to complete the job of replacing them -- "Even if many crews were contracted."

http://www.mlive.com/news/flint/index.ssf/2015/10/see_step_by_step_how_lead_is_g.html

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How to get your free Flint water filter

1 / 7

Genesee County Health Department and United Way of Genesee County staff help distribute water filters to Flint residents on Saturday, Oct. 3, 2015, at the University of Michigan-Flint's Recreation Center in Flint, Mich. The United Way of Genesse County received donations to purchase over 4000 filters for Flint residents in efforts combat lead levels in Flint's drinking water. Danny Miller | MLive.com

Danny Miller | dmille17@mlive.com

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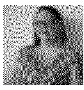By Amanda Emery | aemery@mlive.com
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Here's how that toxic lead gets into Flint water

Debunking that social media rumor on Flint water filters

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FLINT, MI -- After a number of water filter giveaways to help Flint residents combat high lead levels in their drinking water, city water customers can visit four locations Monday thru Friday 9 a.m. until 4 p.m. to get water filters.

Beginning Tuesday, Oct. 6, Flint residents enrolled in Health and Human Services assistance programs can pick up a water filter at the HHS offices at 125 E. Union Street and 4809 Clio Road.

Residents who are not enrolled in assistance programs should visit the Genesee County

Community Resource Department offices located at 2727 Lippincott Boulevard and 601 North Saginaw Street.

HHS clients who live in the city and who are enrolled in the Family Independence Program, Food Assistance Program, Child Development and Care, State Disability Assistance, or Social Security Insurance programs should bring valid identification and a copy of their water bill to their local HHS office to receive their free filter, the state's statement says.

City residents who are not active HHS clients should bring identification and their water bill to one of the GCCARD locations.

The area's non-emergency help line -- 211 -- is being used to share where Flint residents can find water filters for their homes.

The United Way of Genesee County said in a news release Tuesday, Oct. 6, that Central Michigan 211 can provide callers with details on eligibility for the filters and the location of service centers where they can be picked up.

Operators at 211 can help connect residents who cannot travel with agencies and organizations working to distribute filters to the homebound.

A filter giveaway was held at the University of Michigan-Flint at the Recreation Center on Saturday, Oct. 3. Originally, organizers were focusing on low-income families with children, pregnant women, and the elderly, but opened it up to all residents in the afternoon.

The United Way, University of Michigan-Flint, city of Flint, and other local agencies and businesses partnered to help distribute the filters.

Another filter giveaway was held on Sept. 1 by the Concerned Pastors for Social Action. The pastors distributed 1,500 water filters on a first-come, first served basis to Flint residents.

Health officials locally and on the state level have said there are no safe levels of lead. From children's development to health issues in adults – especially pregnant women – multiple sources say lead in the blood stream can be hazardous.

Michigan providing water filters in Flint after high lead readings

Published October 07, 2015

http://www.foxnews.com/health/2015/10/07/michigan-providing-water-filters-in-flint-after-high-lead-readings/

Reuters

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DETROIT – Michigan on Tuesday began distributing free water filters to residents of Flint, a week after confirming that some children had elevated levels of lead in their blood since the city began taking water from a nearby river.

The state last week confirmed a recent study at Hurley Children's Hospital that found increased lead levels in blood tests for children living in two Flint ZIP codes.

The city of about 100,000 residents started using the Flint River as its water source in 2014 after a state-appointed emergency manager ruled out a deal to keep buying water from Detroit, 66 miles (106 km) to the southeast.

The filters are being distributed to public assistance recipients and Flint residents through a partnership between the Michigan Department of Health and Human Services and the Genesee County Community Action Resource Department.

About 5,500 filters had already been given out through private donations.

Michigan Governor Rick Snyder on Friday announced a plan to address the city's drinking water. The state insists the water is safe to drink, but some families could experience higher lead levels if their homes have lead plumbing or service connections.

More on this...

14 mistakes you're making with your teeth

How much water do you actually need?

The plan calls for increased water testing, additional precautions for families with lead plumbing and long-term solutions to address the city's water infrastructure challenges. It does not include restoring Detroit as the water source.

Uber Collecting Bottled Water For Flint Schools

October 6, 2015 10:55 PM

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CBS Detroit (con't)

Affordable Care Act Updates: **CBSDetroit.com/ACA**

Health News & Information: **CBSDetroit.com/Health**

FLINT, Mich. (AP) – The ride-sharing service Uber is willing to give bottled water a lift to Flint.

Uber says it will pick up water donations for free from people in the Detroit area, through Thursday. The water will eventually be delivered to Flint schools.

Uber is advising people to open the Uber app, look for the "WaterforFlint" option and request a car.

Flint schools are discouraging kids from using drinking fountains because of lead leaching from old pipes in the city. Thousands of filters are also being distributed to residents.

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http://detroit.cbslocal.com/2015/10/06/uber-collecting-bottled-water-for-flint-schools/

How lead in drinking water can be harmful to children, others

http://www.mlive.com/news/flint/index.ssf/2015/10/how_lead_in_drinking_water_can.html

Genesee County Health Department and United Way of Genesee County staff help distribute water filters to Flint residents on Saturday, Oct. 3, 2015, at the University of Michigan-Flint's Recreation Center in Flint, Mich. The United Way of Genesse County received donations to purchase over 4000 filters for Flint residents in efforts combat lead levels in Flint's drinking water. Danny Miller | MLive.com

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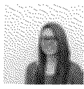
By Sarah Schuch | sschuch@mlive.com
on October 06, 2015 at 6:00 PM, updated October 06, 2015 at 9:18 PM

Flint water

- Flint police block some media, public from water advisory meeting
- Here's how that toxic lead gets into Flint water
- Debunking that social media rumor on Flint water filters
- Water, water everywhere and not a drop that's safe to drink -- Andrew Heller
- How to get your free Flint water filter

All Stories

FLINT, MI – Health officials at the local and state levels have said it several times: There are no safe levels of lead.

Health advisories warning of some of the harmful effects of lead were issued by the city and county after elevated levels of lead were discovered in the drinking water of some Flint customers.

Meanwhile, the Flint School District began asking students to avoid school drinking fountains and bring bottled water to school.

The state issued an "action plan" for Flint water that includes filters and free water tests, among other items, and various community organizations have also begun donating filters and bottled water.

From children's development to health issues in adults – especially pregnant women – multiple sources say lead in the blood stream can be hazardous. Dr. Mona Hanna-Attisha, director of Hurley Medical Center's pediatric residency program, along with the Center for Disease Control and Prevention, say no amount of lead in the blood stream is safe.

"The bottom line is there are no safe levels of lead," Hanna-Attisha said in a previous interview.

Lead exposure can affect nearly every system in the body, according to the CDC website.

Here's the breakdown:

- Lead is a toxic metal that can enter drinking water from corroded pipes and plumbing materials. Flint's new water source is more corrosive to lead pipes, which is how lead may be entering the water system.
- Lead is most harmful to pregnant women, women who are nursing and children under age 6. Your child's mental and physical development can be irreversibly stunted by lead poisoning.
- Lead can damage the brain and kidneys, and can interfere with the production of red blood cells that carry oxygen to all parts of your body.
- More information: www.flintwaterinfo.com

How is too much lead harmful? Here are few ways:

- In pregnant woman, it can cause miscarriage or premature birth.
- A Hurley study looking at affects in children says there is vast evidence that supports the increased likelihood of decrease in IQ.
- A small change in mean IQ shifts the entire population IQ distribution, the study states.
- Reduces high achievers IQs (>130) and increases kids with low IQs (<70)
- The study also stated there is increased likelihood of ADHD behaviors, delinquent behaviors and arrests, total arrests and increased rates of arrests involving violent offenses
- Other health effects for lead poisoning in children include hematologic, cardiovascular, immunologic and endocrine, the Hurley study stated.

The Mayo Clinic lists symptoms of lead poisoning for children and adults.

Initially, lead poisoning can be hard to detect — even people who seem healthy can have high blood levels of lead. Signs and symptoms usually don't appear until dangerous amounts have accumulated, according to the Mayo Clinic website.

The signs and symptoms of lead poisoning in children may include:

- Developmental delay
- Learning difficulties
- Irritability
- Loss of appetite
- Weight loss
- Sluggishness and fatigue
- Abdominal pain
- Vomiting
- Constipation
- Hearing loss

Babies who are exposed to lead before birth may experience:

- Learning difficulties
- Slowed growth

Although children are primarily at risk, lead poisoning is also dangerous for adults.

Signs and symptoms in adults may include:

- High blood pressure
- Abdominal pain
- Constipation
- Joint pains
- Muscle pain
- Declines in mental functioning
- Pain, numbness or tingling of the extremities
- Headache
- Memory loss
- Mood disorders
- Reduced sperm count, abnormal sperm
- Miscarriage or premature birth in pregnant women

To: Hedman, Susan[hedman.susan@epa.gov]; Kaplan, Robert[kaplan.robert@epa.gov]; Hyde, Tinka[hyde.tinka@epa.gov]
Cc: Rowan, Anne[rowan.anne@epa.gov]; Cassell, Peter[cassell.peter@epa.gov]; Beckmann, Ronna Erin[beckmann.ronna@epa.gov]; Harrison, Melissa[Harrison.Melissa@epa.gov]; Abrams, Dan[Abrams.Dan@epa.gov]; Poy, Thomas[poy.thomas@epa.gov]
From: Kelley, Jeff
Sent: Wed 10/7/2015 10:53:05 PM
Subject: More Flint clips for afternoon of Oct. 7

•□□□□□□□□ Put Flint back on Detroit water ASAP, expert panel tells mayor, governor (Flint Journal)

•□□□□□□□□ Flint police block some media, public from water advisory meeting (Flint Journal)

•□□□□□□□□ Experts say Flint should return to Detroit water (Michigan Radio)

•□□□□□□□□ Experts recommend Flint reconnect to Detroit water (Detroit Free Press)

•□□□□□□□□ Poisoning People, the Future and the Public Interest in Flint, Michigan (Huffington Post)

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http://www.mlive.com/news/flint/index.ssf/2015/10/some_committee_members_speak_u.html#incart_s

Put Flint back on Detroit water ASAP, expert panel tells mayor, governor

By Ron Fonger | rfonger1@mlive.com The Flint Journal on October 07, 2015 at 5:42 PM

FLINT, MI -- The city should end its use of the Flint River as a water source, a blue ribbon advisory committee recommended Wednesday, Oct. 7.

Flint's Technical Advisory Committee, appointed earlier this year to make recommendations aimed at improving the safety and quality of Flint water, did not vote.

But there was no doubt about the sentiments of the group, which includes experts in water science, health and engineering.

"We need to switch to a different water source, and right now. The quickest way to do that is (the Detroit Water and Sewerage Department)," said Dr. Lawrence Reynolds, president and chief executive officer of Mott Children's Health Center. "We can't stay in the spot we are in right now."

Flint Department of Public Works Director Howard Croft, who ran Wednesday's meeting, said he was comfortable reporting -- without a vote -- that the "Technical Advisory Committee is recommending going to the DWSD."

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State officials said they would monitor the recommendations from the Technical Advisory Committee, which includes representatives of the state Department of Environmental Quality and Dr. Eden Wells, chief medical executive for the Michigan Department of Health & Human Services.

"We continue to work with Flint city and community leaders about potential next steps," said Dave Murray, spokesman for Gov. Rick Snyder's office, in response to the committee's recommendation Wednesday.

Virginia Tech university professor Marc Edwards said Wednesday that a change to Detroit water should result in a "dramatic reduction" of lead within a month.

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http://www.mlive.com/news/flint/index.ssf/2015/10/flint_police_block_press_publi.html#incart_story_pa

Flint police block some media, public from water advisory meeting

By Ron Fonger | rfonger1@mlive.com The Flint Journal on October 07, 2015 at 4:08 PM, updated October 07, 2015 at 4:18 PM

FLINT, MI -- City police blocked the door outside the meeting room of a committee of water experts today, Oct. 7, leaving some news reporters and the public outside.

Flint spokesman Jason Lorenz said City Administrator Natasha Henderson ordered the arrangement because the room where the committee was meeting in City Hall was too small to accommodate non-committee members.

The Technical Advisory Committee, which has about 30 members, has been dormant for months, but was singled out by state officials last month as being a key part of improving Flint's water quality moving forward.

High levels of lead in city water and in the blood of children and infants since the city changed its water source in April 2014 have triggered a public health emergency here, including the mass distribution of water filters.

Mayor Dayne Walling told The Flint Journal-MLive earlier this week when and where the committee meeting would be today and indicated it was open to the public.

But when citizens and journalists showed up before the meeting started at 2 p.m., they were turned away from the door by police.

As the meeting started, a door to the City Council meeting room was left open. Some reporters, including a Flint Journal reporter, were allowed inside only as chairs opened up -- about 25 minutes after the meeting started.

The committee is discussing issues including the potential for the city to return to purchasing Lake Huron water from the Detroit Water and Sewerage Department.

Formed in March by Walling and former emergency manager Jerry Ambrose, the advisory committee has met just twice, but it has grown to include an expert appointed to serve by the U.S. Environmental Protection Agency's Office of Research and Development.

In announcing an "action plan" for Flint water Friday, Oct. 2, state officials touted the committee's role in ensuring "the best technology, practices and science are being followed" going forward.

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http://michiganradio.org/post/experts-say-flint-should-return-detroit-water#stream/0

Experts say Flint should return to Detroit water

By STEVE CARMODY, Michigan Radio • 23 MINUTES AGO

A panel of experts is recommending the city of Flint return to Detroit's water system.

As protesters marched outside Flint city hall chanting “lead free water,” inside local, state and national health and water experts agreed that change is needed.

Since the city switched its drinking water source, from the Detroit Water and Sewerage Department to the Flint River in April 2014, there have been problems. At first, people complained about the taste, smell and appearance of their tap water. Eventually, the water system had problems with levels of E. coli and chemicals.

Finally, this summer, tests started showing serious levels of lead in the drinking water. State and local groups have been handing out water filters and bottled water in recent weeks to people too scared to drink from their own kitchen faucets.

“We must stay focused on the people part of the answer,” says Dr. Lawrence Reynolds, the president of Mott Children’s Health Center and a member of the expert panel.

Reynolds agreed with other committee members that Flint would be better off going back to Detroit water until a new water pipeline from Lake Huron is completed next year.

“I think we can feel that we’ve done it the right way,” says Croft, referring to the process of reviewing the scientific evidence to support a switch.

Croft says it would take about two weeks to physically start up the pipeline to Detroit. However, the process will surely take longer.

Croft says the next step is in the mayor’s and city administrator’s hands.

Switching back to Detroit water won't be cheap. City officials estimate the cost at more than $1 million a month. City leaders say they'll need the state's help to pay the cost of switching back.

While the experts agreed switching back to Detroit water is the best option, they also agreed it's not a cure-all.

"There are risks with an older infrastructure," says Mayor Dayne Walling. "Even with a Detroit water source, even with corrosion control."

Researchers from Virginia Tech say the corrosive nature of the Flint River has done extensive damage to Flint's lead and iron pipes. Switching to a different water source will help lessen the presence of lead in the water, but it won't eliminate it.

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http://www.freep.com/story/news/local/michigan/2015/10/07/experts-recommend-flint-reconnect-detroit-water/73531312/

Experts recommend Flint reconnect to Detroit water

By John Wisely, Detroit Free Press 5:19 p.m. EDT October 7, 2015

A panel of experts recommended this afternoon that Flint reconnect to Detroit's water system to improve the drinking water quality in a city plagued by elevated lead levels.

When a member of the committee asked whether anyone could think of a public health reason to maintain the current supply, which draws water from the Flint River, the room fell silent.

The recommendation echoes a request from Flint Mayor Dayne Walling, who has said reconnecting is the best way to address the public health issues created by lead in the water.

"It's estimated to cost $12 million over nine months," Walling said. "I've made a request to the governor to work with the Legislature to identify the funds."

Flint has been under state emergency financial management for several years and the money isn't in the budget, Walling said. In addition to finding the money, the city also must negotiate a contract with Detroit and with Genesee County, which owns the transmission lines that would carry the water from Detroit's main to Flint's water plant where it would be fed into the city's distribution system.

The committee's recommendation came after a raucous meeting in a small room on the third floor of Flint's City Hall. Members of the committee filled the room and the city stationed police at the door to keep the public outside the door, which was left open so people could listen.

The committee is an informal body made up of experts from the water industry, public health and other areas.

"It's just for committee members," city spokesman Jason Lorenz said.

More than a dozen residents waited outside, angry that they were not allowed inside. Two police officers guarded the door.

The council chamber, which seats several hundred people, remained empty.

Lorenz said the meeting could not be moved to the council chambers because the committee needed a table on which to conduct business.

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http://www.huffingtonpost.com/henry-henderson/poisoning-people-the-futu_b_8254390.html

Poisoning People, the Future and the Public Interest in Flint, Michigan

Henry Henderson, Natural Resources Defense Council Midwest Program Director
Huffington Post

Lead is a devastating toxin. It ravages the brain. Robs children of IQ points and brain function. And deprives our society of vast potential. It has cast a huge, destructive shadow across human civilization.

That's why Americans eliminated it from paint. From gasoline. And have struggled mightily to ban it from toys. The continuing negative impact of lead remains in soil, homes and infrastructure exposed to lead in the past, before we were able to ban it from products.

And in Flint, Michigan, its concentration in the drinking water is shockingly high.

Pipes and taps in Flint have brought water replete with toxic lead into homes for some time since the cash-strapped city shifted water sources from Detroit's treated supply drawn from Lake Huron, and began to pull water out of the Flint River.

All water isn't the same everywhere. The water from the Flint River, as treated, is far more corrosive than the Lake Huron water that had previously coursed through the City's pipes and water infrastructure. As a result of the change to corrosive river water, the aging lead pipes released higher concentrations of lead into Flint's homes. Despite the urgently stated concerns raised by residents and presented to state and local officials, the people of Flint were told their water was safe. This amazing situation has gone on repeatedly over the past year and a half. During which more and more lead-contaminated water has gone into homes, drinking glasses, baby formula, and cooking water.

Put simply and starkly: the water being delivered to the people of Flint is not safe.

Independent tests have demonstrated the city's water to be unfit for consumption. This is particularly the case with children, whose brains and bodies are developing, making them especially vulnerable to the poisonous impact of lead.

And yet, Flint's water pipes, treatment works and supply have not been fixed or effectively addressed. Instead of immediately switching the source back to Lake Huron water through Detroit, the city and state are taking baby steps--seemingly to buy time for a new water supply pipeline that will be completed next summer.

We don't think this is right. You probably don't either.

Because the situation is wrong and unacceptable, NRDC joined with local groups and the Michigan ACLU to demand emergency federal action under the Safe Drinking Water Act. If the City and State are not going to get the poison out of Flint's water, the federal government has authority to do so under emergency powers. Our group filed a petition with the U.S. Environmental Protection Agency last week to demand quick action.

We don't think anyone should be forced to drink dangerous water. Particularly, citizens of our great democracy should not have contaminated water delivered to their homes through the public water utility. Flint, Michigan is an American city; it was a manufacturing marvel that helped define the American Century with the production of cars and a strong, vibrant middle class; and, it happens to be a city in the center of the largest resource of fresh water in North America, the Great Lakes. Our fellow citizens deserve much, much better. There is strong moral responsibility to act and act quickly. The people of Flint should not drink lead-laced water for another day, let alone another year.

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Jeff Kelley
Director, Office of External Communications
U.S. EPA Region 5
ph: 312-353-1159

To: Meiburg, Stan[Meiburg.Stan@epa.gov]; Burke, Thomas[Burke.Thomas@epa.gov]; Grevatt, Peter[Grevatt.Peter@epa.gov]; Harrison, Melissa[Harrison.Melissa@epa.gov]
From: Hedman, Susan
Sent: Thur 10/8/2015 12:42:18 AM
Subject: Fwd: More Flint clips for afternoon of Oct. 7

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Sent from my iPhone

Begin forwarded message:

> **From:** "Kelley, Jeff" <kelley.jeff@epa.gov>
> **Date:** October 7, 2015 at 6:53:05 PM EDT
> **To:** "Hedman, Susan" <hedman.susan@epa.gov>, "Kaplan, Robert" <kaplan.robert@epa.gov>, "Hyde, Tinka" <hyde.tinka@epa.gov>
> **Cc:** "Rowan, Anne" <rowan.anne@epa.gov>, "Cassell, Peter" <cassell.peter@epa.gov>, "Beckmann, Ronna Erin" <beckmann.ronna@epa.gov>, "Harrison, Melissa" <Harrison.Melissa@epa.gov>, "Abrams, Dan" <Abrams.Dan@epa.gov>, "Poy, Thomas" <poy.thomas@epa.gov>
> **Subject: More Flint clips for afternoon of Oct. 7**
>
> •□□□□□□□□ Put Flint back on Detroit water ASAP, expert panel tells mayor, governor (Flint Journal)
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> http://www.mlive.com/news/flint/index.ssf/2015/10/some_committee_members_speak_u.html#incart

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http://www.freep.com/story/news/local/michigan/2015/10/07/experts-recommend-flint-reconnect-detroit-water/73531312/

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By John Wisely, Detroit Free Press 5:19 p.m. EDT October 7, 2015

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http://www.huffingtonpost.com/henry-henderson/poisoning-people-the-futu_b_8254390.html

Poisoning People, the Future and the Public Interest in Flint, Michigan

Henry Henderson, Natural Resources Defense Council Midwest Program Director
Huffington Post

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And in Flint, Michigan, its concentration in the drinking water is shockingly high.

Pipes and taps in Flint have brought water replete with toxic lead into homes for some time since the cash-strapped city shifted water sources from Detroit's treated supply drawn from Lake Huron, and began to pull water out of the Flint River.

All water isn't the same everywhere. The water from the Flint River, as treated, is far more corrosive than the Lake Huron water that had previously coursed through the City's pipes and water infrastructure. As a result of the change to corrosive river water, the aging lead pipes released higher concentrations of lead into Flint's homes. Despite the urgently stated concerns raised by residents and presented to state and local officials, the people of Flint were told their water was safe. This amazing situation has gone on repeatedly over the past year and a half. During which more and more lead-contaminated water has gone into homes, drinking glasses, baby formula, and cooking water.

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---
Jeff Kelley
Director, Office of External Communications
U.S. EPA Region 5
ph: 312-353-1159

Cc: Kelley, Jeff[kelley.jeff@epa.gov]
To: Harrison, Melissa[Harrison.Melissa@epa.gov]
From: Hedman, Susan
Sent: Thur 10/8/2015 12:52:46 AM
Subject: Flint

Hi Melissa --

I know that you sent an e-mail earlier this evening recommending against anyone doing an on camera interview with CBS and instead updating our statement -- perhaps supplementing the statement with a little background about our technical assistance role. I hope that accurately summarizes your e-mail (which seems to have vanished from my iPhone) and, if so, I completely agree with that approach. I think we should probably wait until the dust settles in the morning to update the statement -- and when that happens we will circulate it for comment.

Thanks -- and my best to you and the Administrator in Chicago!

Susan

Sent from my iPhone

Begin forwarded message:

> **From:** "Hedman, Susan" <hedman.susan@epa.gov>
> **Date:** October 7, 2015 at 8:42:18 PM EDT
> **To:** "Meiburg, Stan" <Meiburg.Stan@epa.gov>, "Burke, Thomas" <Burke.Thomas@epa.gov>, "Grevatt, Peter" <Grevatt.Peter@epa.gov>, "Harrison, Melissa" <Harrison.Melissa@epa.gov>
> **Subject: Fwd: More Flint clips for afternoon of Oct. 7**
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> > **From:** "Kelley, Jeff" <kelley.jeff@epa.gov>
> > **Date:** October 7, 2015 at 6:53:05 PM EDT
> > **To:** "Hedman, Susan" <hedman.susan@epa.gov>, "Kaplan, Robert" <kaplan.robert@epa.gov>, "Hyde, Tinka" <hyde.tinka@epa.gov>
> > **Cc:** "Rowan, Anne" <rowan.anne@epa.gov>, "Cassell, Peter" <cassell.peter@epa.gov>, "Beckmann, Ronna Erin" <beckmann.ronna@epa.gov>,

"Harrison, Melissa" <Harrison.Melissa@epa.gov>, "Abrams, Dan" <Abrams.Dan@epa.gov>, "Poy, Thomas" <poy.thomas@epa.gov>
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Switching back to Detroit water won't be cheap. City officials estimate the cost at more than $1 million a month. City leaders say they'll need the state's help to pay the cost of switching back.

While the experts agreed switching back to Detroit water is the best option, they also agreed it's not a cure-all.

"There are risks with an older infrastructure," says Mayor Dayne Walling. "Even with a Detroit water source, even with corrosion control."

Researchers from Virginia Tech say the corrosive nature of the Flint River has done extensive damage to Flint's lead and iron pipes. Switching to a different water source will help lessen the presence of lead in the water, but it won't eliminate it.

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http://www.freep.com/story/news/local/michigan/2015/10/07/experts-recommend-flint-reconnect-detroit-water/73531312/

Experts recommend Flint reconnect to Detroit water

By John Wisely, Detroit Free Press 5:19 p.m. EDT October 7, 2015

A panel of experts recommended this afternoon that Flint reconnect to Detroit's water system to improve the drinking water quality in a city plagued by elevated lead levels.

When a member of the committee asked whether anyone could think of a public health reason to maintain the current supply, which draws water from the Flint River, the room fell silent.

The recommendation echoes a request from Flint Mayor Dayne Walling, who has said reconnecting is the best way to address the public health issues created by lead in the water.

"It's estimated to cost $12 million over nine months," Walling said. "I've made a request to the governor to work with the Legislature to identify the funds."

Flint has been under state emergency financial management for several years and the money isn't in the budget, Walling said. In addition to finding the money, the city also must negotiate a contract with Detroit and with Genesee County, which owns the transmission lines that would carry the water from Detroit's main to Flint's water plant where it would be fed into the city's distribution system.

The committee's recommendation came after a raucous meeting in a small room on the third floor of Flint's City Hall. Members of the committee filled the room and the city stationed police at the door to keep the public outside the door, which was left open so people could listen.

The committee is an informal body made up of experts from the water industry, public health and other areas.

"It's just for committee members," city spokesman Jason Lorenz said.

More than a dozen residents waited outside, angry that they were not allowed inside. Two police officers guarded the door.

The council chamber, which seats several hundred people, remained empty.

Lorenz said the meeting could not be moved to the council chambers because the committee needed a table on which to conduct business.

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http://www.huffingtonpost.com/henry-henderson/poisoning-people-the-futu_b_8254390.html

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Henry Henderson, Natural Resources Defense Council Midwest Program Director
Huffington Post

Lead is a devastating toxin. It ravages the brain. Robs children of IQ points and brain function. And deprives our society of vast potential. It has cast a huge, destructive shadow across human civilization.

That's why Americans eliminated it from paint. From gasoline. And have struggled mightily to ban it from toys. The continuing negative impact of lead remains in soil, homes and infrastructure exposed to lead in the past, before we were able to ban it from products.

And in Flint, Michigan, its concentration in the drinking water is shockingly high.

Pipes and taps in Flint have brought water replete with toxic lead into homes for some time since the cash-strapped city shifted water sources from Detroit's treated supply drawn from Lake Huron, and began to pull water out of the Flint River.

All water isn't the same everywhere. The water from the Flint River, as treated, is far more corrosive than the Lake Huron water that had previously coursed through the City's pipes and water infrastructure. As a result of the change to corrosive river water, the aging lead pipes released higher concentrations of lead into Flint's homes. Despite the urgently stated concerns raised by residents and presented to state and local officials, the people of Flint were told their water was safe. This amazing situation has gone on repeatedly over the past year and a half. During which more and more lead-contaminated water has gone into homes, drinking glasses, baby formula, and cooking water.

Put simply and starkly: the water being delivered to the people of Flint is not safe.

Independent tests have demonstrated the city's water to be unfit for consumption. This is particularly the case with children, whose brains and bodies are developing, making them especially vulnerable to the poisonous impact of lead.

And yet, Flint's water pipes, treatment works and supply have not been fixed or effectively addressed. Instead of immediately switching the source back to Lake Huron water through Detroit, the city and state are taking baby steps--seemingly to buy time for a new water supply pipeline that will be completed next summer.

We don't think this is right. You probably don't either.

Because the situation is wrong and unacceptable, NRDC joined with local groups and the Michigan ACLU to demand emergency federal action under the Safe Drinking Water Act. If the City and State are not going to get the poison out of Flint's water, the federal government has authority to do so under emergency powers. Our group filed a petition with the U.S. Environmental Protection Agency last week to demand quick action.

We don't think anyone should be forced to drink dangerous water. Particularly, citizens of our great democracy should not have contaminated water delivered to their homes through the public water utility. Flint, Michigan is an American city; it was a manufacturing marvel that helped define the American Century with the production of cars and a strong, vibrant middle class; and, it happens to be a city in the center of the largest resource of fresh water in North America, the Great Lakes. Our fellow citizens deserve much, much better. There is strong moral responsibility to act and act quickly. The people of Flint should not drink lead-laced water for another day, let alone another year.

Jeff Kelley
Director, Office of External Communications
U.S. EPA Region 5
ph: 312-353-1159

To: Hedman, Susan[hedman.susan@epa.gov]
Cc: Kelley, Jeff[kelley.jeff@epa.gov]
From: Harrison, Melissa
Sent: Thur 10/8/2015 1:03:10 AM
Subject: Re: Flint

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Melissa Harrison
Press Secretary
EPA
Office: (202) 564-8421
Mobile: (202) 697-0208
Harrison.Melissa@epa.gov

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By Ron Fonger | rfonger1@mlive.com The Flint Journal on October 07, 2015 at 5:42 PM

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Flint's Technical Advisory Committee, appointed earlier this year to make recommendations aimed at improving the safety and quality of Flint water, did not vote.

But there was no doubt about the sentiments of the group, which includes experts in water science, health and engineering.

"We need to switch to a different water source, and right now. The quickest way to do that is (the Detroit Water and Sewerage Department)," said Dr. Lawrence Reynolds, president and chief executive officer of Mott Children's Health Center. "We can't stay in the spot we are in right now."

Flint Department of Public Works Director Howard Croft, who ran Wednesday's meeting, said he was comfortable reporting -- without a vote -- that the "Technical Advisory Committee is recommending going to the DWSD."

The committee's recommendation comes after the declaration of a health emergency because of rising lead levels in Flint water and in children's blood.

More than 16 months after the city's bold switch from buying Lake Huron water from Detroit to using the Flint River for water, almost every key official and representative of major institutions in the city have declared the experiment a mistake.

Last week, Gov. Rick Snyder announced an action plan for improving Flint water, including $1 million for lead-clearing faucet filters, but stopped short of committing state funds to help reconnect Flint to Detroit water.

State officials said they would monitor the recommendations from the Technical Advisory Committee, which includes representatives of the state Department of Environmental Quality and Dr. Eden Wells, chief medical executive for the Michigan Department of Health & Human Services.

"We continue to work with Flint city and community leaders about potential next steps," said Dave Murray, spokesman for Gov. Rick Snyder's office, in response to the committee's recommendation Wednesday.

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By Ron Fonger | rfonger1@mlive.com The Flint Journal on October 07, 2015 at 4:08 PM, updated October 07, 2015 at 4:18 PM

FLINT, MI -- City police blocked the door outside the meeting room of a committee of water experts today, Oct. 7, leaving some news reporters and the public outside.

Flint spokesman Jason Lorenz said City Administrator Natasha Henderson ordered the arrangement because the room where the committee was meeting in City Hall was too small to accommodate non-committee members.

The Technical Advisory Committee, which has about 30 members, has been dormant for months, but was singled out by state officials last month as being a key part of improving Flint's water quality moving forward.

High levels of lead in city water and in the blood of children and infants since the city changed its water source in April 2014 have triggered a public health emergency here, including the mass distribution of water filters.

Mayor Dayne Walling told The Flint Journal-MLive earlier this week when and where the committee meeting would be today and indicated it was open to the public.

But when citizens and journalists showed up before the meeting started at 2 p.m., they were turned away from the door by police.

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The committee is discussing issues including the potential for the city to return to purchasing Lake Huron water from the Detroit Water and Sewerage Department.

Formed in March by Walling and former emergency manager Jerry Ambrose, the advisory committee has met just twice, but it has grown to include an expert appointed to serve by the U.S. Environmental Protection Agency's Office of Research and Development.

In announcing an "action plan" for Flint water Friday, Oct. 2, state officials touted the committee's role in ensuring "the best technology, practices and science are being followed" going forward.

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By STEVE CARMODY, Michigan Radio • 23 MINUTES AGO

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U.S. EPA Region 5
ph: 312-353-1159

To: Hyde, Tinka[hyde.tinka@epa.gov]; Henry, Timothy[henry.timothy@epa.gov]
From: Hedman, Susan
Sent: Thur 10/8/2015 1:09:06 AM
Subject: Fwd: Flint

FYI

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Researchers from Virginia Tech say the corrosive nature of the Flint River has done extensive damage to Flint's lead and iron pipes. Switching to a different water source will help lessen the presence of lead in the water, but it won't eliminate it.

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http://www.freep.com/story/news/local/michigan/2015/10/07/experts-recommend-flint-reconnect-detroit-water/73531312/

Experts recommend Flint reconnect to Detroit water

By John Wisely, Detroit Free Press 5:19 p.m. EDT October 7, 2015

A panel of experts recommended this afternoon that Flint reconnect to Detroit's water system to improve the drinking water quality in a city plagued by elevated lead levels.

When a member of the committee asked whether anyone could think of a public health reason to maintain the current supply, which draws water from the Flint River, the room fell silent.

The recommendation echoes a request from Flint Mayor Dayne Walling, who has said reconnecting is the best way to address the public health issues created by lead in the water.

"It's estimated to cost $12 million over nine months," Walling said. "I've made a request to the governor to work with the Legislature to identify the funds."

Flint has been under state emergency financial management for several years and the money isn't in the budget, Walling said. In addition to finding the money, the city also must negotiate a contract with Detroit and with Genesee County, which owns the transmission lines that would carry the water from Detroit's main to Flint's water plant where it would be fed into the city's distribution system.

The committee's recommendation came after a raucous meeting in a small room on the third floor of Flint's City Hall. Members of the committee filled the room and the city stationed police at the door to keep the public outside the door, which was left open so people could listen.

The committee is an informal body made up of experts from the water industry, public health and other areas.

"It's just for committee members," city spokesman Jason Lorenz said.

More than a dozen residents waited outside, angry that they were not allowed inside. Two police officers guarded the door.

The council chamber, which seats several hundred people, remained empty.

Lorenz said the meeting could not be moved to the council chambers because the committee needed a table on which to conduct business.

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Henry Henderson, Natural Resources Defense Council Midwest Program Director
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That's why Americans eliminated it from paint. From gasoline. And have struggled mightily to ban it from toys. The continuing negative impact of lead remains in soil, homes and infrastructure exposed to lead in the past, before we were able to ban it from products.

And in Flint, Michigan, its concentration in the drinking water is shockingly high.

Pipes and taps in Flint have brought water replete with toxic lead into homes for some time since the cash-strapped city shifted water sources from Detroit's treated supply drawn from Lake Huron, and began to pull water out of the Flint River.

All water isn't the same everywhere. The water from the Flint River, as treated, is far more corrosive than the Lake Huron water that had previously coursed through the City's pipes and water infrastructure. As a result of the change to corrosive river water, the aging lead pipes released higher concentrations of lead into Flint's homes. Despite the urgently stated concerns raised by residents and presented to state and local officials, the people of Flint were told their water was safe. This amazing situation has gone on repeatedly over the past year and a half. During which more and more lead-contaminated water has gone into homes, drinking glasses, baby formula, and cooking water.

Put simply and starkly: the water being delivered to the people of Flint is not safe.

Independent tests have demonstrated the city's water to be unfit for consumption. This is particularly the case with children, whose brains and bodies are developing, making them especially vulnerable to the poisonous impact of lead.

And yet, Flint's water pipes, treatment works and supply have not been fixed or effectively addressed. Instead of immediately switching the source back to Lake Huron water through Detroit, the city and state are taking baby steps--seemingly to buy time for a new water supply pipeline that will be completed next summer.

We don't think this is right. You probably don't either.

Because the situation is wrong and unacceptable, NRDC joined with local groups and the Michigan ACLU to demand emergency federal action under the Safe Drinking Water Act. If the City and State are not going to get the poison out of Flint's water, the federal government has authority to do so under emergency powers. Our group filed a petition with the U.S. Environmental Protection Agency last week to demand quick action.

We don't think anyone should be forced to drink dangerous water. Particularly, citizens of our great democracy should not have contaminated water delivered to their homes through the public water utility. Flint, Michigan is an American city; it was a manufacturing marvel that helped define the American Century with the production of cars and a strong, vibrant middle class; and, it happens to be a city in the center of the largest resource of fresh water in North America, the Great Lakes. Our fellow citizens deserve much, much better. There is strong moral responsibility to act and act quickly. The people of Flint should not drink lead-laced water for another day, let alone another year.

Jeff Kelley
Director, Office of External Communications
U.S. EPA Region 5
ph: 312-353-1159

To: Kelley, Jeff[kelley.jeff@epa.gov]; Rowan, Anne[rowan.anne@epa.gov]
From: Hedman, Susan
Sent: Thur 10/8/2015 4:03:38 AM
Subject: Fwd: More Flint clips for afternoon of Oct. 7

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> **Date:** October 7, 2015 at 6:53:05 PM EDT
> **To:** "Hedman, Susan" <hedman.susan@epa.gov>, "Kaplan, Robert" <kaplan.robert@epa.gov>, "Hyde, Tinka" <hyde.tinka@epa.gov>
> **Cc:** "Rowan, Anne" <rowan.anne@epa.gov>, "Cassell, Peter" <cassell.peter@epa.gov>, "Beckmann, Ronna Erin" <beckmann.ronna@epa.gov>, "Harrison, Melissa" <Harrison.Melissa@epa.gov>, "Abrams, Dan" <Abrams.Dan@epa.gov>, "Poy, Thomas" <poy.thomas@epa.gov>
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Put Flint back on Detroit water ASAP, expert panel tells mayor, governor

By Ron Fonger | rfonger1@mlive.com The Flint Journal on October 07, 2015 at 5:42 PM

FLINT, MI -- The city should end its use of the Flint River as a water source, a blue ribbon advisory committee recommended Wednesday, Oct. 7.

Flint's Technical Advisory Committee, appointed earlier this year to make recommendations aimed at improving the safety and quality of Flint water, did not vote.

But there was no doubt about the sentiments of the group, which includes experts in water science, health and engineering.

"We need to switch to a different water source, and right now. The quickest way to do that is (the Detroit Water and Sewerage Department)," said Dr. Lawrence Reynolds, president and chief executive officer of Mott Children's Health Center. "We can't stay in the spot we are in right now."

Flint Department of Public Works Director Howard Croft, who ran Wednesday's meeting, said he was comfortable reporting -- without a vote -- that the "Technical Advisory Committee is recommending going to the DWSD."

The committee's recommendation comes after the declaration of a health emergency because of rising lead levels in Flint water and in children's blood.

More than 16 months after the city's bold switch from buying Lake Huron water from Detroit to using the Flint River for water, almost every key official and representative of major institutions in the city have declared the experiment a mistake.

Last week, Gov. Rick Snyder announced an action plan for improving Flint water, including $1 million for lead-clearing faucet filters, but stopped short of committing state funds to help reconnect Flint to Detroit water.

State officials said they would monitor the recommendations from the Technical Advisory Committee, which includes representatives of the state Department of Environmental Quality and Dr. Eden Wells, chief medical executive for the Michigan Department of Health & Human Services.

"We continue to work with Flint city and community leaders about potential next steps," said Dave Murray, spokesman for Gov. Rick Snyder's office, in response to the committee's recommendation Wednesday.

Virginia Tech university professor Marc Edwards said Wednesday that a change to Detroit water should result in a "dramatic reduction" of lead within a month.

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By Ron Fonger | rfonger1@mlive.com The Flint Journal on October 07, 2015 at 4:08 PM, updated October 07, 2015 at 4:18 PM

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Flint spokesman Jason Lorenz said City Administrator Natasha Henderson ordered the arrangement because the room where the committee was meeting in City Hall was too small to accommodate non-committee members.

The Technical Advisory Committee, which has about 30 members, has been dormant for months, but was singled out by state officials last month as being a key part of improving Flint's water quality moving forward.

High levels of lead in city water and in the blood of children and infants since the city changed its water source in April 2014 have triggered a public health emergency here, including the mass distribution of water filters.

Mayor Dayne Walling told The Flint Journal-MLive earlier this week when and where the committee meeting would be today and indicated it was open to the public.

But when citizens and journalists showed up before the meeting started at 2 p.m., they were turned away from the door by police.

As the meeting started, a door to the City Council meeting room was left open. Some reporters, including a Flint Journal reporter, were allowed inside only as chairs opened up -- about 25 minutes after the meeting started.

The committee is discussing issues including the potential for the city to return to purchasing Lake Huron water from the Detroit Water and Sewerage Department.

Formed in March by Walling and former emergency manager Jerry Ambrose, the advisory committee has met just twice, but it has grown to include an expert appointed to serve by the U.S. Environmental Protection Agency's Office of Research and Development.

In announcing an "action plan" for Flint water Friday, Oct. 2, state officials touted the committee's role in ensuring "the best technology, practices and science are being followed" going forward.

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Finally, this summer, tests started showing serious levels of lead in the drinking water. State and local groups have been handing out water filters and bottled water in recent weeks to people too scared to drink from their own kitchen faucets.

“We must stay focused on the people part of the answer,” says Dr. Lawrence Reynolds, the president of Mott Children’s Health Center and a member of the expert panel.

Reynolds agreed with other committee members that Flint would be better off going back to Detroit water until a new water pipeline from Lake Huron is completed next year.

“I think we can feel that we’ve done it the right way,” says Croft, referring to the process of reviewing the scientific evidence to support a switch.

Croft says it would take about two weeks to physically start up the pipeline to Detroit. However, the process will surely take longer.

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Director, Office of External Communications
U.S. EPA Region 5
ph: 312-353-1159

To: Hedman, Susan[hedman.susan@epa.gov]; Rowan, Anne[rowan.anne@epa.gov]
From: Kelley, Jeff
Sent: Thur 10/8/2015 11:58:40 AM
Subject: Re: Fwd: More Flint clips for afternoon of Oct. 7

I just took a quick look and saw a story in the Flint Journal that the governor says he'll make an announcement at 10 am today. (Also, I saw the NY Times has an article ... I saw no mention of EPA.) I'm on the train, but once I get into the office I'll gather up all the clips and send them around.

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Jeff Kelley
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U.S. EPA Region 5
ph: 312-353-1159

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> **Date:** October 7, 2015 at 6:53:05 PM EDT
> **To:** "Hedman, Susan" <hedman.susan@epa.gov>, "Kaplan, Robert" <kaplan.robert@epa.gov>, "Hyde, Tinka" <hyde.tinka@epa.gov>
> **Cc:** "Rowan, Anne" <rowan.anne@epa.gov>, "Cassell, Peter" <cassell.peter@epa.gov>, "Beckmann, Ronna Erin" <beckmann.ronna@epa.gov>, "Harrison, Melissa" <Harrison.Melissa@epa.gov>, "Abrams, Dan" <Abrams.Dan@epa.gov>, "Poy, Thomas" <poy.thomas@epa.gov>
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Because the situation is wrong and unacceptable, NRDC joined with local groups and the Michigan ACLU to demand emergency federal action under the Safe Drinking Water Act. If the City and State are not going to get the poison out of Flint's water, the federal government has authority to do so under emergency powers. Our group filed a petition with the U.S. Environmental Protection Agency last week to demand quick action.

We don't think anyone should be forced to drink dangerous water. Particularly, citizens of our great democracy should not have contaminated water delivered to their homes through the public water utility. Flint, Michigan is an American city; it was a manufacturing marvel that helped define the American Century with the production of cars and a strong, vibrant middle class; and, it happens to be a city in the center of the largest resource of fresh water in North America, the Great Lakes. Our fellow citizens deserve much, much better. There is strong moral responsibility to act and act quickly. The people of Flint should not drink lead-laced water for another day, let alone another year.

Jeff Kelley
Director, Office of External Communications
U.S. EPA Region 5
ph: 312-353-1159

To: Harrison, Melissa[Harrison.Melissa@epa.gov]
From: Hedman, Susan
Sent: Thur 10/8/2015 12:04:58 PM
Subject: Fwd: More Flint clips for afternoon of Oct. 7

Please see e-mail chain below -- I think the Gov is likely to be announcing funding for a return to Detroit water. Will confirm as soon as it happens. Please give the Administrator a heads up. Thanks for all your help with this.

Sent from my iPhone

Begin forwarded message:

> **From:** "Kelley, Jeff" <kelley.jeff@epa.gov>
> **Date:** October 8, 2015 at 7:58:40 AM EDT
> **To:** "Hedman, Susan" <hedman.susan@epa.gov>, "Rowan, Anne" <rowan.anne@epa.gov>
> **Subject: Re: Fwd: More Flint clips for afternoon of Oct. 7**
>
> I just took a quick look and saw a story in the Flint Journal that the governor says he'll make an announcement at 10 am today. (Also, I saw the NY Times has an article ... I saw no mention of EPA.) I'm on the train, but once I get into the office I'll gather up all the clips and send them around.
>
> \---
> Jeff Kelley
> Director, Office of External Communications
> U.S. EPA Region 5
> ph: 312-353-1159
>
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>
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From: "Kelley, Jeff" <kelley.jeff@epa.gov>
Date: October 7, 2015 at 6:53:05 PM EDT
To: "Hedman, Susan" <hedman.susan@epa.gov>, "Kaplan, Robert" <kaplan.robert@epa.gov>, "Hyde, Tinka" <hyde.tinka@epa.gov>
Cc: "Rowan, Anne" <rowan.anne@epa.gov>, "Cassell, Peter" <cassell.peter@epa.gov>, "Beckmann, Ronna Erin" <beckmann.ronna@epa.gov>, "Harrison, Melissa" <Harrison.Melissa@epa.gov>, "Abrams, Dan" <Abrams.Dan@epa.gov>, "Poy, Thomas" <poy.thomas@epa.gov>
Subject: More Flint clips for afternoon of Oct. 7

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•□□□□□□□□ Poisoning People, the Future and the Public Interest in Flint, Michigan (Huffington Post)

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http://www.mlive.com/news/flint/index.ssf/2015/10/some_committee_members_speak_u.html#inc

Put Flint back on Detroit water ASAP, expert panel tells mayor, governor

By Ron Fonger | rfonger1@mlive.com The Flint Journal on October 07, 2015 at 5:42 PM

FLINT, MI -- The city should end its use of the Flint River as a water source, a blue ribbon advisory committee recommended Wednesday, Oct. 7.

Flint's Technical Advisory Committee, appointed earlier this year to make recommendations aimed at improving the safety and quality of Flint water, did not vote.

But there was no doubt about the sentiments of the group, which includes experts in water science, health and engineering.

"We need to switch to a different water source, and right now. The quickest way to do that is (the Detroit Water and Sewerage Department)," said Dr. Lawrence Reynolds, president and chief executive officer of Mott Children's Health Center. "We can't stay in the spot we are in right now."

Flint Department of Public Works Director Howard Croft, who ran Wednesday's meeting, said he was comfortable reporting -- without a vote -- that the "Technical Advisory Committee is recommending going to the DWSD."

The committee's recommendation comes after the declaration of a health emergency because of rising lead levels in Flint water and in children's blood.

More than 16 months after the city's bold switch from buying Lake Huron water from Detroit to using the Flint River for water, almost every key official and representative of major institutions in the city have declared the experiment a mistake.

Last week, Gov. Rick Snyder announced an action plan for improving Flint water, including $1 million for lead-clearing faucet filters, but stopped short of committing state funds to help reconnect Flint to Detroit water.

State officials said they would monitor the recommendations from the Technical Advisory Committee, which includes representatives of the state Department of Environmental Quality and Dr. Eden Wells, chief medical executive for the Michigan Department of Health & Human Services.

"We continue to work with Flint city and community leaders about potential next steps," said Dave Murray, spokesman for Gov. Rick Snyder's office, in response to the committee's recommendation Wednesday.

Virginia Tech university professor Marc Edwards said Wednesday that a change to Detroit water should result in a "dramatic reduction" of lead within a month.

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http://www.mlive.com/news/flint/index.ssf/2015/10/flint_police_block_press_publi.html#incart_stor

Flint police block some media, public from water advisory meeting

By Ron Fonger | rfonger1@mlive.com The Flint Journal on October 07, 2015 at 4:08 PM, updated October 07, 2015 at 4:18 PM

FLINT, MI -- City police blocked the door outside the meeting room of a committee of water experts today, Oct. 7, leaving some news reporters and the public outside.

Flint spokesman Jason Lorenz said City Administrator Natasha Henderson ordered the arrangement because the room where the committee was meeting in City Hall was too small to accommodate non-committee members.

The Technical Advisory Committee, which has about 30 members, has been dormant for months, but was singled out by state officials last month as being a key part of improving Flint's water quality moving forward.

High levels of lead in city water and in the blood of children and infants since the city changed its water source in April 2014 have triggered a public health emergency here, including the mass distribution of water filters.

Mayor Dayne Walling told The Flint Journal-MLive earlier this week when and where the committee meeting would be today and indicated it was open to the public.

But when citizens and journalists showed up before the meeting started at 2 p.m., they were turned away from the door by police.

As the meeting started, a door to the City Council meeting room was left open. Some reporters, including a Flint Journal reporter, were allowed inside only as chairs opened up -- about 25 minutes after the meeting started.

The committee is discussing issues including the potential for the city to return to purchasing Lake Huron water from the Detroit Water and Sewerage Department.

Formed in March by Walling and former emergency manager Jerry Ambrose, the advisory committee has met just twice, but it has grown to include an expert appointed to serve by the U.S. Environmental Protection Agency's Office of Research and Development.

In announcing an "action plan" for Flint water Friday, Oct. 2, state officials touted the committee's role in ensuring "the best technology, practices and science are being followed" going forward.

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http://michiganradio.org/post/experts-say-flint-should-return-detroit-water#stream/0

Experts say Flint should return to Detroit water

By STEVE CARMODY, Michigan Radio • 23 MINUTES AGO

A panel of experts is recommending the city of Flint return to Detroit's water system.

As protesters marched outside Flint city hall chanting “lead free water,” inside local, state and national health and water experts agreed that change is needed.

Since the city switched its drinking water source, from the Detroit Water and Sewerage Department to the Flint River in April 2014, there have been problems. At first, people complained about the taste, smell and appearance of their tap water. Eventually, the water system had problems with levels of E. coli and chemicals.

Finally, this summer, tests started showing serious levels of lead in the drinking water. State and local groups have been handing out water filters and bottled water in recent weeks to people too scared to drink from their own kitchen faucets.

“We must stay focused on the people part of the answer,” says Dr. Lawrence Reynolds, the president of Mott Children’s Health Center and a member of the expert panel.

Reynolds agreed with other committee members that Flint would be better off going back to Detroit water until a new water pipeline from Lake Huron is completed next year.

“I think we can feel that we’ve done it the right way,” says Croft, referring to the process of reviewing the scientific evidence to support a switch.

Croft says it would take about two weeks to physically start up the pipeline to Detroit. However, the process will surely take longer.

Croft says the next step is in the mayor’s and city administrator’s hands.

Switching back to Detroit water won’t be cheap. City officials estimate the cost at more than $1 million a month. City leaders say they’ll need the state’s help to pay the cost of switching back.

While the experts agreed switching back to Detroit water is the best option, they also agreed it’s not a cure-all.

“There are risks with an older infrastructure,” says Mayor Dayne Walling. “Even with a Detroit water source, even with corrosion control.”

Researchers from Virginia Tech say the corrosive nature of the Flint River has done extensive damage to Flint’s lead and iron pipes. Switching to a different water source will help lessen the presence of lead in the water, but it won’t eliminate it.

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http://www.freep.com/story/news/local/michigan/2015/10/07/experts-recommend-flint-reconnect-detroit-water/73531312/

Experts recommend Flint reconnect to Detroit water

By John Wisely, Detroit Free Press 5:19 p.m. EDT October 7, 2015

A panel of experts recommended this afternoon that Flint reconnect to Detroit's water system to improve the drinking water quality in a city plagued by elevated lead levels.

When a member of the committee asked whether anyone could think of a public health reason to maintain the current supply, which draws water from the Flint River, the room fell silent.

The recommendation echoes a request from Flint Mayor Dayne Walling, who has said reconnecting is the best way to address the public health issues created by lead in the water.

"It's estimated to cost $12 million over nine months," Walling said. "I've made a request to the governor to work with the Legislature to identify the funds."

Flint has been under state emergency financial management for several years and the money isn't in the budget, Walling said. In addition to finding the money, the city also must negotiate a contract with Detroit and with Genesee County, which owns the transmission lines that would carry the water from Detroit's main to Flint's water plant where it would be fed into the city's distribution system.

The committee's recommendation came after a raucous meeting in a small room on the third floor of Flint's City Hall. Members of the committee filled the room and the city stationed police at the door to keep the public outside the door, which was left open so people could listen.

The committee is an informal body made up of experts from the water industry, public health and other areas.

"It's just for committee members," city spokesman Jason Lorenz said.

More than a dozen residents waited outside, angry that they were not allowed inside. Two police officers guarded the door.

The council chamber, which seats several hundred people, remained empty.

Lorenz said the meeting could not be moved to the council chambers because the committee needed a table on which to conduct business.

---

http://www.huffingtonpost.com/henry-henderson/poisoning-people-the-futu_b_8254390.html

Poisoning People, the Future and the Public Interest in Flint, Michigan

Henry Henderson, Natural Resources Defense Council Midwest Program Director
Huffington Post

Lead is a devastating toxin. It ravages the brain. Robs children of IQ points and brain function. And deprives our society of vast potential. It has cast a huge, destructive shadow across human civilization.

That's why Americans eliminated it from paint. From gasoline. And have struggled mightily to ban it from toys. The continuing negative impact of lead remains in soil, homes and infrastructure exposed to lead in the past, before we were able to ban it from products.

And in Flint, Michigan, its concentration in the drinking water is shockingly high.

Pipes and taps in Flint have brought water replete with toxic lead into homes for some time since the cash-strapped city shifted water sources from Detroit's treated supply drawn from Lake Huron, and began to pull water out of the Flint River.

All water isn't the same everywhere. The water from the Flint River, as treated, is far more corrosive than the Lake Huron water that had previously coursed through the City's pipes and water infrastructure. As a result of the change to corrosive river water, the aging lead pipes released higher concentrations of lead into Flint's homes. Despite the urgently stated concerns raised by residents and presented to state and local officials, the people of Flint were told their water was safe. This amazing situation has gone on repeatedly over the past year and a half. During which more and more lead-contaminated water has gone into homes, drinking glasses, baby formula, and cooking water.

Put simply and starkly: the water being delivered to the people of Flint is not safe.

Independent tests have demonstrated the city's water to be unfit for consumption. This is particularly the case with children, whose brains and bodies are developing, making them especially vulnerable to the poisonous impact of lead.

And yet, Flint's water pipes, treatment works and supply have not been fixed or effectively addressed. Instead of immediately switching the source back to Lake Huron water through Detroit, the city and state are taking baby steps--seemingly to buy time for a new water supply pipeline that will be completed next summer.

We don't think this is right. You probably don't either.

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ph: 312-353-1159

To: Kelley, Jeff[kelley.jeff@epa.gov]
Cc: Rowan, Anne[rowan.anne@epa.gov]
From: Hedman, Susan
Sent: Thur 10/8/2015 12:06:23 PM
Subject: Re: More Flint clips for afternoon of Oct. 7

Thanks very much.

Sent from my iPhone

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<cassell.peter@epa.gov>, "Beckmann, Ronna Erin" <beckmann.ronna@epa.gov>, "Harrison, Melissa" <Harrison.Melissa@epa.gov>, "Abrams, Dan" <Abrams.Dan@epa.gov>, "Poy, Thomas" <poy.thomas@epa.gov>
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http://www.mlive.com/news/flint/index.ssf/2015/10/some_committee_members_speak_u.html#inc

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Director, Office of External Communications
U.S. EPA Region 5
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To: Hedman, Susan[hedman.susan@epa.gov]; Henry, Timothy[henry.timothy@epa.gov]
From: Hyde, Tinka
Sent: Thur 10/8/2015 12:49:34 PM
Subject: RE: Flint

Thanks. By the way I believe the report is now completed.

From: Hedman, Susan
Sent: Wednesday, October 07, 2015 8:09 PM
To: Hyde, Tinka; Henry, Timothy
Subject: Fwd: Flint

FYI

Sent from my iPhone

Begin forwarded message:

> **From:** "Harrison, Melissa" <Harrison.Melissa@epa.gov>
> **Date:** October 7, 2015 at 9:03:10 PM EDT
> **To:** "Hedman, Susan" <hedman.susan@epa.gov>
> **Cc:** "Kelley, Jeff" <kelley.jeff@epa.gov>
> **Subject: Re: Flint**
>
> Just landed in your fine city! Yes, totally accurate. Jeff feel free to call my cell in the morning if you need anything. I'll be free until 9:10 when we leave for the event. Thanks again for all your great work Susan! Melissa
>
> Melissa Harrison
>
> Press Secretary
>
> EPA
>
> Office: (202) 564-8421
>
> Mobile: (202) 697-0208
>
> Harrison.Melissa@epa.gov

On Oct 7, 2015, at 7:52 PM, Hedman, Susan <hedman.susan@epa.gov> wrote:

Hi Melissa --

I know that you sent an e-mail earlier this evening recommending against anyone doing an on camera interview with CBS and instead updating our statement -- perhaps supplementing the statement with a little background about our technical assistance role. I hope that accurately summarizes your e-mail (which seems to have vanished from my iPhone) and, if so, I completely agree with that approach. I think we should probably wait until the dust settles in the morning to update the statement -- and when that happens we will circulate it for comment.

Thanks -- and my best to you and the Administrator in Chicago!

Susan

Sent from my iPhone

Begin forwarded message:

From: "Hedman, Susan" <hedman.susan@epa.gov>
Date: October 7, 2015 at 8:42:18 PM EDT
To: "Meiburg, Stan" <Meiburg.Stan@epa.gov>, "Burke, Thomas" <Burke.Thomas@epa.gov>, "Grevatt, Peter" <Grevatt.Peter@epa.gov>, "Harrison, Melissa" <Harrison.Melissa@epa.gov>
Subject: Fwd: More Flint clips for afternoon of Oct. 7

According to the latest round of clips, it appears that the Flint Public Works Director is interpreting today's discussion by the Technical Advisory Committee as a recommendation to return to Detroit water -- though no vote was taken.

Sent from my iPhone

Begin forwarded message:

From: "Kelley, Jeff" <kelley.jeff@epa.gov>
Date: October 7, 2015 at 6:53:05 PM EDT
To: "Hedman, Susan" <hedman.susan@epa.gov>, "Kaplan, Robert" <kaplan.robert@epa.gov>, "Hyde, Tinka" <hyde.tinka@epa.gov>
Cc: "Rowan, Anne" <rowan.anne@epa.gov>, "Cassell, Peter"

<cassell.peter@epa.gov>, "Beckmann, Ronna Erin"
<beckmann.ronna@epa.gov>, "Harrison, Melissa"
<Harrison.Melissa@epa.gov>, "Abrams, Dan" <Abrams.Dan@epa.gov>,
"Poy, Thomas" <poy.thomas@epa.gov>
Subject: More Flint clips for afternoon of Oct. 7

•□□□□□□□□ Put Flint back on Detroit water ASAP, expert panel tells mayor, governor (Flint Journal)

•□□□□□□□□ Flint police block some media, public from water advisory meeting (Flint Journal)

•□□□□□□□□ Experts say Flint should return to Detroit water (Michigan Radio)

•□□□□□□□□ Experts recommend Flint reconnect to Detroit water (Detroit Free Press)

•□□□□□□□□ Poisoning People, the Future and the Public Interest in Flint, Michigan (Huffington Post)

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http://www.mlive.com/news/flint/index.ssf/2015/10/some_committee_members_speak_u.html

Put Flint back on Detroit water ASAP, expert panel tells mayor, governor

By Ron Fonger | rfonger1@mlive.com The Flint Journal on October 07, 2015 at 5:42 PM

FLINT, MI -- The city should end its use of the Flint River as a water source, a blue ribbon advisory committee recommended Wednesday, Oct. 7.

Flint's Technical Advisory Committee, appointed earlier this year to make recommendations aimed at improving the safety and quality of Flint water, did not vote.

But there was no doubt about the sentiments of the group, which includes experts in water science, health and engineering.

"We need to switch to a different water source, and right now. The quickest way to do that is (the Detroit Water and Sewerage Department)," said Dr. Lawrence Reynolds, president and chief executive officer of Mott Children's Health Center. "We can't stay in the spot we are in right now."

Flint Department of Public Works Director Howard Croft, who ran Wednesday's meeting, said he was comfortable reporting -- without a vote -- that the "Technical Advisory Committee is recommending going to the DWSD."

The committee's recommendation comes after the declaration of a health emergency because of rising lead levels in Flint water and in children's blood.

More than 16 months after the city's bold switch from buying Lake Huron water from Detroit to using the Flint River for water, almost every key official and representative of major institutions in the city have declared the experiment a mistake.

Last week, Gov. Rick Snyder announced an action plan for improving Flint water, including $1 million for lead-clearing faucet filters, but stopped short of committing state funds to help reconnect Flint to Detroit water.

State officials said they would monitor the recommendations from the Technical Advisory Committee, which includes representatives of the state Department of Environmental Quality and Dr. Eden Wells, chief medical executive for the Michigan Department of Health & Human Services.

"We continue to work with Flint city and community leaders about potential next steps," said Dave Murray, spokesman for Gov. Rick Snyder's office, in response to the committee's recommendation Wednesday.

Virginia Tech university professor Marc Edwards said Wednesday that a change to Detroit water should result in a "dramatic reduction" of lead within a month.

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http://www.mlive.com/news/flint/index.ssf/2015/10/flint_police_block_press_publi.html#incart

Flint police block some media, public from water advisory meeting

By Ron Fonger | rfonger1@mlive.com The Flint Journal on October 07, 2015 at 4:08 PM, updated October 07, 2015 at 4:18 PM

FLINT, MI -- City police blocked the door outside the meeting room of a committee of water experts today, Oct. 7, leaving some news reporters and the public outside.

Flint spokesman Jason Lorenz said City Administrator Natasha Henderson ordered the arrangement because the room where the committee was meeting in City Hall was too small to accommodate non-committee members.

The Technical Advisory Committee, which has about 30 members, has been dormant for months, but was singled out by state officials last month as being a key part of improving Flint's water quality moving forward.

High levels of lead in city water and in the blood of children and infants since the city changed its water source in April 2014 have triggered a public health emergency here, including the mass distribution of water filters.

Mayor Dayne Walling told The Flint Journal-MLive earlier this week when and where the committee meeting would be today and indicated it was open to the public.

But when citizens and journalists showed up before the meeting started at 2 p.m., they were turned away from the door by police.

As the meeting started, a door to the City Council meeting room was left open. Some reporters, including a Flint Journal reporter, were allowed inside only as chairs opened up -- about 25 minutes after the meeting started.

The committee is discussing issues including the potential for the city to return to purchasing Lake Huron water from the Detroit Water and Sewerage Department.

Formed in March by Walling and former emergency manager Jerry Ambrose, the advisory committee has met just twice, but it has grown to include an expert appointed to serve by the U.S. Environmental Protection Agency's Office of Research and Development.

In announcing an "action plan" for Flint water Friday, Oct. 2, state officials touted the committee's role in ensuring "the best technology, practices and science are being followed" going forward.

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http://michiganradio.org/post/experts-say-flint-should-return-detroit-water#stream/0

Experts say Flint should return to Detroit water

By STEVE CARMODY, Michigan Radio • 23 MINUTES AGO

A panel of experts is recommending the city of Flint return to Detroit's water system.

As protesters marched outside Flint city hall chanting “lead free water,” inside local, state and national health and water experts agreed that change is needed.

Since the city switched its drinking water source, from the Detroit Water and Sewerage Department to the Flint River in April 2014, there have been problems. At first, people complained about the taste, smell and appearance of their tap water. Eventually, the water system had problems with levels of E. coli and chemicals.

Finally, this summer, tests started showing serious levels of lead in the drinking water. State and local groups have been handing out water filters and bottled water in recent weeks to people too scared to drink from their own kitchen faucets.

“We must stay focused on the people part of the answer,” says Dr. Lawrence Reynolds, the president of Mott Children’s Health Center and a member of the expert panel.

Reynolds agreed with other committee members that Flint would be better off going back to Detroit water until a new water pipeline from Lake Huron is completed next year.

“I think we can feel that we’ve done it the right way,” says Croft, referring to the process of reviewing the scientific evidence to support a switch.

Croft says it would take about two weeks to physically start up the pipeline to Detroit. However, the process will surely take longer.

Croft says the next step is in the mayor’s and city administrator’s hands.

Switching back to Detroit water won’t be cheap. City officials estimate the cost at more than $1 million a month. City leaders say they’ll need the state’s help to pay the cost of switching back.

While the experts agreed switching back to Detroit water is the best option, they also agreed it’s not a cure-all.

“There are risks with an older infrastructure,” says Mayor Dayne Walling. “Even with a Detroit water source, even with corrosion control.”

Researchers from Virginia Tech say the corrosive nature of the Flint River has done extensive damage to Flint's lead and iron pipes. Switching to a different water source will help lessen the presence of lead in the water, but it won't eliminate it.

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http://www.freep.com/story/news/local/michigan/2015/10/07/experts-recommend-flint-reconnect-detroit-water/73531312/

Experts recommend Flint reconnect to Detroit water

By John Wisely, Detroit Free Press 5:19 p.m. EDT October 7, 2015

A panel of experts recommended this afternoon that Flint reconnect to Detroit's water system to improve the drinking water quality in a city plagued by elevated lead levels.

When a member of the committee asked whether anyone could think of a public health reason to maintain the current supply, which draws water from the Flint River, the room fell silent.

The recommendation echoes a request from Flint Mayor Dayne Walling, who has said reconnecting is the best way to address the public health issues created by lead in the water.

"It's estimated to cost $12 million over nine months," Walling said. "I've made a request to the governor to work with the Legislature to identify the funds."

Flint has been under state emergency financial management for several years and the money isn't in the budget, Walling said. In addition to finding the money, the city also must negotiate a contract with Detroit and with Genesee County, which owns the transmission lines that would carry the water from Detroit's main to Flint's water plant where it would be fed into the city's distribution system.

The committee's recommendation came after a raucous meeting in a small room on the third floor of Flint's City Hall. Members of the committee filled the room and the city stationed police at the door to keep the public outside the door, which was left open so people could listen.

The committee is an informal body made up of experts from the water industry, public health and other areas.

"It's just for committee members," city spokesman Jason Lorenz said.

More than a dozen residents waited outside, angry that they were not allowed inside. Two police officers guarded the door.

The council chamber, which seats several hundred people, remained empty.

Lorenz said the meeting could not be moved to the council chambers because the committee needed a table on which to conduct business.

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http://www.huffingtonpost.com/henry-henderson/poisoning-people-the-futu_b_8254390.html

Poisoning People, the Future and the Public Interest in Flint, Michigan

Henry Henderson, Natural Resources Defense Council Midwest Program Director
Huffington Post

Lead is a devastating toxin. It ravages the brain. Robs children of IQ points and brain function. And deprives our society of vast potential. It has cast a huge, destructive shadow across human civilization.

That's why Americans eliminated it from paint. From gasoline. And have struggled mightily to ban it from toys. The continuing negative impact of lead remains in soil, homes and infrastructure exposed to lead in the past, before we were able to ban it from products.

And in Flint, Michigan, its concentration in the drinking water is shockingly high.

Pipes and taps in Flint have brought water replete with toxic lead into homes for some time since the cash-strapped city shifted water sources from Detroit's treated supply drawn from Lake Huron, and began to pull water out of the Flint River.

All water isn't the same everywhere. The water from the Flint River, as treated, is far more corrosive than the Lake Huron water that had previously coursed through the City's pipes and water infrastructure. As a result of the change to corrosive river water, the aging lead pipes released higher concentrations of lead into Flint's homes. Despite the urgently stated concerns raised by residents and presented to state and local officials, the people of Flint were told their water was safe. This amazing situation has gone on repeatedly over the past year and a half. During which more and more lead-contaminated water has gone into homes, drinking glasses, baby formula, and cooking water.

Put simply and starkly: the water being delivered to the people of Flint is not safe.

Independent tests have demonstrated the city's water to be unfit for consumption. This is particularly the case with children, whose brains and bodies are developing, making them especially vulnerable to the poisonous impact of lead.

And yet, Flint's water pipes, treatment works and supply have not been fixed or effectively addressed. Instead of immediately switching the source back to Lake Huron water through Detroit, the city and state are taking baby steps--seemingly to buy time for a new water supply pipeline that will be completed next summer.

We don't think this is right. You probably don't either.

Because the situation is wrong and unacceptable, NRDC joined with local groups and the Michigan ACLU to demand emergency federal action under the Safe Drinking Water Act. If the City and State are not going to get the poison out of Flint's water, the federal government has authority to do so under emergency powers. Our group filed a petition with the U.S. Environmental Protection Agency last week to demand quick action.

We don't think anyone should be forced to drink dangerous water. Particularly, citizens of our great democracy should not have contaminated water delivered to their homes through the public water utility. Flint, Michigan is an American city; it was a manufacturing marvel that helped define the American Century with the production of cars and a strong, vibrant middle class; and, it happens to be a city in the center of the largest resource of fresh water in North America, the Great Lakes. Our fellow citizens deserve much, much better. There is strong moral responsibility to act and act quickly. The people of Flint should not drink lead-laced water for another day, let alone another year.

Jeff Kelley
Director, Office of External Communications
U.S. EPA Region 5
ph: 312-353-1159

To: Hedman, Susan[hedman.susan@epa.gov]; Kaplan, Robert[kaplan.robert@epa.gov]; Hyde, Tinka[hyde.tinka@epa.gov]
Cc: Rowan, Anne[rowan.anne@epa.gov]; Cassell, Peter[cassell.peter@epa.gov]; Beckmann, Ronna Erin[beckmann.ronna@epa.gov]; Harrison, Melissa[Harrison.Melissa@epa.gov]; Abrams, Dan[Abrams.Dan@epa.gov]; Poy, Thomas[poy.thomas@epa.gov]
From: Kelley, Jeff
Sent: Thur 10/8/2015 1:11:27 PM
Subject: Flint clips for morning of Oct. 8

Note that Gov. Snyder is expected to make an announcement at 10 a.m. Eastern. The state will be livestreaming the announcement at http://1.usa.gov/1QapVxk

•□□□□□□□□ Gov. Snyder says he'll make announcement on Flint water Thursday (Flint Journal)

•□□□□□□□□ Governor plans 10 a.m. announcement on troubled Flint water system (Associated Press)

•□□□□□□□□ Flint Officials Are No Longer Saying the Water Is Fine (New York Times)

•□□□□□□□□ Waiting for answers, action in Flint water crisis (Detroit Free Press)

•□□□□□□□□ Flint health experts support Detroit water reconnection (Detroit News)

•□□□□□□□□ Uber, others join in efforts to pour clean water into Flint (Flint Journal)

•□□□□□□□□ Flint water crisis a bitter indictment of dysfunctional emergency manager (Michigan Chronicle)

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http://www.mlive.com/news/flint/index.ssf/2015/10/gov_snyder_says_hell_make_anno.html

Gov. Snyder says he'll make announcement on Flint water Thursday

By Ron Fonger | rfonger1@mlive.com The Flint Journal on October 07, 2015 at 9:45 PM, updated October 08, 2015 at 8:08 AM

FLINT, MI -- Gov. Rick Snyder says on Twitter that he will make an announcement about Flint water at 10 a.m. Thursday.

The planned announcement comes less than 24 hours after Flint's Technical Advisory Committee recommended the city end its use of the Flint River as its water source.

Since making the switch from using pre-treated Lake Huron water from the city of Detroit to treating river water at its own plant in April 2014, Flint officials have struggled to maintain the quality and safety of water delivered to city residents.

Snyder's Twitter message says, "Watch live tomorrow at 10 a.m. as I make an announcement regarding Flint water" at mi.gov/SnyderLive.

The state's Web site says the governor will be joined by Flint Mayor Dayne Walling, other state officials, and Ridgway White of the Charles Stewart Mott Foundation.

High levels of lead in city water and in the blood of children and infants since the city changed its water source have triggered a public health emergency here, including the mass distribution of lead-clearing faucet filters and bottled water.

Researchers from Virginia Tech university say river water has proven to be far more corrosive than water from the Detroit Water and Sewerage Department, causing lead to leach into homes that have lead service lines.

Flint City Administrator Natasha Henderson said today, Oct. 7, that she believes the position of state officials has been shifting on continued use of the Flint River, a change that was made while Flint was being run by a state-appointed emergency manager.

"We're to the point that the state believes this is a public health emergency," Henderson told the City Council. "From what I see, the state is working very well with us."

The city administrator is among officials who have advocated for a return to buying water from the DWSD since a study was released last month by Hurley Medical Center's director of pediatric residency program.

The study showed the percentage of Flint infants and children with above average lead levels has nearly doubled citywide since the switch to river water, and has nearly tripled among children in "high risk" areas of lead exposure.

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http://www.macombdaily.com/general-news/20151008/governor-plans-10-am-announcement-on-troubled-flint-water-system

Governor plans 10 a.m. announcement on troubled Flint water system

FLINT (AP) — Gov. Rick Snyder plans an announcement about the water system in Flint, which is facing a public health emergency over lead in its water.

A posting on the state’s website says Snyder on Thursday morning will be joined for the announcement by officials including Flint Mayor Dayne Walling, state Department of Environmental Quality Director Dan Wyant and state Department of Health and Human Services Director Nick Lyon.

The announcement comes a day after a committee of local experts in health, water and science recommended Flint reconnect to Detroit’s water system while it awaits a new pipeline to Lake Huron.

Flint has a public health emergency due to corrosive water leaching lead from old pipes. State government and nonprofit groups are distributing filters and bottled water to Flint homes and schools.

Snyder's announcement can be viewed live at 10 a.m. Thursday, Oct. 8 by visiting http://1.usa.gov/1QapVxk

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http://www.nytimes.com/2015/10/08/us/reassurances-end-in-flint-after-months-of-concern.html

Flint Officials Are No Longer Saying the Water Is Fine

By MONICA DAVEY, New York Times, OCT. 7, 2015

FLINT, Mich. — All along, through months of complaints from residents of this city about the peculiar colors and odors they said were coming from their faucets, the overriding message from the authorities here was that the water would be just fine.

Yes, there had been a boil order when fecal coliform bacteria turned up in some neighborhoods last year. And yes, the extra chlorine that was pumped in to solve that problem seemed to create another one — increased levels of a different contaminant.

Still, the guidance from Flint officials about the temporary water supply they switched to in 2014 — partly to save money — sounded assuring. In a notice sent to residents in July, city officials declared: "This is not an emergency. If a situation arises where the water is no longer safe to drink, you will be notified within 24 hours."

The soothing talk has vanished. In recent weeks, testing has shown increased levels of lead in the blood of some Flint children — and health officials pointed to the water as a possible source.

First, the city advised residents to run their water for five minutes before using it, to use only cold water for drinking and cooking, and to install lead-removing water filters. Then county officials issued an emergency advisory recommending that people not drink Flint's water unless it is tested for lead or filtered.

And last Friday, after corroborating that lead levels had risen in some children, state officials called for the water to be tested at all Flint public schools and for stepped-up efforts to replace lead service lines; they also promised $1 million to provide filters.

Officials met here on Wednesday afternoon, and talks were underway, officials said, for additional solutions that could come as early as Thursday. Gov. Rick Snyder said on Twitter late Wednesday that he planned to make an announcement about the situation on Thursday morning.

Private groups have raced to donate bottled water to schools, where the water fountains are now shut off, as well as filters to families who cannot afford them. Saying "we're just in a heck of a bind," Robert J. Pickell, the Genesee County sheriff, began serving bottled water and food that need not be cooked in water to hundreds of inmates in the county jail. Some residents have begun washing their children and pets with bottled water.

And Flint's mayor, Dayne Walling, who had attended a 2014 event to celebrate the switch to the new water supply, called for returning to the city's old water supply and urged state officials to provide millions of dollars to help pay for it.

The contaminated water was just the latest blow to Flint, an economically battered city that has struggled for years with factory closings, job losses and population decline.

Along Saginaw Street downtown, where at least one business had an “un-leaded” sign posted by a jug of water, residents had lingering questions: Would filters really do enough to make the water safe? What about unfiltered showers? Could they rely on the water at work and at restaurants? And why had it taken so long for leaders to figure out that there was a problem?

“I don’t think people know what’s going on at all,” said Chris Thornton, 49, who described the first blast of water from his faucets some days as looking like urine, smelling like bleach and tasting of metal. After his wife, Ronda, 50, felt sick to her stomach for months, the Thorntons began buying jugs of bottled water, though the price — on top of an already steep water bill — has been overwhelming.

“As far as my family,” Ronda Thornton said, “we’ve just given up on the city’s water.”

Flint’s water problems are tied inextricably to its fiscal woes. In 1960, nearly 200,000 people lived here. But auto plants closed, and the population has dropped by half. By 2011, Flint’s shrunken tax base and seemingly intractable budget problems prompted Mr. Snyder to appoint an emergency manager for the city. Over the next four years, the city had four managers overseeing operations. Along the way, the city switched its water supply.

For decades, the city bought water from Detroit, which treated water from Lake Huron, then piped it here, 70 miles to the northwest. But with the costs mounting, Flint’s leaders decided they could save millions by joining a new regional authority that would draw and treat its own water from Lake Huron.

There was one complication: Flint needed an alternative water supply from April 2014 until the new regional system is ready, probably next year. In the interim, Flint switched to using water from the Flint River, which state officials say had been a backup source in the past.

Ask residents about the Flint River, and many of them roll their eyes. They say it was once as a dumping ground for car parts, grocery carts and refrigerators. There have been significant improvements and intensive restoration campaigns in recent years, though a Flint River Fest set for Friday has been postponed, organizers said, given the “current drinking water crisis.”

Even now, state officials say that treated Flint River water is safe and capable of meeting state and federal standards. Officials say the problem may be that some of the aging pipes and service lines that carry water into Flint’s homes and businesses contain lead and are being corroded by water. The water Flint used to receive from Detroit was treated with chemicals intended to prevent such corrosion.

For months, questions about lead and other risks multiplied. “Everyone kept saying: ‘It’s safe! It’s safe! It’s safe!’ ” recalled Melissa Mays, a Flint resident who says she was sickened by the water and has helped organize residents over the issue.

Then in September, a researcher from Virginia Tech released findings from the water in hundreds of Flint homes showing elevated lead levels. Blood tests released by a local pediatrician — and corroborated last week by state officials analyzing their own testing — showed an increase in lead levels in children in some neighborhoods since 2014, when the city began drawing water from the river.

“We all have a concern about Flint’s drinking water in terms of what we’re seeing in terms of lead,” Mr. Snyder said last week.

Mr. Walling said that the move to river water occurred when an emergency manager controlled the city, though the City Council did vote for the city’s plans for a new, regional water system. He acknowledged supporting the move in a state of the city address, but said that he had not been given sufficient information about the safety risks.

“I had to work with what I knew at the time,” Mr. Walling, who is up for election next month, said in an interview.

But for many residents, the authorities failed the city by taking so long to react. “Anytime you have to weigh money against the health and welfare of people, it always has to be the health and welfare you go with," said the Rev. Alfred Harris, a local pastor who has stopped conducting baptisms at his church because of concerns about the water. "We've been talking about this for the last 14 months, and they did not give a sincere ear to any of us. Shame on you!"

LeeAnne Walters said her son, Gavin, 4, who has immune system issues, had suffered direct consequences. After the switch to river water, which sometimes looked brown in their house, Gavin dropped to 27 pounds, far below the weight of his twin brother, she said. He sometimes seemed unable to pronounce words he knew, she said, and then test results showed an elevated lead level in his blood.

"He is going to deal with the side effects of this for the rest of his life," Ms. Walters said. "I don't think there's a word angry enough to describe my anger. I trusted the city, and I helped the city poison my kid. Who thought this could happen in the United States?"

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http://www.freep.com/story/opinion/columnists/nancy-kaffer/2015/10/07/flint-water-crisis/73534078/

Waiting for answers, action in Flint water crisis

By Nancy Kaffer, Detroit Free Press Columnist 10:27 p.m. EDT October 7, 2015

They are still waiting for answers about the water in Flint.

And it's hard to say when, or if, those answers are coming.

It has been two weeks since a hospital researcher found that more Flint kids had been lead poisoned since the city switched its municipal water supply. And it has been nearly a week since the State of Michigan abruptly changed its posture, acknowledging, after months of denial and empty assurances, that Flint's water supply was compromised.

Since then, a lot of folks have worked diligently to sort out how things went so badly wrong in this small, impoverished city, and what the State of Michigan is doing to fix it.

But solutions remain elusive.

The state announced Friday that it has devoted $1 million to provide water filters for Flint residents, is expanding water testing and expediting improved water treatment. But two weeks on, Flint hasn't started adding chemicals to its water that would allow it to pass safely through the city's lead service pipes. That plan can likely be ready within a week, and can be enacted as soon as it's approved by the Michigan Department of Environmental Quality. Scientists say it would take roughly a month before those chemicals would begin to effect Flint's drinking water.

That would be the right play, unless the city opts to rejoin the Detroit Water and Sewerage Department -- as water experts have recommended -- a decision that would likely require financial assistance from the State of Michigan but could result in potable water flowing from Flint taps within two weeks. Is it likely to happen? Your guess is as good as mine.

And state officials continue to insist that the rules designed to monitor water systems, to ensure safe drinking water, worked as they're supposed to.

Kids in danger

The effects of lead on children are irreversible. Lead-poisoned kids can experience a host of behavioral and developmental problems, and in two Flint ZIP codes, the percentage of children affected by lead has doubled, reversing a long trend of improving rates.

That's because in 2014, Flint decided to pump untreated water from the Flint River, ending a decades-long relationship with the Detroit Water and Sewerage Department, while a new regional water authority it's joining is under construction. Since then, Flint's been treating its water locally, prompting a rash of problems related to coliform bacteria, a disinfectant and its byproduct, and now, elevated lead.

Both of these decisions were made while Flint was under state oversight, during the appointments of a series of emergency managers appointed by and answerable to Gov. Rick Snyder. The Michigan Department of Environmental Quality, whose director is appointed by the governor, must ensure that water systems are producing safe drinking water. Because Flint's water decisions were made under Snyder's emergency managers, the governor's decision-making authority is one step closer to Flint's water crisis.

The water Flint bought from Detroit was "finished," in other words, safe for humans to drink, but also treated to create a film inside those pipes that kept the lead out. That's called "corrosion control," and Detroit achieved this goal by adding phosphates to the water it pumps from Lake Huron.

Flint doesn't.

It took an unreasonably long time to get a solid answer to this question.

Corrosion control

Since April 2014, treatment at Flint's plant has included adding lime to the water it distributed to customers, largely to make the water less acidic, Liane Shekter Smith, chief of the MDEQ's office of drinking water and municipal assistance, said Tuesday.

"There was no corrosion control plan put forward at the time of the switch," Shekter Smith said. "There was a belief that (acidity) adjustment would provide adequate corrosion control, and that rounds of testing would confirm or refute that."

Any new water supply must be tested at six-month intervals to determine whether it meets the guidelines of the federal lead and copper rule, a standard established by the U.S. Environmental Protection Agency.

Tests of Flint's drinking water showed roughly 6 parts per billion (how the presence of lead in water is reckoned) in water sampled between June and December of 2014, said MDEQ spokesman Brad Wurfel. The U.S. Centers for Disease Control and Prevention said there is no acceptable level of lead exposure, but 6 ppb would, in some cases, fall below the EPA's actionable level of 15 ppb.

But because the community Flint serves is so large, it must meet a different threshold, 5 ppb. If a second round of testing showed that lead levels continued to exceed it, Flint would be required to improve its method of corrosion control.

Water sampled between January and June of 2015 showed an alarming increase: lead levels had risen to 11 ppb.

That kind of testing, Shekter Smith said, is the most reliable way to determine whether corrosion control is working.

"Having it in place is best way to know what is happening out in the system," she said.

Given the elevated blood-lead levels in Flint kids, the damage lead can cause, and the permanence of that damage, is that enough?

"I think that we are following the protocol," she said, "and the protocol got us to the right place, and we're making the right decisions."

“It did?" said Erik Olson, a senior strategy director for the Washington, D.C.-based Natural Resources Defense Council. "It didn’t sound like it."

Because the composition of water varies so greatly, there's no one right way to do corrosion control, Olson said. But Flint's plan to use lime only should have prompted questions before switching to Flint River water.

"They definitely should have said, 'OK, what’s the basis of that decision? What’s your engineering study that shows that that’s optimizing your corrosion control?' " Olson said.

That Flint's river water would pass through pipes with lead components shouldn't have been surprising, Olson said -- the presence of lead in the water and sewage infrastructure is well-documented, and well-known.

So why didn't Flint's engineers account for that, when developing a treatment plan? That's just one of the questions I still can't answer.

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http://www.detroitnews.com/story/news/local/michigan/2015/10/08/flint-health-experts-support-detroit-water-reconnection/73568654/

Flint health experts support Detroit water reconnection

Detroit News Staff and wire reports 7:58 a.m. EDT October 8, 2015

Flint — A committee of local experts in health, water and science has recommended that Flint reconnect to Detroit's water system.

Flint administrator Natasha Henderson urged the committee to not think about cost and decide "what's in the best interest" for Flint, which has a water crisis due to elevated levels of lead in children.

The Technical Advisory Committee met Wednesday. It rarely meets, but state officials say it will have a role in Flint's water quality. The committee has no formal role in deciding whether Flint stops using the Flint River for water.

Flint has a public health emergency due to corrosive water leaching lead from old pipes. A Virginia Tech researcher says there would be dramatic reductions in about a month if the Detroit water system is used.

Gov. Rick Snyder's administration last week said it was considering temporarily reconnecting Flint to Detroit's water system temporarily in a bid to tackle the ongoing water quality and lead issues. The state also planned to expedite construction of a new water line to Lake Huron so a planned water authority that would service Flint could operate as soon as possible. An announcement on the Flint water plan was expected Thursday.

Sara Wurfel, a spokeswoman for Snyder, said the recommendation Wednesday "is an option we're helping thoroughly review and consider with the city, and the technical advisory committee's work is much appreciated in this matter. We're also focused on working hard in collaboration with all and implementing the key action steps outlined on Oct. 2 to help protect public health and ensure safe, accessible drinking water for Flint residents."

Since 2014, the Genesee County city has drawn its drinking water from the Flint River, which has led to major problems for residents.

Last month, the city issued an advisory about its drinking water after concerns surfaced about lead contamination.

On Tuesday, Snyder’s administration made free water filters available for residents.

Meanwhile, Uber drivers began collecting donations of bottled water for Flint schools. And Mayor Dayne Walling this week said he gave to Flint Community Schools some 19 palettes Kroger grocers donated.

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http://www.mlive.com/news/flint/index.ssf/2015/10/donors_show_support_by_giving.html

Uber, others join in efforts to pour clean water into Flint

By Jiquanda Johnson | jjohns16@mlive.com The Flint Journal Follow on Twitter on October 08, 2015 at 5:00 AM, updated October 08, 2015 at 5:06 AM

FLINT, MI -- Businesses, charities and individuals have donated thousands of bottles of water to city of Flint residents and students since last year after controversy erupted over the quality of the city's water. Here is a list of some of the donors.

•□□□□□□□□ The United Way of Genesee County has actively participated in looking at ways to ease water woes in the city of Flint.

•□□□□□□□□ ZeroWater partnered with United Way and Flint Community Schools early October to bring water filters to the school district as a solution instead of having students drink bottled water.

•□□□□□□□□ Uber announced on Oct. 6 that drivers in Detroit will pick up donated bottles of water to bring to Flint throughout the week. People in Detroit just have to use their

Uber link to notify drivers that water needs to be picked up. The initiative runs from 2 to 7 p.m. from Oct. 6 - 8.

•□□□□□□□□ There was another donation of more than 4,000 gallons of bottled water through the Flint Diaper Bank and United Way of Genesee County on Oct. 7.

•□□□□□□□□ Donations came in from Flint-area Home Depots and Sam's Club after Hurley Medical Center doctors revealed that lead levels in children in Flint had elevated after the city switched from Detroit's water source to the Flint River.

•□□□□□□□□ Mott Community College issued an Oct. 7 media release saying they are donating bottled water to Pierce Elementary School on the city's north side on Oct. 8.

•□□□□□□□□ Swan Valley High School in Saginaw is collecting bottled water to send to Flint Public Schools. The bottled water drive ends Oct. 9 and school officials are hoping to drop donations off to Flint Community Schools on Oct. 9.

•□□□□□□□□ Bendle High School sophomore Chase Harrison raised money to purchase bottled water for Flint Community Schools.

•□□□□□□□□ Lavish Living, a Flint-based organization, has donated at least 200 cases of water to Flint Community Schools. As of Oct. 6 the organization was still working to collect more water for students.

•□□□□□□□□ The Flint Northwestern football team delivered an estimated 40 cases of water on Oct. 5 to Flint area residents between Dupont, Clio, Carpenter and Pierson roads.

•□□□□□□□□ General Motors Foundation

•□□□□□□□□ In January, Sargent Title Co. collected about 600 cases of water to donated to Flint residents.

•□□□□□□□□ Absopure Water Corp. donated a semi-truck worth of bottled water to Flint residents in January.

•□□□□□□□□ 1st Congregational United Church of Christ in Kalamazoo donated 4,000 bottles of water in September.

•□□□□□□□□ Al Serra Auto Plaza announced Oct. 7 that they will serve as drop off location for bottled water donations. If donors give 12 or more bottles of water, the dealership is offering free tire rotation.

•□□□□□□□□ In March, members of the Michigan National Action Network provided an estimated 10,000 bottles of water to Flint residents.

•□□□□□□□□ District leaders also expect at least 1,000 cases of bottled water to arrive at the Food Bank on Wednesday, Oct. 7, from the Saginaw Chippewa Indian Tribe and Soaring Eagle Waterpark and Hotel and Soaring Eagle Casino and Resort.

The Flint Journal will do updates as more donor names are provided. If anyone has donor information make a note of it in the comments section of this post, or email The Flint Journal at flnews@mlive.com.

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http://michronicleonline.com/2015/10/07/flint-water-crisis-a-bitter-indictment-of-dysfunctional-emergency-manager/

Flint water crisis a bitter indictment of dysfunctional emergency manager

By Curt Guyette, Special to The Michigan Chronicle

Stark evidence of how terribly bad things can go when democracy is dismantled can be found in the elevated levels of lead in the children of Flint.

Because of decisions made by an appointed emergency manager, the tragically high costs of trying to balance a budget by switching to an unsafe water source will be borne by kids now forced to struggle with lower IQs, behavioral problems, learning disabilities, and a host of other ill effects.

This is what can happen when people are denied full access to representative government; they get poisoned by appointees with no connection to the community. Under Michigan’s emergency manager law – PA 436 — gubernatorial appointees can leave town claiming to have successfully solved a fiscal crisis when in fact what they leave in their wake is a catastrophe of monumental proportions.

In recent days, as the lead problems in Flint have made international news, former Flint emergency manager Darnell Earley – the man in charge when the switch to the Flint River was made, and who is now overseeing the education of the children in Detroit Public Schools – has tried to deny any responsibility for the catastrophe.

According to the Detroit Free Press, Earley claimed in an e-mailed statement "that he was not involved in the decision to use river water."

The governor's office and Earley can rightfully claim that the Flint mayor and City Council initially gave their blessing to the switch made 18 months ago. But that fig leaf provides little real cover for the state officials now trying to run away from their disastrous decision.

For starters, it doesn't matter what the mayor and City Council had to say when the decision was made. The emergency manager, under the sweeping powers granted under Public Act 436, had complete authority to make the switch regardless of what Flint's elected officials wanted.

Moreover, those officials were in essence working for the emergency manager, not the people who elected them. The EM decided how much pay the mayor and council members drew, and how much power they could wield.

How do things go when appointed officials try to buck the control of an EM? As we've seen in Benton Harbor and Detroit Public Schools, the answer is that they get denuded of all power and are completely marginalized.

The message to elected officials under state control has been made perfectly clear: play ball with the EM, or else.

But there is another problem with the EM law as well, one made painfully obvious in Flint. In a normally-functioning democracy, when it came time for a city of Flint to conduct tests to show it is in compliance with federal drinking water regulations, the city would be an independent actor with the Michigan Department of Environmental Quality (MDEQ) serving as a separate check on the system, another independent actor providing oversight to make sure the job is done correctly.

Instead, with Governor Rick Snyder's man being the one in charge when the decision was made to start using river water – a decision that was almost instantly revealed to be fraught with problems – the MDEQ, instead of being a watchdog protecting the citizens of Flint, served as a collaborator, working with the city to do everything in their power to skew results so that their tests would make it appear that the water was safe when it wasn't.

How do we know it wasn't safe? Because grassroots citizen groups worked with researchers at Virginia Tech and the ACLU of Michigan to conduct an independent test of nearly 300 city homes and found that the problem was far worse than the city and state claimed.

When those results were released in mid-September, the response by the state was to try and discredit them. The same was true a week later, when a Hurley Children's Hospital study found the number of children with elevated lead levels doubled after the switch to the Flint River was made.

Those two studies, and the host of problems with the state and city's water testing, last week prompted the ACLU of Michigan, the Natural Resources Defense Council, and an array of civic groups to file a petition with the U.S. EPA, calling upon the federal government to come in and provide the oversight necessary to ensure Flint's water is clean and safe.

Finally, after the state's own data confirmed those findings, and Genesee County officials took the drastic step of declaring a public health emergency, the governor and MDEQ were forced to finally admit the truth and started taking some action.

But even if those measures are enough – and they may well not be, failing as they do to require a switch back to the much cleaner and far less corrosive Detroit system – the damage already caused by this governor and his emergency managers is irreversible for the children who will struggle for the rest of their lives because of the decisions made while Flint was under state control and democracy was suspended.

Jeff Kelley
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To: Fortin, Denise[Fortin.Denise@epa.gov]; Henry, Timothy[henry.timothy@epa.gov]; Davis, CatherineM[Davis.CatherineM@epa.gov]
From: Beckmann, Ronna Erin
Sent: Thur 10/8/2015 1:33:43 PM
Subject: FW: Flint clips for morning of Oct. 8

Note that Gov. Snyder is expected to make an announcement at 10 a.m. Eastern. The state will be livestreaming the announcement at http://1.usa.gov/1QapVxk

Ronna Beckmann

Office of the Regional Administrator

U.S. Environmental Protection Agency, Region 5

312-886-0689

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From: Kelley, Jeff
Sent: Thursday, October 08, 2015 8:11 AM
To: Hedman, Susan; Kaplan, Robert; Hyde, Tinka
Cc: Rowan, Anne; Cassell, Peter; Beckmann, Ronna Erin; Harrison, Melissa; Abrams, Dan; Poy, Thomas
Subject: Flint clips for morning of Oct. 8

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- Gov. Snyder says he'll make announcement on Flint water Thursday (Flint Journal)
- Governor plans 10 a.m. announcement on troubled Flint water system (Associated Press)
- Flint Officials Are No Longer Saying the Water Is Fine (New York Times)

•□□□□□□□□ Waiting for answers, action in Flint water crisis (Detroit Free Press)

•□□□□□□□□ Flint health experts support Detroit water reconnection (Detroit News)

•□□□□□□□□ Uber, others join in efforts to pour clean water into Flint (Flint Journal)

•□□□□□□□□ Flint water crisis a bitter indictment of dysfunctional emergency manager (Michigan Chronicle)

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http://www.mlive.com/news/flint/index.ssf/2015/10/gov_snyder_says_hell_make_anno.html

Gov. Snyder says he'll make announcement on Flint water Thursday

By Ron Fonger | rfonger1@mlive.com The Flint Journal on October 07, 2015 at 9:45 PM, updated October 08, 2015 at 8:08 AM

FLINT, MI -- Gov. Rick Snyder says on Twitter that he will make an announcement about Flint water at 10 a.m. Thursday.

The planned announcement comes less than 24 hours after Flint's Technical Advisory Committee recommended the city end its use of the Flint River as its water source.

Since making the switch from using pre-treated Lake Huron water from the city of Detroit to treating river water at its own plant in April 2014, Flint officials have struggled to maintain the quality and safety of water delivered to city residents.

Snyder's Twitter message says, "Watch live tomorrow at 10 a.m. as I make an announcement regarding Flint water" at mi.gov/SnyderLive.

The state's Web site says the governor will be joined by Flint Mayor Dayne Walling, other state officials, and Ridgway White of the Charles Stewart Mott Foundation.

High levels of lead in city water and in the blood of children and infants since the city changed its water source have triggered a public health emergency here, including the mass distribution of lead-clearing faucet filters and bottled water.

Researchers from Virginia Tech university say river water has proven to be far more corrosive than water from the Detroit Water and Sewerage Department, causing lead to leach into homes that have lead service lines.

Flint City Administrator Natasha Henderson said today, Oct. 7, that she believes the position of state officials has been shifting on continued use of the Flint River, a change that was made while Flint was being run by a state-appointed emergency manager.

"We're to the point that the state believes this is a public health emergency," Henderson told the City Council. "From what I see, the state is working very well with us."

The city administrator is among officials who have advocated for a return to buying water from the DWSD since a study was released last month by Hurley Medical Center's director of pediatric residency program.

The study showed the percentage of Flint infants and children with above average lead levels has nearly doubled citywide since the switch to river water, and has nearly tripled among children in "high risk" areas of lead exposure.

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http://www.macombdaily.com/general-news/20151008/governor-plans-10-am-announcement-on-troubled-flint-water-system

Governor plans 10 a.m. announcement on troubled Flint water system

FLINT (AP) — Gov. Rick Snyder plans an announcement about the water system in Flint, which is facing a public health emergency over lead in its water.

A posting on the state's website says Snyder on Thursday morning will be joined for the announcement by officials including Flint Mayor Dayne Walling, state Department of Environmental Quality Director Dan Wyant and state Department of Health and Human Services Director Nick Lyon.

The announcement comes a day after a committee of local experts in health, water and science recommended Flint reconnect to Detroit's water system while it awaits a new pipeline to Lake Huron.

Flint has a public health emergency due to corrosive water leaching lead from old pipes. State government and nonprofit groups are distributing filters and bottled water to Flint homes and schools.

Snyder's announcement can be viewed live at 10 a.m. Thursday, Oct. 8 by visiting http://1.usa.gov/1QapVxk

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http://www.nytimes.com/2015/10/08/us/reassurances-end-in-flint-after-months-of-concern.html

Flint Officials Are No Longer Saying the Water Is Fine

By MONICA DAVEY, New York Times, OCT. 7, 2015

FLINT, Mich. — All along, through months of complaints from residents of this city about the peculiar colors and odors they said were coming from their faucets, the overriding message from the authorities here was that the water would be just fine.

Yes, there had been a boil order when fecal coliform bacteria turned up in some neighborhoods last year. And yes, the extra chlorine that was pumped in to solve that problem seemed to create another one — increased levels of a different contaminant.

Still, the guidance from Flint officials about the temporary water supply they switched to in 2014 — partly to save money — sounded assuring. In a notice sent to residents in July, city officials declared: “This is not an emergency. If a situation arises where the water is no longer safe to drink, you will be notified within 24 hours.”

The soothing talk has vanished. In recent weeks, testing has shown increased levels of lead in the blood of some Flint children — and health officials pointed to the water as a possible source.

First, the city advised residents to run their water for five minutes before using it, to use only cold water for drinking and cooking, and to install lead-removing water filters. Then county officials issued an emergency advisory recommending that people not drink Flint’s water unless it is tested for lead or filtered.

And last Friday, after corroborating that lead levels had risen in some children, state officials called for the water to be tested at all Flint public schools and for stepped-up efforts to replace lead service lines; they also promised $1 million to provide filters.

Officials met here on Wednesday afternoon, and talks were underway, officials said, for additional solutions that could come as early as Thursday. Gov. Rick Snyder said on Twitter late Wednesday that he planned to make an announcement about the situation on Thursday morning.

Private groups have raced to donate bottled water to schools, where the water fountains are now shut off, as well as filters to families who cannot afford them. Saying “we’re just in a heck of a bind,” Robert J. Pickell, the Genesee County sheriff, began serving bottled water and food that need not be cooked in water to hundreds of inmates in the county jail. Some residents have begun washing their children and pets with bottled water.

And Flint’s mayor, Dayne Walling, who had attended a 2014 event to celebrate the switch to the new water supply, called for returning to the city’s old water supply and urged state officials to provide millions of dollars to help pay for it.

The contaminated water was just the latest blow to Flint, an economically battered city that has struggled for years with factory closings, job losses and population decline.

Along Saginaw Street downtown, where at least one business had an “un-leaded” sign posted by a jug of water, residents had lingering questions: Would filters really do enough to make the water safe? What about unfiltered showers? Could they rely on the water at work and at restaurants? And why had it taken so long for leaders to figure out that there was a problem?

“I don’t think people know what’s going on at all,” said Chris Thornton, 49, who described the first blast of water from his faucets some days as looking like urine, smelling like bleach and tasting of metal. After his wife, Ronda, 50, felt sick to her stomach for months, the Thorntons began buying jugs of bottled water, though the price — on top of an already steep water bill — has been overwhelming.

“As far as my family,” Ronda Thornton said, “we’ve just given up on the city’s water.”

Flint's water problems are tied inextricably to its fiscal woes. In 1960, nearly 200,000 people lived here. But auto plants closed, and the population has dropped by half. By 2011, Flint's shrunken tax base and seemingly intractable budget problems prompted Mr. Snyder to appoint an emergency manager for the city. Over the next four years, the city had four managers overseeing operations. Along the way, the city switched its water supply.

For decades, the city bought water from Detroit, which treated water from Lake Huron, then piped it here, 70 miles to the northwest. But with the costs mounting, Flint's leaders decided they could save millions by joining a new regional authority that would draw and treat its own water from Lake Huron.

There was one complication: Flint needed an alternative water supply from April 2014 until the new regional system is ready, probably next year. In the interim, Flint switched to using water from the Flint River, which state officials say had been a backup source in the past.

Ask residents about the Flint River, and many of them roll their eyes. They say it was once as a dumping ground for car parts, grocery carts and refrigerators. There have been significant improvements and intensive restoration campaigns in recent years, though a Flint River Fest set for Friday has been postponed, organizers said, given the "current drinking water crisis."

Even now, state officials say that treated Flint River water is safe and capable of meeting state and federal standards. Officials say the problem may be that some of the aging pipes and service lines that carry water into Flint's homes and businesses contain lead and are being corroded by water. The water Flint used to receive from Detroit was treated with chemicals intended to prevent such corrosion.

For months, questions about lead and other risks multiplied. "Everyone kept saying: 'It's safe! It's safe! It's safe!' " recalled Melissa Mays, a Flint resident who says she was sickened by the water and has helped organize residents over the issue.

Then in September, a researcher from Virginia Tech released findings from the water in hundreds of Flint homes showing elevated lead levels. Blood tests released by a local pediatrician — and corroborated last week by state officials analyzing their own testing — showed an increase in lead levels in children in some neighborhoods since 2014, when the city began drawing water from the river.

“We all have a concern about Flint’s drinking water in terms of what we’re seeing in terms of lead,” Mr. Snyder said last week.

Mr. Walling said that the move to river water occurred when an emergency manager controlled the city, though the City Council did vote for the city’s plans for a new, regional water system. He acknowledged supporting the move in a state of the city address, but said that he had not been given sufficient information about the safety risks.

“I had to work with what I knew at the time,” Mr. Walling, who is up for election next month, said in an interview.

But for many residents, the authorities failed the city by taking so long to react. “Anytime you have to weigh money against the health and welfare of people, it always has to be the health and welfare you go with,” said the Rev. Alfred Harris, a local pastor who has stopped conducting baptisms at his church because of concerns about the water. “We’ve been talking about this for the last 14 months, and they did not give a sincere ear to any of us. Shame on you!”

LeeAnne Walters said her son, Gavin, 4, who has immune system issues, had suffered direct consequences. After the switch to river water, which sometimes looked brown in their house, Gavin dropped to 27 pounds, far below the weight of his twin brother, she said. He sometimes seemed unable to pronounce words he knew, she said, and then test results showed an elevated lead level in his blood.

“He is going to deal with the side effects of this for the rest of his life,” Ms. Walters said. “I don’t think there’s a word angry enough to describe my anger. I trusted the city, and I helped the city poison my kid. Who thought this could happen in the United States?”

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http://www.freep.com/story/opinion/columnists/nancy-kaffer/2015/10/07/flint-water-crisis/73534078/

Waiting for answers, action in Flint water crisis

By Nancy Kaffer, Detroit Free Press Columnist 10:27 p.m. EDT October 7, 2015

They are still waiting for answers about the water in Flint.

And it's hard to say when, or if, those answers are coming.

It has been two weeks since a hospital researcher found that more Flint kids had been lead poisoned since the city switched its municipal water supply. And it has been nearly a week since the State of Michigan abruptly changed its posture, acknowledging, after months of denial and empty assurances, that Flint's water supply was compromised.

Since then, a lot of folks have worked diligently to sort out how things went so badly wrong in this small, impoverished city, and what the State of Michigan is doing to fix it.

But solutions remain elusive.

The state announced Friday that it has devoted $1 million to provide water filters for Flint residents, is expanding water testing and expediting improved water treatment. But two weeks on, Flint hasn't started adding chemicals to its water that would allow it to pass safely through the city's lead service pipes. That plan can likely be ready within a week, and can be enacted as soon as it's approved by the Michigan Department of

Environmental Quality. Scientists say it would take roughly a month before those chemicals would begin to effect Flint's drinking water.

That would be the right play, unless the city opts to rejoin the Detroit Water and Sewerage Department -- as water experts have recommended -- a decision that would likely require financial assistance from the State of Michigan but could result in potable water flowing from Flint taps within two weeks. Is it likely to happen? Your guess is as good as mine.

And state officials continue to insist that the rules designed to monitor water systems, to ensure safe drinking water, worked as they're supposed to.

Kids in danger

The effects of lead on children are irreversible. Lead-poisoned kids can experience a host of behavioral and developmental problems, and in two Flint ZIP codes, the percentage of children affected by lead has doubled, reversing a long trend of improving rates.

That's because in 2014, Flint decided to pump untreated water from the Flint River, ending a decades-long relationship with the Detroit Water and Sewerage Department, while a new regional water authority it's joining is under construction. Since then, Flint's been treating its water locally, prompting a rash of problems related to coliform bacteria, a disinfectant and its byproduct, and now, elevated lead.

Both of these decisions were made while Flint was under state oversight, during the appointments of a series of emergency managers appointed by and answerable to Gov. Rick Snyder. The Michigan Department of Environmental Quality, whose director is appointed by the governor, must ensure that water systems are producing safe drinking water. Because Flint's water decisions were made under Snyder's emergency managers, the governor's decision-making authority is one step closer to Flint's water crisis.

The water Flint bought from Detroit was "finished," in other words, safe for humans to drink, but also treated to create a film inside those pipes that kept the lead out. That's called "corrosion control," and Detroit achieved this goal by adding phosphates to the water it pumps from Lake Huron.

Flint doesn't.

It took an unreasonably long time to get a solid answer to this question.

Corrosion control

Since April 2014, treatment at Flint's plant has included adding lime to the water it distributed to customers, largely to make the water less acidic, Liane Shekter Smith, chief of the MDEQ's office of drinking water and municipal assistance, said Tuesday.

"There was no corrosion control plan put forward at the time of the switch," Shekter Smith said. "There was a belief that (acidity) adjustment would provide adequate corrosion control, and that rounds of testing would confirm or refute that."

Any new water supply must be tested at six-month intervals to determine whether it meets the guidelines of the federal lead and copper rule, a standard established by the U.S. Environmental Protection Agency.

Tests of Flint's drinking water showed roughly 6 parts per billion (how the presence of lead in water is reckoned) in water sampled between June and December of 2014, said MDEQ spokesman Brad Wurfel. The U.S. Centers for Disease Control and Prevention said there is no acceptable level of lead exposure, but 6 ppb would, in some cases, fall below the EPA's actionable level of 15 ppb.

But because the community Flint serves is so large, it must meet a different threshold, 5 ppb. If a second round of testing showed that lead levels continued to exceed it, Flint would be required to improve its method of corrosion control.

Water sampled between January and June of 2015 showed an alarming increase: lead levels had risen to 11 ppb.

That kind of testing, Shekter Smith said, is the most reliable way to determine whether corrosion control is working.

"Having it in place is best way to know what is happening out in the system," she said.

Given the elevated blood-lead levels in Flint kids, the damage lead can cause, and the permanence of that damage, is that enough?

"I think that we are following the protocol," she said, "and the protocol got us to the right place, and we're making the right decisions."

“It did?" said Erik Olson, a senior strategy director for the Washington, D.C.-based Natural Resources Defense Council. "It didn’t sound like it."

Because the composition of water varies so greatly, there's no one right way to do corrosion control, Olson said. But Flint's plan to use lime only should have prompted questions before switching to Flint River water.

"They definitely should have said, 'OK, what’s the basis of that decision? What’s your engineering study that shows that that’s optimizing your corrosion control?' " Olson said.

That Flint's river water would pass through pipes with lead components shouldn't have been surprising, Olson said -- the presence of lead in the water and sewage infrastructure is well-documented, and well-known.

So why didn't Flint's engineers account for that, when developing a treatment plan? That's just one of the questions I still can't answer.

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http://www.detroitnews.com/story/news/local/michigan/2015/10/08/flint-health-experts-support-detroit-water-reconnection/73568654/

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Uber, others join in efforts to pour clean water into Flint

By Jiquanda Johnson | jjohns16@mlive.com The Flint Journal Follow on Twitter on October 08, 2015 at 5:00 AM, updated October 08, 2015 at 5:06 AM

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The Flint Journal will do updates as more donor names are provided. If anyone has donor information make a note of it in the comments section of this post, or email The Flint Journal at flnews@mlive.com.

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http://michronicleonline.com/2015/10/07/flint-water-crisis-a-bitter-indictment-of-dysfunctional-emergency-manager/

Flint water crisis a bitter indictment of dysfunctional emergency manager

By Curt Guyette, Special to The Michigan Chronicle

Stark evidence of how terribly bad things can go when democracy is dismantled can be found in the elevated levels of lead in the children of Flint.

Because of decisions made by an appointed emergency manager, the tragically high costs of trying to balance a budget by switching to an unsafe water source will be borne by kids now forced to struggle with lower IQs, behavioral problems, learning disabilities, and a host of other ill effects.

This is what can happen when people are denied full access to representative government; they get poisoned by appointees with no connection to the community. Under Michigan's emergency manager law – PA 436 — gubernatorial appointees can leave town claiming to have successfully solved a fiscal crisis when in fact what they leave in their wake is a catastrophe of monumental proportions.

In recent days, as the lead problems in Flint have made international news, former Flint emergency manager Darnell Earley – the man in charge when the switch to the Flint River was made, and who is now overseeing the education of the children in Detroit Public Schools – has tried to deny any responsibility for the catastrophe.

According to the Detroit Free Press, Earley claimed in an e-mailed statement "that he was not involved in the decision to use river water."

The governor's office and Earley can rightfully claim that the Flint mayor and City Council initially gave their blessing to the switch made 18 months ago. But that fig leaf provides little real cover for the state officials now trying to run away from their disastrous decision.

For starters, it doesn't matter what the mayor and City Council had to say when the decision was made. The emergency manager, under the sweeping powers granted under Public Act 436, had complete authority to make the switch regardless of what Flint's elected officials wanted.

Moreover, those officials were in essence working for the emergency manager, not the people who elected them. The EM decided how much pay the mayor and council members drew, and how much power they could wield.

How do things go when appointed officials try to buck the control of an EM? As we've seen in Benton Harbor and Detroit Public Schools, the answer is that they get denuded of all power and are completely marginalized.

The message to elected officials under state control has been made perfectly clear: play ball with the EM, or else.

But there is another problem with the EM law as well, one made painfully obvious in Flint. In a normally-functioning democracy, when it came time for a city of Flint to conduct tests to show it is in compliance with federal drinking water regulations, the city would be an independent actor with the Michigan Department of Environmental Quality (MDEQ) serving as a separate check on the system, another independent actor providing oversight to make sure the job is done correctly.

Instead, with Governor Rick Snyder's man being the one in charge when the decision was made to start using river water – a decision that was almost instantly revealed to be fraught with problems – the MDEQ, instead of being a watchdog protecting the citizens of Flint, served as a collaborator, working with the city to do everything in their power to skew results so that their tests would make it appear that the water was safe when it wasn't.

How do we know it wasn't safe? Because grassroots citizen groups worked with researchers at Virginia Tech and the ACLU of Michigan to conduct an independent test of nearly 300 city homes and found that the problem was far worse than the city and state claimed.

When those results were released in mid-September, the response by the state was to try and discredit them. The same was true a week later, when a Hurley Children's Hospital study found the number of children with elevated lead levels doubled after the switch to the Flint River was made.

Those two studies, and the host of problems with the state and city's water testing, last week prompted the ACLU of Michigan, the Natural Resources Defense Council, and an array of civic groups to file a petition with the U.S. EPA, calling upon the federal government to come in and provide the oversight necessary to ensure Flint's water is clean and safe.

Finally, after the state's own data confirmed those findings, and Genesee County officials took the drastic step of declaring a public health emergency, the governor and MDEQ were forced to finally admit the truth and started taking some action.

But even if those measures are enough – and they may well not be, failing as they do to require a switch back to the much cleaner and far less corrosive Detroit system – the damage already caused by this governor and his emergency managers is irreversible for the children who will struggle for the rest of their lives because of the decisions made while Flint was under state control and democracy was suspended.

Jeff Kelley
Director, Office of External Communications
U.S. EPA Region 5
ph: 312-353-1159

To: Hyde, Tinka[hyde.tinka@epa.gov]
Cc: Rowan, Anne[rowan.anne@epa.gov]
From: Kelley, Jeff
Sent: Thur 10/8/2015 1:45:15 PM
Subject: Draft updated Flint statement

Here's a first crack…

Last week's statement:

Actions that the State of Michigan and the City of Flint announced today are important steps to protect public health. The immediate steps being taken to implement corrosion control will reduce lead in drinking water, as required by the Safe Drinking Water Act. US EPA will continue to provide technical assistance to the State of Michigan and the City of Flint to support their joint effort.

Draft updated statement:

U.S. EPA supports the decision of the city of Flint to return to using Detroit water. This, and the other actions announced last week, are important steps to protect public health. Flint will benefit from the corrosion control treatment already implemented by Detroit, but more steps may be needed to reduce lead in drinking water, as required by the Safe Drinking Water Act. U.S. EPA will continue to provide technical assistance to the State of Michigan and the City of Flint to support their joint effort.

Jeff Kelley
Director, Office of External Communications
U.S. EPA Region 5
ph: 312-353-1159

From: Hedman, Susan
Sent: Thursday, October 08, 2015 8:27 AM
To: Kelley, Jeff; Rowan, Anne
Cc: Harrison, Melissa

Subject: Re: Flint clips for morning of Oct. 8

Please rework the statement in anticipation of an announcement that the state will provide funding for a return to Detroit water.

Sent from my iPhone

On Oct 8, 2015, at 9:11 AM, Kelley, Jeff <kelley.jeff@epa.gov> wrote:

> Note that Gov. Snyder is expected to make an announcement at 10 a.m. Eastern. The state will be livestreaming the announcement at http://1.usa.gov/1QapVxk
>
> •□□□□□□□□ Gov. Snyder says he'll make announcement on Flint water Thursday (Flint Journal)
>
> •□□□□□□□□ Governor plans 10 a.m. announcement on troubled Flint water system (Associated Press)
>
> •□□□□□□□□ Flint Officials Are No Longer Saying the Water Is Fine (New York Times)
>
> •□□□□□□□□ Waiting for answers, action in Flint water crisis (Detroit Free Press)
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> •□□□□□□□□ Flint health experts support Detroit water reconnection (Detroit News)
>
> •□□□□□□□□ Uber, others join in efforts to pour clean water into Flint (Flint Journal)
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> •□□□□□□□□ Flint water crisis a bitter indictment of dysfunctional emergency manager (Michigan Chronicle)
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> http://www.mlive.com/news/flint/index.ssf/2015/10/gov_snyder_says_hell_make_anno.html
>
> **Gov. Snyder says he'll make announcement on Flint water Thursday**

By Ron Fonger | rfonger1@mlive.com The Flint Journal on October 07, 2015 at 9:45 PM, updated October 08, 2015 at 8:08 AM

FLINT, MI -- Gov. Rick Snyder says on Twitter that he will make an announcement about Flint water at 10 a.m. Thursday.

The planned announcement comes less than 24 hours after Flint's Technical Advisory Committee recommended the city end its use of the Flint River as its water source.

Since making the switch from using pre-treated Lake Huron water from the city of Detroit to treating river water at its own plant in April 2014, Flint officials have struggled to maintain the quality and safety of water delivered to city residents.

Snyder's Twitter message says, "Watch live tomorrow at 10 a.m. as I make an announcement regarding Flint water" at mi.gov/SnyderLive.

The state's Web site says the governor will be joined by Flint Mayor Dayne Walling, other state officials, and Ridgway White of the Charles Stewart Mott Foundation.

High levels of lead in city water and in the blood of children and infants since the city changed its water source have triggered a public health emergency here, including the mass distribution of lead-clearing faucet filters and bottled water.

Researchers from Virginia Tech university say river water has proven to be far more corrosive than water from the Detroit Water and Sewerage Department, causing lead to leach into homes that have lead service lines.

Flint City Administrator Natasha Henderson said today, Oct. 7, that she believes the position of state officials has been shifting on continued use of the Flint River, a change that was made while Flint was being run by a state-appointed emergency manager.

"We're to the point that the state believes this is a public health emergency," Henderson told the City Council. "From what I see, the state is working very well with us."

The city administrator is among officials who have advocated for a return to buying water from the DWSD since a study was released last month by Hurley Medical Center's director of pediatric residency program.

The study showed the percentage of Flint infants and children with above average lead levels has nearly doubled citywide since the switch to river water, and has nearly tripled among children in "high risk" areas of lead exposure.

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http://www.macombdaily.com/general-news/20151008/governor-plans-10-am-announcement-on-troubled-flint-water-system

Governor plans 10 a.m. announcement on troubled Flint water system

FLINT (AP) — Gov. Rick Snyder plans an announcement about the water system in Flint, which is facing a public health emergency over lead in its water.

A posting on the state's website says Snyder on Thursday morning will be joined for the announcement by officials including Flint Mayor Dayne Walling, state Department of Environmental Quality Director Dan Wyant and state Department of Health and Human Services Director Nick Lyon.

The announcement comes a day after a committee of local experts in health, water and science recommended Flint reconnect to Detroit's water system while it awaits a new pipeline to Lake Huron.

Flint has a public health emergency due to corrosive water leaching lead from old pipes. State government and nonprofit groups are distributing filters and bottled water to Flint homes and schools.

Snyder's announcement can be viewed live at 10 a.m. Thursday, Oct. 8 by visiting http://1.usa.gov/1QapVxk

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http://www.nytimes.com/2015/10/08/us/reassurances-end-in-flint-after-months-of-concern.html

Flint Officials Are No Longer Saying the Water Is Fine

By MONICA DAVEY, New York Times, OCT. 7, 2015

FLINT, Mich. — All along, through months of complaints from residents of this city about the peculiar colors and odors they said were coming from their faucets, the overriding message from the authorities here was that the water would be just fine.

Yes, there had been a boil order when fecal coliform bacteria turned up in some neighborhoods last year. And yes, the extra chlorine that was pumped in to solve that problem seemed to create another one — increased levels of a different contaminant.

Still, the guidance from Flint officials about the temporary water supply they switched to in 2014 — partly to save money — sounded assuring. In a notice sent to residents in July, city officials declared: “This is not an emergency. If a situation arises where the water is no longer safe to drink, you will be notified within 24 hours.”

The soothing talk has vanished. In recent weeks, testing has shown increased levels of lead in the blood of some Flint children — and health officials pointed to the water as a possible source.

First, the city advised residents to run their water for five minutes before using it, to use only cold water for drinking and cooking, and to install lead-removing water filters. Then county officials issued an emergency advisory recommending that people not drink Flint’s water unless it is tested for lead or filtered.

And last Friday, after corroborating that lead levels had risen in some children, state officials called for the water to be tested at all Flint public schools and for stepped-up efforts to replace lead service lines; they also promised $1 million to provide filters.

Officials met here on Wednesday afternoon, and talks were underway, officials said, for additional solutions that could come as early as Thursday. Gov. Rick Snyder said on Twitter late Wednesday that he planned to make an announcement about the situation on Thursday morning.

Private groups have raced to donate bottled water to schools, where the water fountains are now shut off, as well as filters to families who cannot afford them. Saying “we’re just in a heck of a bind,” Robert J. Pickell, the Genesee County sheriff, began serving bottled water and food that need not be cooked in water to hundreds of inmates in the county jail. Some residents have begun washing their children and pets with bottled water.

And Flint’s mayor, Dayne Walling, who had attended a 2014 event to celebrate the switch to the new water supply, called for returning to the city’s old water supply and urged state officials to provide millions of dollars to help pay for it.

The contaminated water was just the latest blow to Flint, an economically battered city that has struggled for years with factory closings, job losses and population decline.

Along Saginaw Street downtown, where at least one business had an “un-leaded” sign posted by a jug of water, residents had lingering questions: Would filters really do enough to make the water safe? What about unfiltered showers? Could they rely on the water at work and at restaurants? And why had it taken so long for leaders to figure out that there was a problem?

“I don’t think people know what’s going on at all,” said Chris Thornton, 49, who described the first blast of water from his faucets some days as looking like urine, smelling like bleach and tasting of metal. After his wife, Ronda, 50, felt sick to her stomach for months, the Thorntons began buying jugs of bottled water, though the price — on top of an already steep water bill — has been overwhelming.

“As far as my family,” Ronda Thornton said, “we’ve just given up on the city’s water.”

Flint’s water problems are tied inextricably to its fiscal woes. In 1960, nearly 200,000 people lived here. But auto plants closed, and the population has dropped by half. By 2011, Flint’s shrunken tax base and seemingly intractable budget problems prompted Mr. Snyder to appoint an emergency manager for the city. Over the next four years, the city had four managers overseeing operations. Along the way, the city switched its water supply.

For decades, the city bought water from Detroit, which treated water from Lake Huron, then piped it here, 70 miles to the northwest. But with the costs mounting, Flint’s leaders decided they could save millions by joining a new regional authority that would draw and treat its own water from Lake Huron.

There was one complication: Flint needed an alternative water supply from April 2014 until the new regional system is ready, probably next year. In the interim, Flint switched to using water from the Flint River, which state officials say had been a backup source in the past.

Ask residents about the Flint River, and many of them roll their eyes. They say it was once as a dumping ground for car parts, grocery carts and refrigerators. There have been significant improvements and intensive restoration campaigns in recent years, though a Flint River Fest set for Friday has been postponed, organizers said, given the “current drinking water crisis.”

Even now, state officials say that treated Flint River water is safe and capable of meeting state and federal standards. Officials say the problem may be that some of the aging pipes and service lines that carry water into Flint’s homes and businesses contain lead and are being corroded by water. The water Flint used to receive from Detroit was treated with chemicals intended to prevent such corrosion.

For months, questions about lead and other risks multiplied. “Everyone kept saying: ‘It’s safe! It’s safe! It’s safe!’ ” recalled Melissa Mays, a Flint resident who says she was sickened by the water and has helped organize residents over the issue.

Then in September, a researcher from Virginia Tech released findings from the water in hundreds of Flint homes showing elevated lead levels. Blood tests released by a local pediatrician — and corroborated last week by state officials analyzing their own testing — showed an increase in lead levels in children in some neighborhoods since 2014, when the city began drawing water from the river.

“We all have a concern about Flint’s drinking water in terms of what we’re seeing in terms of lead,” Mr. Snyder said last week.

Mr. Walling said that the move to river water occurred when an emergency manager controlled the city, though the City Council did vote for the city’s plans for a new, regional water system. He acknowledged supporting the move in a state of the city address, but said that he had not been given sufficient information about the safety risks.

“I had to work with what I knew at the time,” Mr. Walling, who is up for election next month, said in an interview.

But for many residents, the authorities failed the city by taking so long to react. “Anytime you have to weigh money against the health and welfare of people, it always has to be the health and welfare you go with,” said the Rev. Alfred Harris, a local pastor who has stopped conducting baptisms at his church because of concerns about the water. “We’ve been talking about this for the last 14 months, and they did not give a sincere ear to any of us. Shame on you!”

LeeAnne Walters said her son, Gavin, 4, who has immune system issues, had suffered direct consequences. After the switch to river water, which sometimes looked brown in their house, Gavin dropped to 27 pounds, far below the weight of his twin brother, she said. He sometimes seemed unable to pronounce words he knew, she said, and then test results showed an elevated lead level in his blood.

“He is going to deal with the side effects of this for the rest of his life,” Ms. Walters said. “I don’t think there’s a word angry enough to describe my anger. I trusted the city, and I helped the city poison my kid. Who thought this could happen in the United States?”

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http://www.freep.com/story/opinion/columnists/nancy-kaffer/2015/10/07/flint-water-crisis/73534078/

Waiting for answers, action in Flint water crisis

By Nancy Kaffer, Detroit Free Press Columnist 10:27 p.m. EDT October 7, 2015

They are still waiting for answers about the water in Flint.

And it's hard to say when, or if, those answers are coming.

It has been two weeks since a hospital researcher found that more Flint kids had been lead poisoned since the city switched its municipal water supply. And it has been nearly a week since the State of Michigan abruptly changed its posture, acknowledging, after months of denial and empty assurances, that Flint's water supply was compromised.

Since then, a lot of folks have worked diligently to sort out how things went so badly wrong in this small, impoverished city, and what the State of Michigan is doing to fix it.

But solutions remain elusive.

The state announced Friday that it has devoted $1 million to provide water filters for Flint residents, is expanding water testing and expediting improved water treatment. But two weeks on, Flint hasn't started adding chemicals to its water that would allow it to pass safely through the city's lead service pipes. That plan can likely be ready within a week, and can be enacted as soon as it's approved by the Michigan Department of Environmental Quality. Scientists say it would take roughly a month before those chemicals would begin to effect Flint's drinking water.

That would be the right play, unless the city opts to rejoin the Detroit Water and Sewerage Department -- as water experts have recommended -- a decision that would likely require financial assistance from the State of Michigan but could result in potable water flowing from Flint taps within two weeks. Is it likely to happen? Your guess is as good as mine.

And state officials continue to insist that the rules designed to monitor water systems, to ensure safe drinking water, worked as they're supposed to.

Kids in danger

The effects of lead on children are irreversible. Lead-poisoned kids can experience a host of behavioral and developmental problems, and in two Flint ZIP codes, the percentage of children affected by lead has doubled, reversing a long trend of improving rates.

That's because in 2014, Flint decided to pump untreated water from the Flint River, ending a decades-long relationship with the Detroit Water and Sewerage Department, while a new regional water authority it's joining is under construction. Since then, Flint's been treating its water locally, prompting a rash of problems related to coliform bacteria, a disinfectant and its byproduct, and now, elevated lead.

Both of these decisions were made while Flint was under state oversight, during the appointments of a series of emergency managers appointed by and answerable to Gov. Rick Snyder. The Michigan Department of Environmental Quality, whose director is appointed by the governor, must ensure that water systems are producing safe drinking water. Because Flint's water decisions were made under Snyder's emergency managers, the governor's decision-making authority is one step closer to Flint's water crisis.

The water Flint bought from Detroit was "finished," in other words, safe for humans to drink, but also treated to create a film inside those pipes that kept the lead out. That's called "corrosion control," and Detroit achieved this goal by adding phosphates to the water it pumps from Lake Huron.

Flint doesn't.

It took an unreasonably long time to get a solid answer to this question.

Corrosion control

Since April 2014, treatment at Flint's plant has included adding lime to the water it distributed to customers, largely to make the water less acidic, Liane Shekter Smith, chief of the MDEQ's office of drinking water and municipal assistance, said Tuesday.

"There was no corrosion control plan put forward at the time of the switch," Shekter Smith said. "There was a belief that (acidity) adjustment would provide adequate corrosion control, and that rounds of testing would confirm or refute that."

Any new water supply must be tested at six-month intervals to determine whether it meets the guidelines of the federal lead and copper rule, a standard established by the U.S. Environmental Protection Agency.

Tests of Flint's drinking water showed roughly 6 parts per billion (how the presence of lead in water is reckoned) in water sampled between June and December of 2014, said MDEQ spokesman Brad Wurfel. The U.S. Centers for Disease Control and Prevention said there is no acceptable level of lead exposure, but 6 ppb would, in some cases, fall below the EPA's actionable level of 15 ppb.

But because the community Flint serves is so large, it must meet a different threshold, 5 ppb. If a second round of testing showed that lead levels continued to exceed it, Flint would be required to improve its method of corrosion control.

Water sampled between January and June of 2015 showed an alarming increase: lead levels had risen to 11 ppb.

That kind of testing, Shekter Smith said, is the most reliable way to determine whether corrosion control is working.

"Having it in place is best way to know what is happening out in the system," she said.

Given the elevated blood-lead levels in Flint kids, the damage lead can cause, and the permanence of that damage, is that enough?

"I think that we are following the protocol," she said, "and the protocol got us to the right place, and we're making the right decisions."

“It did?" said Erik Olson, a senior strategy director for the Washington, D.C.-based Natural Resources Defense Council. "It didn’t sound like it."

Because the composition of water varies so greatly, there's no one right way to do corrosion control, Olson said. But Flint's plan to use lime only should have prompted questions before switching to Flint River water.

"They definitely should have said, 'OK, what’s the basis of that decision? What’s your engineering study that shows that that’s optimizing your corrosion control?' " Olson said.

That Flint's river water would pass through pipes with lead components shouldn't have been surprising, Olson said -- the presence of lead in the water and sewage infrastructure is well-documented, and well-known.

So why didn't Flint's engineers account for that, when developing a treatment plan? That's just one of the questions I still can't answer.

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http://www.detroitnews.com/story/news/local/michigan/2015/10/08/flint-health-experts-support-detroit-water-reconnection/73568654/

Flint health experts support Detroit water reconnection

Detroit News Staff and wire reports 7:58 a.m. EDT October 8, 2015

Flint — A committee of local experts in health, water and science has recommended that Flint reconnect to Detroit's water system.

Flint administrator Natasha Henderson urged the committee to not think about cost and decide "what's in the best interest" for Flint, which has a water crisis due to elevated levels of lead in children.

The Technical Advisory Committee met Wednesday. It rarely meets, but state officials say it will have a role in Flint's water quality. The committee has no formal role in deciding whether Flint stops using the Flint River for water.

Flint has a public health emergency due to corrosive water leaching lead from old pipes. A Virginia Tech researcher says there would be dramatic reductions in about a month if the Detroit water system is used.

Gov. Rick Snyder's administration last week said it was considering temporarily reconnecting Flint to Detroit's water system temporarily in a bid to tackle the ongoing water quality and lead issues. The state also planned to expedite construction of a new water line to Lake Huron so a planned water authority that would service Flint could operate as soon as possible. An announcement on the Flint water plan was expected Thursday.

Sara Wurfel, a spokeswoman for Snyder, said the recommendation Wednesday "is an option we're helping thoroughly review and consider with the city, and the technical advisory committee's work is much appreciated in this matter. We're also focused on working hard in collaboration with all and implementing the key action steps outlined on Oct. 2 to help protect public health and ensure safe, accessible drinking water for Flint residents."

Since 2014, the Genesee County city has drawn its drinking water from the Flint River, which has led to major problems for residents.

Last month, the city issued an advisory about its drinking water after concerns surfaced about lead contamination.

On Tuesday, Snyder's administration made free water filters available for residents.

Meanwhile, Uber drivers began collecting donations of bottled water for Flint schools. And Mayor Dayne Walling this week said he gave to Flint Community Schools some 19 palettes Kroger grocers donated.

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http://www.mlive.com/news/flint/index.ssf/2015/10/donors_show_support_by_giving.html

Uber, others join in efforts to pour clean water into Flint

By Jiquanda Johnson | jjohns16@mlive.com The Flint Journal Follow on Twitter on October 08, 2015 at 5:00 AM, updated October 08, 2015 at 5:06 AM

FLINT, MI -- Businesses, charities and individuals have donated thousands of bottles of water to city of Flint residents and students since last year after controversy erupted over the quality of the city's water. Here is a list of some of the donors.

- The United Way of Genesee County has actively participated in looking at ways to ease water woes in the city of Flint.

- ZeroWater partnered with United Way and Flint Community Schools early October to bring water filters to the school district as a solution instead of having students drink bottled water.

- Uber announced on Oct. 6 that drivers in Detroit will pick up donated bottles of water to bring to Flint throughout the week. People in Detroit just have to use their Uber link to notify drivers that water needs to be picked up. The initiative runs from 2 to 7 p.m. from Oct. 6 - 8.

- There was another donation of more than 4,000 gallons of bottled water through the Flint Diaper Bank and United Way of Genesee County on Oct. 7.

- Donations came in from Flint-area Home Depots and Sam's Club after Hurley Medical Center doctors revealed that lead levels in children in Flint had elevated after the city switched from Detroit's water source to the Flint River.

- Mott Community College issued an Oct. 7 media release saying they are donating bottled water to Pierce Elementary School on the city's north side on Oct. 8.

- Swan Valley High School in Saginaw is collecting bottled water to send to Flint Public Schools. The bottled water drive ends Oct. 9 and school officials are hoping to drop donations off to Flint Community Schools on Oct. 9.

- Bendle High School sophomore Chase Harrison raised money to purchase bottled water for Flint Community Schools.

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The Flint Journal will do updates as more donor names are provided. If anyone has donor information make a note of it in the comments section of this post, or email The Flint Journal at flnews@mlive.com.

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http://michronicleonline.com/2015/10/07/flint-water-crisis-a-bitter-indictment-of-dysfunctional-emergency-manager/

Flint water crisis a bitter indictment of dysfunctional emergency manager

By Curt Guyette, Special to The Michigan Chronicle

Stark evidence of how terribly bad things can go when democracy is dismantled can be found in the elevated levels of lead in the children of Flint.

Because of decisions made by an appointed emergency manager, the tragically high costs of trying to balance a budget by switching to an unsafe water source will be borne by kids now forced to struggle with lower IQs, behavioral problems, learning disabilities, and a host of other ill effects.

This is what can happen when people are denied full access to representative government; they get poisoned by appointees with no connection to the community. Under Michigan's emergency manager law – PA 436 — gubernatorial appointees can leave town claiming to have successfully solved a fiscal crisis when in fact what they leave in their wake is a catastrophe of monumental proportions.

In recent days, as the lead problems in Flint have made international news, former Flint emergency manager Darnell Earley – the man in charge when the switch to the Flint River was made, and who is now overseeing the education of the children in Detroit Public Schools – has tried to deny any responsibility for the catastrophe.

According to the Detroit Free Press, Earley claimed in an e-mailed statement "that he was not involved in the decision to use river water."

The governor's office and Earley can rightfully claim that the Flint mayor and City Council initially gave their blessing to the switch made 18 months ago. But that fig leaf provides little real cover for the state officials now trying to run away from their disastrous decision.

For starters, it doesn't matter what the mayor and City Council had to say when the decision was made. The emergency manager, under the sweeping powers granted under Public Act 436, had complete authority to make the switch regardless of what Flint's elected officials wanted.

Moreover, those officials were in essence working for the emergency manager, not the people who elected them. The EM decided how much pay the mayor and council members drew, and how much power they could wield.

How do things go when appointed officials try to buck the control of an EM? As we've seen in Benton Harbor and Detroit Public Schools, the answer is that they get denuded of all power and are completely marginalized.

The message to elected officials under state control has been made perfectly clear: play ball with the EM, or else.

But there is another problem with the EM law as well, one made painfully obvious in Flint. In a normally-functioning democracy, when it came time for a city of Flint to conduct tests to show it is in compliance with federal drinking water regulations, the city would be an independent actor with the Michigan Department of Environmental Quality (MDEQ) serving as a separate check on the system, another independent actor providing oversight to make sure the job is done correctly.

Instead, with Governor Rick Snyder's man being the one in charge when the decision was made to start using river water – a decision that was almost instantly revealed to be fraught with problems – the MDEQ, instead of being a watchdog protecting the citizens of Flint, served as a collaborator, working with the city to do everything in their power to skew results so that their tests would make it appear that the water was safe when it wasn't.

How do we know it wasn't safe? Because grassroots citizen groups worked with researchers at Virginia Tech and the ACLU of Michigan to conduct an independent test of nearly 300 city homes and found that the problem was far worse than the city and state claimed.

When those results were released in mid-September, the response by the state was to try and discredit them. The same was true a week later, when a Hurley Children's Hospital study found the number of children with elevated lead levels doubled after the switch to the Flint River was made.

Those two studies, and the host of problems with the state and city's water testing, last week prompted the ACLU of Michigan, the Natural Resources Defense Council, and an array of civic groups to file a petition with the U.S. EPA, calling upon the federal government to come in and provide the oversight necessary to ensure Flint's water is clean and safe.

Finally, after the state's own data confirmed those findings, and Genesee County officials took the drastic step of declaring a public health emergency, the governor and MDEQ were forced to finally admit the truth and started taking some action.

But even if those measures are enough – and they may well not be, failing as they do to require a switch back to the much cleaner and far less corrosive Detroit system – the damage already caused by this governor and his emergency managers is irreversible for the children who will struggle for the rest of their lives because of the decisions made while Flint was under state control and democracy was suspended.

Jeff Kelley
Director, Office of External Communications
U.S. EPA Region 5
ph: 312-353-1159

To: Kelley, Jeff[kelley.jeff@epa.gov]
Cc: Rowan, Anne[rowan.anne@epa.gov]
From: Hyde, Tinka
Sent: Thur 10/8/2015 2:02:02 PM
Subject: RE: Draft updated Flint statement

See my suggestions below

From: Kelley, Jeff
Sent: Thursday, October 08, 2015 8:45 AM
To: Hyde, Tinka
Cc: Rowan, Anne
Subject: Draft updated Flint statement

Here's a first crack…

Last week's statement:

Actions that the State of Michigan and the City of Flint announced today are important steps to protect public health. The immediate steps being taken to implement corrosion control will reduce lead in drinking water, as required by the Safe Drinking Water Act. US EPA will continue to provide technical assistance to the State of Michigan and the City of Flint to support their joint effort.

Draft updated statement:

U.S. EPA supports the decision of the city of Flint to return to using Detroit water. This, and the other actions announced last week, are important steps to protect public health. Over time, Flint will benefit from the corrosion control treatment already implemented by Detroit, as required by the Safe Drinking Water Act. However, in the near-term continued efforts to reduce lead in drinking water may be needed. U.S. EPA will continue to provide technical assistance to the State of Michigan and the City of Flint to support their joint effort.

U.S. EPA supports the decision of the city of Flint to return to using Detroit water. This, and the other actions announced last week, are important steps to protect public health. Flint will benefit from the corrosion control treatment already implemented by Detroit, but more steps may be needed to reduce lead in drinking water, as required by the Safe Drinking Water Act. U.S. EPA will continue to provide technical assistance to the State of Michigan and the City of Flint to support their joint effort.

Jeff Kelley
Director, Office of External Communications
U.S. EPA Region 5
ph: 312-353-1159

From: Hedman, Susan
Sent: Thursday, October 08, 2015 8:27 AM
To: Kelley, Jeff; Rowan, Anne
Cc: Harrison, Melissa
Subject: Re: Flint clips for morning of Oct. 8

Please rework the statement in anticipation of an announcement that the state will provide funding for a return to Detroit water.

Sent from my iPhone

On Oct 8, 2015, at 9:11 AM, Kelley, Jeff <kelley.jeff@epa.gov> wrote:

> Note that Gov. Snyder is expected to make an announcement at 10 a.m. Eastern. The state will be livestreaming the announcement at http://1.usa.gov/1QapVxk
>
> •□□□□□□□□ Gov. Snyder says he'll make announcement on Flint water Thursday (Flint Journal)

•□□□□□□□□ Governor plans 10 a.m. announcement on troubled Flint water system (Associated Press)

•□□□□□□□□ Flint Officials Are No Longer Saying the Water Is Fine (New York Times)

•□□□□□□□□ Waiting for answers, action in Flint water crisis (Detroit Free Press)

•□□□□□□□□ Flint health experts support Detroit water reconnection (Detroit News)

•□□□□□□□□ Uber, others join in efforts to pour clean water into Flint (Flint Journal)

•□□□□□□□□ Flint water crisis a bitter indictment of dysfunctional emergency manager (Michigan Chronicle)

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http://www.mlive.com/news/flint/index.ssf/2015/10/gov_snyder_says_hell_make_anno.html

Gov. Snyder says he'll make announcement on Flint water Thursday

By Ron Fonger | rfonger1@mlive.com The Flint Journal on October 07, 2015 at 9:45 PM, updated October 08, 2015 at 8:08 AM

FLINT, MI -- Gov. Rick Snyder says on Twitter that he will make an announcement about Flint water at 10 a.m. Thursday.

The planned announcement comes less than 24 hours after Flint's Technical Advisory Committee recommended the city end its use of the Flint River as its water source.

Since making the switch from using pre-treated Lake Huron water from the city of

Detroit to treating river water at its own plant in April 2014, Flint officials have struggled to maintain the quality and safety of water delivered to city residents.

Snyder's Twitter message says, "Watch live tomorrow at 10 a.m. as I make an announcement regarding Flint water" at mi.gov/SnyderLive.

The state's Web site says the governor will be joined by Flint Mayor Dayne Walling, other state officials, and Ridgway White of the Charles Stewart Mott Foundation.

High levels of lead in city water and in the blood of children and infants since the city changed its water source have triggered a public health emergency here, including the mass distribution of lead-clearing faucet filters and bottled water.

Researchers from Virginia Tech university say river water has proven to be far more corrosive than water from the Detroit Water and Sewerage Department, causing lead to leach into homes that have lead service lines.

Flint City Administrator Natasha Henderson said today, Oct. 7, that she believes the position of state officials has been shifting on continued use of the Flint River, a change that was made while Flint was being run by a state-appointed emergency manager.

"We're to the point that the state believes this is a public health emergency," Henderson told the City Council. "From what I see, the state is working very well with us."

The city administrator is among officials who have advocated for a return to buying water from the DWSD since a study was released last month by Hurley Medical Center's director of pediatric residency program.

The study showed the percentage of Flint infants and children with above average lead levels has nearly doubled citywide since the switch to river water, and has nearly tripled among children in "high risk" areas of lead exposure.

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http://www.macombdaily.com/general-news/20151008/governor-plans-10-am-announcement-on-troubled-flint-water-system

Governor plans 10 a.m. announcement on troubled Flint water system

FLINT (AP) — Gov. Rick Snyder plans an announcement about the water system in Flint, which is facing a public health emergency over lead in its water.

A posting on the state's website says Snyder on Thursday morning will be joined for the announcement by officials including Flint Mayor Dayne Walling, state Department of Environmental Quality Director Dan Wyant and state Department of Health and Human Services Director Nick Lyon.

The announcement comes a day after a committee of local experts in health, water and science recommended Flint reconnect to Detroit's water system while it awaits a new pipeline to Lake Huron.

Flint has a public health emergency due to corrosive water leaching lead from old pipes. State government and nonprofit groups are distributing filters and bottled water to Flint homes and schools.

Snyder's announcement can be viewed live at 10 a.m. Thursday, Oct. 8 by visiting http://1.usa.gov/1QapVxk

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http://www.nytimes.com/2015/10/08/us/reassurances-end-in-flint-after-months-of-concern.html

Flint Officials Are No Longer Saying the Water Is Fine

By MONICA DAVEY, New York Times, OCT. 7, 2015

FLINT, Mich. — All along, through months of complaints from residents of this city about the peculiar colors and odors they said were coming from their faucets, the overriding message from the authorities here was that the water would be just fine.

Yes, there had been a boil order when fecal coliform bacteria turned up in some neighborhoods last year. And yes, the extra chlorine that was pumped in to solve that problem seemed to create another one — increased levels of a different contaminant.

Still, the guidance from Flint officials about the temporary water supply they switched to in 2014 — partly to save money — sounded assuring. In a notice sent to residents in July, city officials declared: “This is not an emergency. If a situation arises where the water is no longer safe to drink, you will be notified within 24 hours.”

The soothing talk has vanished. In recent weeks, testing has shown increased levels of lead in the blood of some Flint children — and health officials pointed to the water as a possible source.

First, the city advised residents to run their water for five minutes before using it, to use only cold water for drinking and cooking, and to install lead-removing water filters. Then county officials issued an emergency advisory recommending that people not drink Flint’s water unless it is tested for lead or filtered.

And last Friday, after corroborating that lead levels had risen in some children, state officials called for the water to be tested at all Flint public schools and for stepped-up efforts to replace lead service lines; they also promised $1 million to provide filters.

Officials met here on Wednesday afternoon, and talks were underway, officials said, for additional solutions that could come as early as Thursday. Gov. Rick Snyder said on Twitter late Wednesday that he planned to make an announcement about the situation on Thursday morning.

Private groups have raced to donate bottled water to schools, where the water fountains are now shut off, as well as filters to families who cannot afford them. Saying “we’re just in a heck of a bind,” Robert J. Pickell, the Genesee County sheriff, began serving bottled water and food that need not be cooked in water to hundreds of inmates in the county jail. Some residents have begun washing their children and pets with bottled water.

And Flint’s mayor, Dayne Walling, who had attended a 2014 event to celebrate the switch to the new water supply, called for returning to the city’s old water supply and urged state officials to provide millions of dollars to help pay for it.

The contaminated water was just the latest blow to Flint, an economically battered city that has struggled for years with factory closings, job losses and population decline.

Along Saginaw Street downtown, where at least one business had an “un-leaded” sign posted by a jug of water, residents had lingering questions: Would filters really do enough to make the water safe? What about unfiltered showers? Could they rely on the water at work and at restaurants? And why had it taken so long for leaders to figure out that there was a problem?

“I don’t think people know what’s going on at all,” said Chris Thornton, 49, who described the first blast of water from his faucets some days as looking like urine, smelling like bleach and tasting of metal. After his wife, Ronda, 50, felt sick to her stomach for months, the Thorntons began buying jugs of bottled water, though the price — on top of an already steep water bill — has been overwhelming.

“As far as my family,” Ronda Thornton said, “we’ve just given up on the city’s water.”

Flint’s water problems are tied inextricably to its fiscal woes. In 1960, nearly 200,000 people lived here. But auto plants closed, and the population has dropped by half. By 2011, Flint’s shrunken tax base and seemingly intractable budget problems prompted Mr. Snyder to appoint an emergency manager for the city. Over the next four years, the city had four managers overseeing operations. Along the way, the city switched its water supply.

For decades, the city bought water from Detroit, which treated water from Lake Huron, then piped it here, 70 miles to the northwest. But with the costs mounting, Flint’s leaders decided they could save millions by joining a new regional authority that would draw and treat its own water from Lake Huron.

There was one complication: Flint needed an alternative water supply from April 2014 until the new regional system is ready, probably next year. In the interim, Flint switched to using water from the Flint River, which state officials say had been a backup source in the past.

Ask residents about the Flint River, and many of them roll their eyes. They say it was once as a dumping ground for car parts, grocery carts and refrigerators. There have been significant improvements and intensive restoration campaigns in recent years, though a Flint River Fest set for Friday has been postponed, organizers said, given the “current drinking water crisis.”

Even now, state officials say that treated Flint River water is safe and capable of meeting state and federal standards. Officials say the problem may be that some of the aging pipes and service lines that carry water into Flint's homes and businesses contain lead and are being corroded by water. The water Flint used to receive from Detroit was treated with chemicals intended to prevent such corrosion.

For months, questions about lead and other risks multiplied. “Everyone kept saying: ‘It's safe! It's safe! It's safe!’ ” recalled Melissa Mays, a Flint resident who says she was sickened by the water and has helped organize residents over the issue.

Then in September, a researcher from Virginia Tech released findings from the water in hundreds of Flint homes showing elevated lead levels. Blood tests released by a local pediatrician — and corroborated last week by state officials analyzing their own testing — showed an increase in lead levels in children in some neighborhoods since 2014, when the city began drawing water from the river.

“We all have a concern about Flint's drinking water in terms of what we're seeing in terms of lead,” Mr. Snyder said last week.

Mr. Walling said that the move to river water occurred when an emergency manager controlled the city, though the City Council did vote for the city's plans for a new, regional water system. He acknowledged supporting the move in a state of the city address, but said that he had not been given sufficient information about the safety risks.

“I had to work with what I knew at the time,” Mr. Walling, who is up for election next month, said in an interview.

But for many residents, the authorities failed the city by taking so long to react. “Anytime you have to weigh money against the health and welfare of people, it always has to be the health and welfare you go with,” said the Rev. Alfred Harris, a local pastor who has stopped conducting baptisms at his church because of concerns about the water. “We've been talking about this for the last 14 months, and they did not give a sincere ear to any of us. Shame on you!”

LeeAnne Walters said her son, Gavin, 4, who has immune system issues, had suffered direct consequences. After the switch to river water, which sometimes looked brown in their house, Gavin dropped to 27 pounds, far below the weight of his twin brother, she said. He sometimes seemed unable to pronounce words he knew, she said, and then test results showed an elevated lead level in his blood.

“He is going to deal with the side effects of this for the rest of his life,” Ms. Walters said. “I don’t think there’s a word angry enough to describe my anger. I trusted the city, and I helped the city poison my kid. Who thought this could happen in the United States?”

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http://www.freep.com/story/opinion/columnists/nancy-kaffer/2015/10/07/flint-water-crisis/73534078/

Waiting for answers, action in Flint water crisis

By Nancy Kaffer, Detroit Free Press Columnist 10:27 p.m. EDT October 7, 2015

They are still waiting for answers about the water in Flint.

And it's hard to say when, or if, those answers are coming.

It has been two weeks since a hospital researcher found that more Flint kids had been lead poisoned since the city switched its municipal water supply. And it has been nearly a week since the State of Michigan abruptly changed its posture, acknowledging, after months of denial and empty assurances, that Flint's water supply was compromised.

Since then, a lot of folks have worked diligently to sort out how things went so badly wrong in this small, impoverished city, and what the State of Michigan is doing to fix it.

But solutions remain elusive.

The state announced Friday that it has devoted $1 million to provide water filters for Flint residents, is expanding water testing and expediting improved water treatment. But two weeks on, Flint hasn't started adding chemicals to its water that would allow it to pass safely through the city's lead service pipes. That plan can likely be ready within a week, and can be enacted as soon as it's approved by the Michigan Department of Environmental Quality. Scientists say it would take roughly a month before those chemicals would begin to effect Flint's drinking water.

That would be the right play, unless the city opts to rejoin the Detroit Water and Sewerage Department -- as water experts have recommended -- a decision that would likely require financial assistance from the State of Michigan but could result in potable water flowing from Flint taps within two weeks. Is it likely to happen? Your guess is as good as mine.

And state officials continue to insist that the rules designed to monitor water systems, to ensure safe drinking water, worked as they're supposed to.

Kids in danger

The effects of lead on children are irreversible. Lead-poisoned kids can experience a host of behavioral and developmental problems, and in two Flint ZIP codes, the percentage of children affected by lead has doubled, reversing a long trend of improving rates.

That's because in 2014, Flint decided to pump untreated water from the Flint River, ending a decades-long relationship with the Detroit Water and Sewerage

Department, while a new regional water authority it's joining is under construction. Since then, Flint's been treating its water locally, prompting a rash of problems related to coliform bacteria, a disinfectant and its byproduct, and now, elevated lead.

Both of these decisions were made while Flint was under state oversight, during the appointments of a series of emergency managers appointed by and answerable to Gov. Rick Snyder. The Michigan Department of Environmental Quality, whose director is appointed by the governor, must ensure that water systems are producing safe drinking water. Because Flint's water decisions were made under Snyder's emergency managers, the governor's decision-making authority is one step closer to Flint's water crisis.

The water Flint bought from Detroit was "finished," in other words, safe for humans to drink, but also treated to create a film inside those pipes that kept the lead out. That's called "corrosion control," and Detroit achieved this goal by adding phosphates to the water it pumps from Lake Huron.

Flint doesn't.

It took an unreasonably long time to get a solid answer to this question.

Corrosion control

Since April 2014, treatment at Flint's plant has included adding lime to the water it distributed to customers, largely to make the water less acidic, Liane Shekter Smith, chief of the MDEQ's office of drinking water and municipal assistance, said Tuesday.

"There was no corrosion control plan put forward at the time of the switch," Shekter Smith said. "There was a belief that (acidity) adjustment would provide adequate corrosion control, and that rounds of testing would confirm or refute that."

Any new water supply must be tested at six-month intervals to determine whether it meets the guidelines of the federal lead and copper rule, a standard established by the U.S. Environmental Protection Agency.

Tests of Flint's drinking water showed roughly 6 parts per billion (how the presence of lead in water is reckoned) in water sampled between June and December of 2014, said MDEQ spokesman Brad Wurfel. The U.S. Centers for Disease Control and Prevention said there is no acceptable level of lead exposure, but 6 ppb would, in some cases, fall below the EPA's actionable level of 15 ppb.

But because the community Flint serves is so large, it must meet a different threshold, 5 ppb. If a second round of testing showed that lead levels continued to exceed it, Flint would be required to improve its method of corrosion control.

Water sampled between January and June of 2015 showed an alarming increase: lead levels had risen to 11 ppb.

That kind of testing, Shekter Smith said, is the most reliable way to determine whether corrosion control is working.

"Having it in place is best way to know what is happening out in the system," she said.

Given the elevated blood-lead levels in Flint kids, the damage lead can cause, and the permanence of that damage, is that enough?

"I think that we are following the protocol," she said, "and the protocol got us to the right place, and we're making the right decisions."

“It did?" said Erik Olson, a senior strategy director for the Washington, D.C.-based Natural Resources Defense Council. "It didn’t sound like it."

Because the composition of water varies so greatly, there's no one right way to do corrosion control, Olson said. But Flint's plan to use lime only should have prompted questions before switching to Flint River water.

"They definitely should have said, 'OK, what’s the basis of that decision? What’s your engineering study that shows that that’s optimizing your corrosion control?' " Olson said.

That Flint's river water would pass through pipes with lead components shouldn't have been surprising, Olson said -- the presence of lead in the water and sewage infrastructure is well-documented, and well-known.

So why didn't Flint's engineers account for that, when developing a treatment plan? That's just one of the questions I still can't answer.

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http://www.detroitnews.com/story/news/local/michigan/2015/10/08/flint-health-experts-support-detroit-water-reconnection/73568654/

Flint health experts support Detroit water reconnection

Detroit News Staff and wire reports 7:58 a.m. EDT October 8, 2015

Flint — A committee of local experts in health, water and science has recommended that Flint reconnect to Detroit’s water system.

Flint administrator Natasha Henderson urged the committee to not think about cost and decide “what’s in the best interest” for Flint, which has a water crisis due to elevated levels of lead in children.

The Technical Advisory Committee met Wednesday. It rarely meets, but state officials say it will have a role in Flint’s water quality. The committee has no formal role in deciding whether Flint stops using the Flint River for water.

Flint has a public health emergency due to corrosive water leaching lead from old pipes. A Virginia Tech researcher says there would be dramatic reductions in about a month if the Detroit water system is used.

Gov. Rick Snyder’s administration last week said it was considering temporarily reconnecting Flint to Detroit’s water system temporarily in a bid to tackle the ongoing water quality and lead issues. The state also planned to expedite construction of a new water line to Lake Huron so a planned water authority that would service Flint could operate as soon as possible. An announcement on the Flint water plan was expected Thursday.

Sara Wurfel, a spokeswoman for Snyder, said the recommendation Wednesday “is an option we’re helping thoroughly review and consider with the city, and the technical advisory committee’s work is much appreciated in this matter. We’re also focused on working hard in collaboration with all and implementing the key action steps outlined on Oct. 2 to help protect public health and ensure safe, accessible drinking water for Flint residents.”

Since 2014, the Genesee County city has drawn its drinking water from the Flint River, which has led to major problems for residents.

Last month, the city issued an advisory about its drinking water after concerns surfaced about lead contamination.

On Tuesday, Snyder's administration made free water filters available for residents.

Meanwhile, Uber drivers began collecting donations of bottled water for Flint schools. And Mayor Dayne Walling this week said he gave to Flint Community Schools some 19 palettes Kroger grocers donated.

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http://www.mlive.com/news/flint/index.ssf/2015/10/donors_show_support_by_giving.html

Uber, others join in efforts to pour clean water into Flint

By Jiquanda Johnson | jjohns16@mlive.com The Flint Journal Follow on Twitter on October 08, 2015 at 5:00 AM, updated October 08, 2015 at 5:06 AM

FLINT, MI -- Businesses, charities and individuals have donated thousands of bottles of water to city of Flint residents and students since last year after controversy erupted over the quality of the city's water. Here is a list of some of the donors.

•□□□□□□□□ The United Way of Genesee County has actively participated in looking at ways to ease water woes in the city of Flint.

•□□□□□□□□ ZeroWater partnered with United Way and Flint Community Schools early October to bring water filters to the school district as a solution instead of having students drink bottled water.

•□□□□□□□□ Uber announced on Oct. 6 that drivers in Detroit will pick up donated bottles of water to bring to Flint throughout the week. People in Detroit just have to use their Uber link to notify drivers that water needs to be picked up. The initiative runs from 2 to 7 p.m. from Oct. 6 - 8.

•□□□□□□□□ There was another donation of more than 4,000 gallons of bottled water through the Flint Diaper Bank and United Way of Genesee County on Oct. 7.

•□□□□□□□□ Donations came in from Flint-area Home Depots and Sam's Club after Hurley Medical Center doctors revealed that lead levels in children in Flint had elevated after the city switched from Detroit's water source to the Flint River.

•□□□□□□□□ Mott Community College issued an Oct. 7 media release saying they are donating bottled water to Pierce Elementary School on the city's north side on Oct. 8.

•□□□□□□□□ Swan Valley High School in Saginaw is collecting bottled water to send to Flint Public Schools. The bottled water drive ends Oct. 9 and school officials are hoping to drop donations off to Flint Community Schools on Oct. 9.

•□□□□□□□□ Bendle High School sophomore Chase Harrison raised money to purchase bottled water for Flint Community Schools.

•□□□□□□□□ Lavish Living, a Flint-based organization, has donated at least 200 cases of water to Flint Community Schools. As of Oct. 6 the organization was still working to collect more water for students.

•□□□□□□□□ The Flint Northwestern football team delivered an estimated 40 cases of water on Oct. 5 to Flint area residents between Dupont, Clio, Carpenter and Pierson roads.

•□□□□□□□□ General Motors Foundation

•□□□□□□□□ In January, Sargent Title Co. collected about 600 cases of water to donated to Flint residents.

•□□□□□□□□ Absopure Water Corp. donated a semi-truck worth of bottled water to Flint residents in January.

•□□□□□□□□ 1st Congregational United Church of Christ in Kalamazoo donated 4,000 bottles of water in September.

•□□□□□□□□ Al Serra Auto Plaza announced Oct. 7 that they will serve as drop off location for bottled water donations. If donors give 12 or more bottles of water, the dealership is offering free tire rotation.

•□□□□□□□□ In March, members of the Michigan National Action Network provided an estimated 10,000 bottles of water to Flint residents.

•□□□□□□□□ District leaders also expect at least 1,000 cases of bottled water to arrive at the Food Bank on Wednesday, Oct. 7, from the Saginaw Chippewa Indian Tribe and Soaring Eagle Waterpark and Hotel and Soaring Eagle Casino and Resort.

The Flint Journal will do updates as more donor names are provided. If anyone has donor information make a note of it in the comments section of this post, or email The Flint Journal at flnews@mlive.com.

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http://michronicleonline.com/2015/10/07/flint-water-crisis-a-bitter-indictment-of-dysfunctional-emergency-manager/

Flint water crisis a bitter indictment of dysfunctional emergency manager

By Curt Guyette, Special to The Michigan Chronicle

Stark evidence of how terribly bad things can go when democracy is dismantled can be found in the elevated levels of lead in the children of Flint.

Because of decisions made by an appointed emergency manager, the tragically high costs of trying to balance a budget by switching to an unsafe water source will be borne by kids now forced to struggle with lower IQs, behavioral problems, learning disabilities, and a host of other ill effects.

This is what can happen when people are denied full access to representative government; they get poisoned by appointees with no connection to the community. Under Michigan's emergency manager law – PA 436 — gubernatorial appointees can leave town claiming to have successfully solved a fiscal crisis when in fact what they leave in their wake is a catastrophe of monumental proportions.

In recent days, as the lead problems in Flint have made international news, former Flint emergency manager Darnell Earley – the man in charge when the switch to the Flint River was made, and who is now overseeing the education of the children in Detroit Public Schools – has tried to deny any responsibility for the catastrophe.

According to the Detroit Free Press, Earley claimed in an e-mailed statement "that he was not involved in the decision to use river water."

The governor's office and Earley can rightfully claim that the Flint mayor and City Council initially gave their blessing to the switch made 18 months ago. But that fig leaf provides little real cover for the state officials now trying to run away from their disastrous decision.

For starters, it doesn't matter what the mayor and City Council had to say when the decision was made. The emergency manager, under the sweeping powers granted under Public Act 436, had complete authority to make the switch regardless of what Flint's elected officials wanted.

Moreover, those officials were in essence working for the emergency manager, not the people who elected them. The EM decided how much pay the mayor and council members drew, and how much power they could wield.

How do things go when appointed officials try to buck the control of an EM? As we've seen in Benton Harbor and Detroit Public Schools, the answer is that they get denuded of all power and are completely marginalized.

The message to elected officials under state control has been made perfectly clear: play ball with the EM, or else.

But there is another problem with the EM law as well, one made painfully obvious in Flint. In a normally-functioning democracy, when it came time for a city of Flint to conduct tests to show it is in compliance with federal drinking water regulations, the city would be an independent actor with the Michigan Department of Environmental Quality (MDEQ) serving as a separate check on the system, another independent actor providing oversight to make sure the job is done correctly.

Instead, with Governor Rick Snyder's man being the one in charge when the decision was made to start using river water – a decision that was almost instantly revealed to be fraught with problems – the MDEQ, instead of being a watchdog protecting the citizens of Flint, served as a collaborator, working with the city to do everything in their power to skew results so that their tests would make it appear that the water was safe when it wasn't.

How do we know it wasn't safe? Because grassroots citizen groups worked with researchers at Virginia Tech and the ACLU of Michigan to conduct an independent test of nearly 300 city homes and found that the problem was far worse than the city and state claimed.

When those results were released in mid-September, the response by the state was to try and discredit them. The same was true a week later, when a Hurley Children's Hospital study found the number of children with elevated lead levels doubled after the switch to the Flint River was made.

Those two studies, and the host of problems with the state and city's water testing, last week prompted the ACLU of Michigan, the Natural Resources Defense Council, and an array of civic groups to file a petition with the U.S. EPA, calling upon the federal government to come in and provide the oversight necessary to ensure Flint's water is clean and safe.

Finally, after the state's own data confirmed those findings, and Genesee County officials took the drastic step of declaring a public health emergency, the governor and MDEQ were forced to finally admit the truth and started taking some action.

But even if those measures are enough – and they may well not be, failing as they do to require a switch back to the much cleaner and far less corrosive Detroit system – the damage already caused by this governor and his emergency managers is irreversible for the children who will struggle for the rest of their lives because of the decisions made while Flint was under state control and democracy was suspended.

Jeff Kelley
Director, Office of External Communications
U.S. EPA Region 5
ph: 312-353-1159

To: Hedman, Susan[hedman.susan@epa.gov]
Cc: Hyde, Tinka[hyde.tinka@epa.gov]; Rowan, Anne[rowan.anne@epa.gov]
From: Kelley, Jeff
Sent: Thur 10/8/2015 2:11:19 PM
Subject: Notes from Governor's Flint announcement

Rough notes from the first two speakers … more to come. DEQ up next.

Gov. Snyder:

- Thanking the Mott Foundation … follow up on what we did last week. Continuing to do last week's actions, but some additional action steps we're looking to tangibly take

- Tech advisory committee made a recommendation about switching to Great Lakes Water Authority / Detroit … "I'm in full support of a return to the GLWA" … I support the mayor in his desire to move in that direction

- We believe it will be better for public safety … some financial issues … about a $12 million incremental cost. Will recommend to legislature to provide $6 million toward that cost. Mott Foundation will kick in $4 million. Flint will find $2 million.

- <video froze>

- Asking for $4 million to continue with what was discussed last week … testing, water filters, people for analysis and work, including lead education

- U.S. EPA has been excellent to work with

Dayne Walling:

- City has decided to switch back to Detroit water … fastest way to protect public health and stabilize Flint's water system.

- City is already working diligently to make the reconnection … discussion around optimal corrosion control has already started

- Monday 2 p.m. press briefing

- EPA technical assistance will be involved from the beginning so best practices will be in place

•□□□□□□□□ Reconnecting to Detroit is a major step toward safe water, but rehab project will take more time and money. State and EPA working with city on immediate and long term steps.

•□□□□□□□□ Lead service lines need to be replaced

•□□□□□□□□ Important lessons from Flint's experience … need to look at state and federal water rules, etc.

Jeff Kelley
Director, Office of External Communications
U.S. EPA Region 5
ph: 312-353-1159

To: Henry, Timothy[henry.timothy@epa.gov]
From: Hyde, Tinka
Sent: Thur 10/8/2015 2:16:31 PM
Subject: Fwd: Flint clips for morning of Oct. 8

Gov announce shifting to back to Detroit.

Sent from my iPhone

Begin forwarded message:

From: "Kelley, Jeff" <kelley.jeff@epa.gov>
Date: October 8, 2015 at 8:11:27 AM CDT
To: "Hedman, Susan" <hedman.susan@epa.gov>, "Kaplan, Robert" <kaplan.robert@epa.gov>, "Hyde, Tinka" <hyde.tinka@epa.gov>
Cc: "Rowan, Anne" <rowan.anne@epa.gov>, "Cassell, Peter" <cassell.peter@epa.gov>, "Beckmann, Ronna Erin" <beckmann.ronna@epa.gov>, "Harrison, Melissa" <Harrison.Melissa@epa.gov>, "Abrams, Dan" <Abrams.Dan@epa.gov>, "Poy, Thomas" <poy.thomas@epa.gov>
Subject: Flint clips for morning of Oct. 8

Note that Gov. Snyder is expected to make an announcement at 10 a.m. Eastern. The state will be livestreaming the announcement at http://1.usa.gov/1QapVxk

•□□□□□□□□ Gov. Snyder says he'll make announcement on Flint water Thursday (Flint Journal)

•□□□□□□□□ Governor plans 10 a.m. announcement on troubled Flint water system (Associated Press)

•□□□□□□□□ Flint Officials Are No Longer Saying the Water Is Fine (New York Times)

•□□□□□□□□ Waiting for answers, action in Flint water crisis (Detroit Free Press)

•□□□□□□□□ Flint health experts support Detroit water reconnection (Detroit News)

•□□□□□□□□ Uber, others join in efforts to pour clean water into Flint (Flint Journal)

•□□□□□□□□ Flint water crisis a bitter indictment of dysfunctional emergency manager (Michigan Chronicle)

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http://www.mlive.com/news/flint/index.ssf/2015/10/gov_snyder_says_hell_make_anno.html

Gov. Snyder says he'll make announcement on Flint water Thursday

By Ron Fonger | rfonger1@mlive.com The Flint Journal on October 07, 2015 at 9:45 PM, updated October 08, 2015 at 8:08 AM

FLINT, MI -- Gov. Rick Snyder says on Twitter that he will make an announcement about Flint water at 10 a.m. Thursday.

The planned announcement comes less than 24 hours after Flint's Technical Advisory Committee recommended the city end its use of the Flint River as its water source.

Since making the switch from using pre-treated Lake Huron water from the city of Detroit to treating river water at its own plant in April 2014, Flint officials have struggled to maintain the quality and safety of water delivered to city residents.

Snyder's Twitter message says, "Watch live tomorrow at 10 a.m. as I make an announcement regarding Flint water" at mi.gov/SnyderLive.

The state's Web site says the governor will be joined by Flint Mayor Dayne Walling, other state officials, and Ridgway White of the Charles Stewart Mott Foundation.

High levels of lead in city water and in the blood of children and infants since the city changed its water source have triggered a public health emergency here, including the mass distribution of lead-clearing faucet filters and bottled water.

Researchers from Virginia Tech university say river water has proven to be far more corrosive than water from the Detroit Water and Sewerage Department, causing lead to leach into homes that have lead service lines.

Flint City Administrator Natasha Henderson said today, Oct. 7, that she believes the position of state officials has been shifting on continued use of the Flint River, a change that was made while Flint was being run by a state-appointed emergency manager.

"We're to the point that the state believes this is a public health emergency," Henderson told the City Council. "From what I see, the state is working very well with us."

The city administrator is among officials who have advocated for a return to buying water from the DWSD since a study was released last month by Hurley Medical Center's director of pediatric residency program.

The study showed the percentage of Flint infants and children with above average lead levels has nearly doubled citywide since the switch to river water, and has nearly tripled among children in "high risk" areas of lead exposure.

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http://www.macombdaily.com/general-news/20151008/governor-plans-10-am-announcement-on-troubled-flint-water-system

Governor plans 10 a.m. announcement on troubled Flint water system

FLINT (AP) — Gov. Rick Snyder plans an announcement about the water system in Flint, which is facing a public health emergency over lead in its water.

A posting on the state's website says Snyder on Thursday morning will be joined for the announcement by officials including Flint Mayor Dayne Walling, state Department of Environmental Quality Director Dan Wyant and state Department of Health and Human Services Director Nick Lyon.

The announcement comes a day after a committee of local experts in health, water and science recommended Flint reconnect to Detroit's water system while it awaits a new pipeline to Lake Huron.

Flint has a public health emergency due to corrosive water leaching lead from old pipes. State government and nonprofit groups are distributing filters and bottled water to Flint homes and schools.

Snyder's announcement can be viewed live at 10 a.m. Thursday, Oct. 8 by visiting http://1.usa.gov/1QapVxk

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http://www.nytimes.com/2015/10/08/us/reassurances-end-in-flint-after-months-of-concern.html

Flint Officials Are No Longer Saying the Water Is Fine

By MONICA DAVEY, New York Times, OCT. 7, 2015

FLINT, Mich. — All along, through months of complaints from residents of this city about the peculiar colors and odors they said were coming from their faucets, the overriding message from the authorities here was that the water would be just fine.

Yes, there had been a boil order when fecal coliform bacteria turned up in some neighborhoods last year. And yes, the extra chlorine that was pumped in to solve that problem seemed to create another one — increased levels of a different contaminant.

Still, the guidance from Flint officials about the temporary water supply they switched to in 2014 — partly to save money — sounded assuring. In a notice sent to residents in July, city officials declared: "This is not an emergency. If a situation arises where the water is no longer safe to drink, you will be notified within 24 hours."

The soothing talk has vanished. In recent weeks, testing has shown increased levels of lead in the blood of some Flint children — and health officials pointed to the water as a possible source.

First, the city advised residents to run their water for five minutes before using it, to use only cold water for drinking and cooking, and to install lead-removing water filters. Then county officials issued an emergency advisory recommending that people not drink Flint's water unless it is tested for lead or filtered.

And last Friday, after corroborating that lead levels had risen in some children, state officials called for the water to be tested at all Flint public schools and for stepped-up efforts to replace lead service lines; they also promised $1 million to provide filters.

Officials met here on Wednesday afternoon, and talks were underway, officials said, for additional solutions that could come as early as Thursday. Gov. Rick Snyder said on Twitter late Wednesday that he planned to make an announcement about the situation on Thursday morning.

Private groups have raced to donate bottled water to schools, where the water fountains are now shut off, as well as filters to families who cannot afford them. Saying “we’re just in a heck of a bind,” Robert J. Pickell, the Genesee County sheriff, began serving bottled water and food that need not be cooked in water to hundreds of inmates in the county jail. Some residents have begun washing their children and pets with bottled water.

And Flint’s mayor, Dayne Walling, who had attended a 2014 event to celebrate the switch to the new water supply, called for returning to the city’s old water supply and urged state officials to provide millions of dollars to help pay for it.

The contaminated water was just the latest blow to Flint, an economically battered city that has struggled for years with factory closings, job losses and population decline.

Along Saginaw Street downtown, where at least one business had an “un-leaded” sign posted by a jug of water, residents had lingering questions: Would filters really do enough to make the water safe? What about unfiltered showers? Could they rely on the water at work and at restaurants? And why had it taken so long for leaders to figure out that there was a problem?

“I don’t think people know what’s going on at all,” said Chris Thornton, 49, who described the first blast of water from his faucets some days as looking like urine, smelling like bleach and tasting of metal. After his wife, Ronda, 50, felt sick to her stomach for months, the Thorntons began buying jugs of bottled water, though the price — on top of an already steep water bill — has been overwhelming.

“As far as my family,” Ronda Thornton said, “we’ve just given up on the city’s water.”

Flint’s water problems are tied inextricably to its fiscal woes. In 1960, nearly 200,000 people lived here. But auto plants closed, and the population has dropped by half. By 2011, Flint’s shrunken tax base and seemingly intractable budget problems prompted Mr. Snyder to appoint an emergency manager for the city. Over the next four years, the city had four managers overseeing operations. Along the way, the city switched its water supply.

For decades, the city bought water from Detroit, which treated water from Lake Huron, then piped it here, 70 miles to the northwest. But with the costs mounting, Flint's leaders decided they could save millions by joining a new regional authority that would draw and treat its own water from Lake Huron.

There was one complication: Flint needed an alternative water supply from April 2014 until the new regional system is ready, probably next year. In the interim, Flint switched to using water from the Flint River, which state officials say had been a backup source in the past.

Ask residents about the Flint River, and many of them roll their eyes. They say it was once as a dumping ground for car parts, grocery carts and refrigerators. There have been significant improvements and intensive restoration campaigns in recent years, though a Flint River Fest set for Friday has been postponed, organizers said, given the "current drinking water crisis."

Even now, state officials say that treated Flint River water is safe and capable of meeting state and federal standards. Officials say the problem may be that some of the aging pipes and service lines that carry water into Flint's homes and businesses contain lead and are being corroded by water. The water Flint used to receive from Detroit was treated with chemicals intended to prevent such corrosion.

For months, questions about lead and other risks multiplied. "Everyone kept saying: 'It's safe! It's safe! It's safe!' " recalled Melissa Mays, a Flint resident who says she was sickened by the water and has helped organize residents over the issue.

Then in September, a researcher from Virginia Tech released findings from the water in hundreds of Flint homes showing elevated lead levels. Blood tests released by a local pediatrician — and corroborated last week by state officials analyzing their own testing — showed an increase in lead levels in children in some neighborhoods since 2014, when the city began drawing water from the river.

“We all have a concern about Flint’s drinking water in terms of what we’re seeing in terms of lead,” Mr. Snyder said last week.

Mr. Walling said that the move to river water occurred when an emergency manager controlled the city, though the City Council did vote for the city’s plans for a new, regional water system. He acknowledged supporting the move in a state of the city address, but said that he had not been given sufficient information about the safety risks.

“I had to work with what I knew at the time,” Mr. Walling, who is up for election next month, said in an interview.

But for many residents, the authorities failed the city by taking so long to react. “Anytime you have to weigh money against the health and welfare of people, it always has to be the health and welfare you go with,” said the Rev. Alfred Harris, a local pastor who has stopped conducting baptisms at his church because of concerns about the water. “We’ve been talking about this for the last 14 months, and they did not give a sincere ear to any of us. Shame on you!”

LeeAnne Walters said her son, Gavin, 4, who has immune system issues, had suffered direct consequences. After the switch to river water, which sometimes looked brown in their house, Gavin dropped to 27 pounds, far below the weight of his twin brother, she said. He sometimes seemed unable to pronounce words he knew, she said, and then test results showed an elevated lead level in his blood.

“He is going to deal with the side effects of this for the rest of his life,” Ms. Walters said. “I don’t think there’s a word angry enough to describe my anger. I trusted the city, and I helped the city poison my kid. Who thought this could happen in the United States?”

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http://www.freep.com/story/opinion/columnists/nancy-kaffer/2015/10/07/flint-water-crisis/73534078/

Waiting for answers, action in Flint water crisis

By Nancy Kaffer, Detroit Free Press Columnist 10:27 p.m. EDT October 7, 2015

They are still waiting for answers about the water in Flint.

And it's hard to say when, or if, those answers are coming.

It has been two weeks since a hospital researcher found that more Flint kids had been lead poisoned since the city switched its municipal water supply. And it has been nearly a week since the State of Michigan abruptly changed its posture, acknowledging, after months of denial and empty assurances, that Flint's water supply was compromised.

Since then, a lot of folks have worked diligently to sort out how things went so badly wrong in this small, impoverished city, and what the State of Michigan is doing to fix it.

But solutions remain elusive.

The state announced Friday that it has devoted $1 million to provide water filters for Flint residents, is expanding water testing and expediting improved water treatment. But two weeks on, Flint hasn't started adding chemicals to its water that would allow it to pass safely through the city's lead service pipes. That plan can likely be ready within a week, and can be enacted as soon as it's approved by the Michigan Department of Environmental Quality. Scientists say it would take roughly a month before those chemicals would begin to effect Flint's drinking water.

That would be the right play, unless the city opts to rejoin the Detroit Water and Sewerage Department -- as water experts have recommended -- a decision that would likely require financial assistance from the State of Michigan but could result in potable water flowing from Flint taps within two weeks. Is it likely to happen? Your guess is as good as mine.

And state officials continue to insist that the rules designed to monitor water systems, to ensure safe drinking water, worked as they're supposed to.

Kids in danger

The effects of lead on children are irreversible. Lead-poisoned kids can experience a host of behavioral and developmental problems, and in two Flint ZIP codes, the percentage of children affected by lead has doubled, reversing a long trend of improving rates.

That's because in 2014, Flint decided to pump untreated water from the Flint River, ending a decades-long relationship with the Detroit Water and Sewerage Department, while a new regional water authority it's joining is under construction. Since then, Flint's been treating its water locally, prompting a rash of problems related to coliform bacteria, a disinfectant and its byproduct, and now, elevated lead.

Both of these decisions were made while Flint was under state oversight, during the appointments of a series of emergency managers appointed by and answerable to Gov. Rick Snyder. The Michigan Department of Environmental Quality, whose director is appointed by the governor, must ensure that water systems are producing safe drinking water. Because Flint's water decisions were made under Snyder's emergency managers, the governor's decision-making authority is one step closer to Flint's water crisis.

The water Flint bought from Detroit was "finished," in other words, safe for humans to drink, but also treated to create a film inside those pipes that kept the lead out. That's called "corrosion control," and Detroit achieved this goal by adding phosphates to the water it pumps from Lake Huron.

Flint doesn't.

It took an unreasonably long time to get a solid answer to this question.

Corrosion control

Since April 2014, treatment at Flint's plant has included adding lime to the water it distributed to customers, largely to make the water less acidic, Liane Shekter Smith, chief of the MDEQ's office of drinking water and municipal assistance, said Tuesday.

"There was no corrosion control plan put forward at the time of the switch," Shekter Smith said. "There was a belief that (acidity) adjustment would provide adequate corrosion control, and that rounds of testing would confirm or refute that."

Any new water supply must be tested at six-month intervals to determine whether it meets the guidelines of the federal lead and copper rule, a standard established by the U.S. Environmental Protection Agency.

Tests of Flint's drinking water showed roughly 6 parts per billion (how the presence of lead in water is reckoned) in water sampled between June and December of 2014, said MDEQ spokesman Brad Wurfel. The U.S. Centers for Disease Control and Prevention said there is no acceptable level of lead exposure, but 6 ppb would, in some cases, fall below the EPA's actionable level of 15 ppb.

But because the community Flint serves is so large, it must meet a different threshold, 5 ppb. If a second round of testing showed that lead levels continued to exceed it, Flint would be required to improve its method of corrosion control.

Water sampled between January and June of 2015 showed an alarming increase: lead levels had risen to 11 ppb.

That kind of testing, Shekter Smith said, is the most reliable way to determine whether corrosion control is working.

"Having it in place is best way to know what is happening out in the system," she said.

Given the elevated blood-lead levels in Flint kids, the damage lead can cause, and the permanence of that damage, is that enough?

"I think that we are following the protocol," she said, "and the protocol got us to the right place, and we're making the right decisions."

“It did?" said Erik Olson, a senior strategy director for the Washington, D.C.-based Natural Resources Defense Council. "It didn’t sound like it."

Because the composition of water varies so greatly, there's no one right way to do corrosion control, Olson said. But Flint's plan to use lime only should have prompted questions before switching to Flint River water.

"They definitely should have said, 'OK, what’s the basis of that decision? What’s your engineering study that shows that that’s optimizing your corrosion control?' " Olson said.

That Flint's river water would pass through pipes with lead components shouldn't have been surprising, Olson said -- the presence of lead in the water and sewage infrastructure is well-documented, and well-known.

So why didn't Flint's engineers account for that, when developing a treatment plan? That's just one of the questions I still can't answer.

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http://www.detroitnews.com/story/news/local/michigan/2015/10/08/flint-health-experts-support-detroit-water-reconnection/73568654/

Flint health experts support Detroit water reconnection

Detroit News Staff and wire reports 7:58 a.m. EDT October 8, 2015

Flint — A committee of local experts in health, water and science has recommended that Flint reconnect to Detroit's water system.

Flint administrator Natasha Henderson urged the committee to not think about cost and decide "what's in the best interest" for Flint, which has a water crisis due to elevated levels of lead in children.

The Technical Advisory Committee met Wednesday. It rarely meets, but state officials say it will have a role in Flint's water quality. The committee has no formal role in deciding whether Flint stops using the Flint River for water.

Flint has a public health emergency due to corrosive water leaching lead from old pipes. A Virginia Tech researcher says there would be dramatic reductions in about a month if the Detroit water system is used.

Gov. Rick Snyder's administration last week said it was considering temporarily reconnecting Flint to Detroit's water system temporarily in a bid to tackle the ongoing water quality and lead issues. The state also planned to expedite construction of a new water line to Lake Huron so a planned water authority that would service Flint could operate as soon as possible. An announcement on the Flint water plan was expected Thursday.

Sara Wurfel, a spokeswoman for Snyder, said the recommendation Wednesday "is an option we're helping thoroughly review and consider with the city, and the technical advisory committee's work is much appreciated in this matter. We're also focused on working hard in collaboration with all and implementing the key action steps outlined on Oct. 2 to help protect public health and ensure safe, accessible drinking water for Flint residents."

Since 2014, the Genesee County city has drawn its drinking water from the Flint River, which has led to major problems for residents.

Last month, the city issued an advisory about its drinking water after concerns surfaced about lead contamination.

On Tuesday, Snyder's administration made free water filters available for residents.

Meanwhile, Uber drivers began collecting donations of bottled water for Flint schools. And Mayor Dayne Walling this week said he gave to Flint Community Schools some 19 palettes Kroger grocers donated.

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http://www.mlive.com/news/flint/index.ssf/2015/10/donors_show_support_by_giving.html

Uber, others join in efforts to pour clean water into Flint

By Jiquanda Johnson | jjohns16@mlive.com The Flint Journal Follow on Twitter on October 08, 2015 at 5:00 AM, updated October 08, 2015 at 5:06 AM

FLINT, MI -- Businesses, charities and individuals have donated thousands of bottles of water to city of Flint residents and students since last year after controversy erupted over the quality of the city's water. Here is a list of some of the donors.

- The United Way of Genesee County has actively participated in looking at ways to ease water woes in the city of Flint.

- ZeroWater partnered with United Way and Flint Community Schools early October to bring water filters to the school district as a solution instead of having students drink bottled water.

- Uber announced on Oct. 6 that drivers in Detroit will pick up donated bottles of water to bring to Flint throughout the week. People in Detroit just have to use their Uber link to notify drivers that water needs to be picked up. The initiative runs from 2 to 7 p.m. from Oct. 6 - 8.

- There was another donation of more than 4,000 gallons of bottled water through the Flint Diaper Bank and United Way of Genesee County on Oct. 7.

- Donations came in from Flint-area Home Depots and Sam's Club after Hurley Medical Center doctors revealed that lead levels in children in Flint had elevated after the city switched from Detroit's water source to the Flint River.

- Mott Community College issued an Oct. 7 media release saying they are donating bottled water to Pierce Elementary School on the city's north side on Oct. 8.

- Swan Valley High School in Saginaw is collecting bottled water to send to Flint Public Schools. The bottled water drive ends Oct. 9 and school officials are hoping to drop donations off to Flint Community Schools on Oct. 9.

•□□□□□□□□ Bendle High School sophomore Chase Harrison raised money to purchase bottled water for Flint Community Schools.

•□□□□□□□□ Lavish Living, a Flint-based organization, has donated at least 200 cases of water to Flint Community Schools. As of Oct. 6 the organization was still working to collect more water for students.

•□□□□□□□□ The Flint Northwestern football team delivered an estimated 40 cases of water on Oct. 5 to Flint area residents between Dupont, Clio, Carpenter and Pierson roads.

•□□□□□□□□ General Motors Foundation

•□□□□□□□□ In January, Sargent Title Co. collected about 600 cases of water to donated to Flint residents.

•□□□□□□□□ Absopure Water Corp. donated a semi-truck worth of bottled water to Flint residents in January.

•□□□□□□□□ 1st Congregational United Church of Christ in Kalamazoo donated 4,000 bottles of water in September.

•□□□□□□□□ Al Serra Auto Plaza announced Oct. 7 that they will serve as drop off location for bottled water donations. If donors give 12 or more bottles of water, the dealership is offering free tire rotation.

•□□□□□□□□ In March, members of the Michigan National Action Network provided an estimated 10,000 bottles of water to Flint residents.

•□□□□□□□□ District leaders also expect at least 1,000 cases of bottled water to arrive at the Food Bank on Wednesday, Oct. 7, from the Saginaw Chippewa Indian Tribe and Soaring Eagle Waterpark and Hotel and Soaring Eagle Casino and Resort.

The Flint Journal will do updates as more donor names are provided. If anyone has donor information make a note of it in the comments section of this post, or email The Flint Journal at flnews@mlive.com.

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http://michronicleonline.com/2015/10/07/flint-water-crisis-a-bitter-indictment-of-dysfunctional-emergency-manager/

Flint water crisis a bitter indictment of dysfunctional emergency manager

By Curt Guyette, Special to The Michigan Chronicle

Stark evidence of how terribly bad things can go when democracy is dismantled can be found in the elevated levels of lead in the children of Flint.

Because of decisions made by an appointed emergency manager, the tragically high costs of trying to balance a budget by switching to an unsafe water source will be borne by kids now forced to struggle with lower IQs, behavioral problems, learning disabilities, and a host of other ill effects.

This is what can happen when people are denied full access to representative government; they get poisoned by appointees with no connection to the community. Under Michigan's emergency manager law – PA 436 — gubernatorial appointees can leave town claiming to have successfully solved a fiscal crisis when in fact what they leave in their wake is a catastrophe of monumental proportions.

In recent days, as the lead problems in Flint have made international news, former Flint emergency manager Darnell Earley – the man in charge when the switch to the Flint River was made, and who is now overseeing the education of the children in Detroit Public Schools – has tried to deny any responsibility for the catastrophe.

According to the Detroit Free Press, Earley claimed in an e-mailed statement "that he was not involved in the decision to use river water."

The governor's office and Earley can rightfully claim that the Flint mayor and City Council initially gave their blessing to the switch made 18 months ago. But that fig leaf provides little real cover for the state officials now trying to run away from their disastrous decision.

For starters, it doesn't matter what the mayor and City Council had to say when the decision was made. The emergency manager, under the sweeping powers granted under Public Act 436, had complete authority to make the switch regardless of what Flint's elected officials wanted.

Moreover, those officials were in essence working for the emergency manager, not the people who elected them. The EM decided how much pay the mayor and council members drew, and how much power they could wield.

How do things go when appointed officials try to buck the control of an EM? As we've seen in Benton Harbor and Detroit Public Schools, the answer is that they get denuded of all power and are completely marginalized.

The message to elected officials under state control has been made perfectly clear: play ball with the EM, or else.

But there is another problem with the EM law as well, one made painfully obvious in Flint. In a normally-functioning democracy, when it came time for a city of Flint to conduct tests to show it is in compliance with federal drinking water regulations, the city would be an independent actor with the Michigan Department of Environmental Quality (MDEQ) serving as a separate check on the system, another independent actor providing oversight to make sure the job is done correctly.

Instead, with Governor Rick Snyder's man being the one in charge when the decision was made to start using river water – a decision that was almost instantly revealed to be fraught with problems – the MDEQ, instead of being a watchdog protecting the citizens of Flint, served as a collaborator, working with the city to do everything in their power to skew results so that their tests would make it appear that the water was safe when it wasn't.

How do we know it wasn't safe? Because grassroots citizen groups worked with researchers at Virginia Tech and the ACLU of Michigan to conduct an independent test of nearly 300 city homes and found that the problem was far worse than the city and state claimed.

When those results were released in mid-September, the response by the state was to try and discredit them. The same was true a week later, when a Hurley Children's Hospital study found the number of children with elevated lead levels doubled after the switch to the Flint River was made.

Those two studies, and the host of problems with the state and city's water testing, last week prompted the ACLU of Michigan, the Natural Resources Defense Council, and an array of civic groups to file a petition with the U.S. EPA, calling upon the federal government to come in and provide the oversight necessary to ensure Flint's water is clean and safe.

Finally, after the state's own data confirmed those findings, and Genesee County officials took the drastic step of declaring a public health emergency, the governor and MDEQ were forced to finally admit the truth and started taking some action.

But even if those measures are enough – and they may well not be, failing as they do to require a switch back to the much cleaner and far less corrosive Detroit system – the damage already caused by this governor and his emergency managers is irreversible for the children who will struggle for the rest of their lives because of the decisions made while Flint was under state control and democracy was suspended.

Jeff Kelley
Director, Office of External Communications
U.S. EPA Region 5
ph: 312-353-1159

To: Hyde, Tinka[hyde.tinka@epa.gov]
From: Henry, Timothy
Sent: Thur 10/8/2015 2:17:41 PM
Subject: Re: Flint clips for morning of Oct. 8

Has it actually happened now?

Tim Henry
Deputy Director, Water Division
US EPA Region V
312-886-6107 (office)
312-296-0690 (cell)

Sent from my iPhone

On Oct 8, 2015, at 10:16, Hyde, Tinka <hyde.tinka@epa.gov> wrote:

> Gov announce shifting to back to Detroit.
>
> Sent from my iPhone
>
> Begin forwarded message:
>
>> **From:** "Kelley, Jeff" <kelley.jeff@epa.gov>
>> **Date:** October 8, 2015 at 8:11:27 AM CDT
>> **To:** "Hedman, Susan" <hedman.susan@epa.gov>, "Kaplan, Robert" <kaplan.robert@epa.gov>, "Hyde, Tinka" <hyde.tinka@epa.gov>
>> **Cc:** "Rowan, Anne" <rowan.anne@epa.gov>, "Cassell, Peter" <cassell.peter@epa.gov>, "Beckmann, Ronna Erin" <beckmann.ronna@epa.gov>, "Harrison, Melissa" <Harrison.Melissa@epa.gov>, "Abrams, Dan" <Abrams.Dan@epa.gov>, "Poy, Thomas" <poy.thomas@epa.gov>
>> **Subject: Flint clips for morning of Oct. 8**
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>> Note that Gov. Snyder is expected to make an announcement at 10 a.m. Eastern. The state will be livestreaming the announcement at http://1.usa.gov/1QapVxk
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>> •□□□□□□□□ Gov. Snyder says he'll make announcement on Flint water Thursday (Flint Journal)
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>> •□□□□□□□□ Governor plans 10 a.m. announcement on troubled Flint water

system (Associated Press)

•□□□□□□□□ Flint Officials Are No Longer Saying the Water Is Fine (New York Times)

•□□□□□□□□ Waiting for answers, action in Flint water crisis (Detroit Free Press)

•□□□□□□□□ Flint health experts support Detroit water reconnection (Detroit News)

•□□□□□□□□ Uber, others join in efforts to pour clean water into Flint (Flint Journal)

•□□□□□□□□ Flint water crisis a bitter indictment of dysfunctional emergency manager (Michigan Chronicle)

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http://www.mlive.com/news/flint/index.ssf/2015/10/gov_snyder_says_hell_make_anno.html

Gov. Snyder says he'll make announcement on Flint water Thursday

By Ron Fonger | rfonger1@mlive.com The Flint Journal on October 07, 2015 at 9:45 PM, updated October 08, 2015 at 8:08 AM

FLINT, MI -- Gov. Rick Snyder says on Twitter that he will make an announcement about Flint water at 10 a.m. Thursday.

The planned announcement comes less than 24 hours after Flint's Technical Advisory Committee recommended the city end its use of the Flint River as its water source.

Since making the switch from using pre-treated Lake Huron water from the city of Detroit to treating river water at its own plant in April 2014, Flint officials have struggled to maintain the quality and safety of water delivered to city residents.

Snyder's Twitter message says, "Watch live tomorrow at 10 a.m. as I make an announcement regarding Flint water" at mi.gov/SnyderLive.

The state's Web site says the governor will be joined by Flint Mayor Dayne Walling, other state officials, and Ridgway White of the Charles Stewart Mott Foundation.

High levels of lead in city water and in the blood of children and infants since the city changed its water source have triggered a public health emergency here, including the mass distribution of lead-clearing faucet filters and bottled water.

Researchers from Virginia Tech university say river water has proven to be far more corrosive than water from the Detroit Water and Sewerage Department, causing lead to leach into homes that have lead service lines.

Flint City Administrator Natasha Henderson said today, Oct. 7, that she believes the position of state officials has been shifting on continued use of the Flint River, a change that was made while Flint was being run by a state-appointed emergency manager.

"We're to the point that the state believes this is a public health emergency," Henderson told the City Council. "From what I see, the state is working very well with us."

The city administrator is among officials who have advocated for a return to buying water from the DWSD since a study was released last month by Hurley Medical Center's director of pediatric residency program.

The study showed the percentage of Flint infants and children with above average lead levels has nearly doubled citywide since the switch to river water, and has nearly tripled among children in "high risk" areas of lead exposure.

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http://www.macombdaily.com/general-news/20151008/governor-plans-10-am-announcement-on-troubled-flint-water-system

Governor plans 10 a.m. announcement on troubled Flint water system

FLINT (AP) — Gov. Rick Snyder plans an announcement about the water system in Flint, which is facing a public health emergency over lead in its water.

A posting on the state's website says Snyder on Thursday morning will be joined for the announcement by officials including Flint Mayor Dayne Walling, state Department of Environmental Quality Director Dan Wyant and state Department of Health and Human Services Director Nick Lyon.

The announcement comes a day after a committee of local experts in health, water and science recommended Flint reconnect to Detroit's water system while it awaits a new pipeline to Lake Huron.

Flint has a public health emergency due to corrosive water leaching lead from old pipes. State government and nonprofit groups are distributing filters and bottled water to Flint homes and schools.

Snyder's announcement can be viewed live at 10 a.m. Thursday, Oct. 8 by visiting http://1.usa.gov/1QapVxk

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http://www.nytimes.com/2015/10/08/us/reassurances-end-in-flint-after-months-of-concern.html

Flint Officials Are No Longer Saying the Water Is Fine

By MONICA DAVEY, New York Times, OCT. 7, 2015

FLINT, Mich. — All along, through months of complaints from residents of this city about the peculiar colors and odors they said were coming from their faucets, the overriding message from the authorities here was that the water would be just fine.

Yes, there had been a boil order when fecal coliform bacteria turned up in some neighborhoods last year. And yes, the extra chlorine that was pumped in to solve that problem seemed to create another one — increased levels of a different contaminant.

Still, the guidance from Flint officials about the temporary water supply they switched to in 2014 — partly to save money — sounded assuring. In a notice sent to residents in July, city officials declared: “This is not an emergency. If a situation arises where the water is no longer safe to drink, you will be notified within 24 hours.”

The soothing talk has vanished. In recent weeks, testing has shown increased levels of lead in the blood of some Flint children — and health officials pointed to the water as a possible source.

First, the city advised residents to run their water for five minutes before using it, to use only cold water for drinking and cooking, and to install lead-removing water filters. Then county officials issued an emergency advisory recommending that people not drink Flint's water unless it is tested for lead or filtered.

And last Friday, after corroborating that lead levels had risen in some children, state officials called for the water to be tested at all Flint public schools and for stepped-up efforts to replace lead service lines; they also promised $1 million to provide filters.

Officials met here on Wednesday afternoon, and talks were underway, officials said, for additional solutions that could come as early as Thursday. Gov. Rick Snyder said on Twitter late Wednesday that he planned to make an announcement about the situation on Thursday morning.

Private groups have raced to donate bottled water to schools, where the water fountains are now shut off, as well as filters to families who cannot afford them. Saying "we're just in a heck of a bind," Robert J. Pickell, the Genesee County sheriff, began serving bottled water and food that need not be cooked in water to hundreds of inmates in the county jail. Some residents have begun washing their children and pets with bottled water.

And Flint's mayor, Dayne Walling, who had attended a 2014 event to celebrate the switch to the new water supply, called for returning to the city's old water supply and urged state officials to provide millions of dollars to help pay for it.

The contaminated water was just the latest blow to Flint, an economically battered city that has struggled for years with factory closings, job losses and population decline.

Along Saginaw Street downtown, where at least one business had an "un-leaded" sign posted by a jug of water, residents had lingering questions: Would filters really do enough to make the water safe? What about unfiltered showers? Could they rely on the water at work and at restaurants? And why had it taken so long for leaders to figure out that there was a problem?

"I don't think people know what's going on at all," said Chris Thornton, 49, who described the first blast of water from his faucets some days as looking like urine, smelling like bleach and tasting of metal. After his wife, Ronda, 50, felt sick to her stomach for months, the Thorntons began buying jugs of bottled water, though the price — on top of an already steep water bill — has been overwhelming.

"As far as my family," Ronda Thornton said, "we've just given up on the city's water."

Flint's water problems are tied inextricably to its fiscal woes. In 1960, nearly 200,000 people lived here. But auto plants closed, and the population has dropped by half. By 2011, Flint's shrunken tax base and seemingly intractable budget problems prompted Mr. Snyder to appoint an emergency manager for the city. Over the next four years, the city had four managers overseeing operations. Along the way, the city switched its water supply.

For decades, the city bought water from Detroit, which treated water from Lake Huron, then piped it here, 70 miles to the northwest. But with the costs mounting, Flint's leaders decided they could save millions by joining a new regional authority that would draw and treat its own water from Lake Huron.

There was one complication: Flint needed an alternative water supply from April 2014 until the new regional system is ready, probably next year. In the interim, Flint switched to using water from the Flint River, which state officials say had been a backup source in the past.

Ask residents about the Flint River, and many of them roll their eyes. They say it was once as a dumping ground for car parts, grocery carts and refrigerators. There have been significant improvements and intensive restoration campaigns in recent years, though a Flint River Fest set for Friday has been postponed, organizers said, given the "current drinking water crisis."

Even now, state officials say that treated Flint River water is safe and capable of meeting state and federal standards. Officials say the problem may be that some of the aging pipes and service lines that carry water into Flint's homes and businesses contain lead and are being corroded by water. The water Flint used to receive from Detroit was treated with chemicals intended to prevent such corrosion.

For months, questions about lead and other risks multiplied. "Everyone kept saying: 'It's safe! It's safe! It's safe!' " recalled Melissa Mays, a Flint resident who says she was sickened by the water and has helped organize residents over the issue.

Then in September, a researcher from Virginia Tech released findings from the water in hundreds of Flint homes showing elevated lead levels. Blood tests released by a local pediatrician — and corroborated last week by state officials analyzing their own testing — showed an increase in lead levels in children in some neighborhoods since 2014, when the city began drawing water from the river.

"We all have a concern about Flint's drinking water in terms of what we're seeing in terms of lead," Mr. Snyder said last week.

Mr. Walling said that the move to river water occurred when an emergency manager controlled the city, though the City Council did vote for the city's plans for a new, regional water system. He acknowledged supporting the move in a state of the city address, but said that he had not been given sufficient information about the safety risks.

"I had to work with what I knew at the time," Mr. Walling, who is up for election next month, said in an interview.

But for many residents, the authorities failed the city by taking so long to react. “Anytime you have to weigh money against the health and welfare of people, it always has to be the health and welfare you go with,” said the Rev. Alfred Harris, a local pastor who has stopped conducting baptisms at his church because of concerns about the water. “We’ve been talking about this for the last 14 months, and they did not give a sincere ear to any of us. Shame on you!”

LeeAnne Walters said her son, Gavin, 4, who has immune system issues, had suffered direct consequences. After the switch to river water, which sometimes looked brown in their house, Gavin dropped to 27 pounds, far below the weight of his twin brother, she said. He sometimes seemed unable to pronounce words he knew, she said, and then test results showed an elevated lead level in his blood.

“He is going to deal with the side effects of this for the rest of his life,” Ms. Walters said. “I don’t think there’s a word angry enough to describe my anger. I trusted the city, and I helped the city poison my kid. Who thought this could happen in the United States?”

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http://www.freep.com/story/opinion/columnists/nancy-kaffer/2015/10/07/flint-water-crisis/73534078/

Waiting for answers, action in Flint water crisis

By Nancy Kaffer, Detroit Free Press Columnist 10:27 p.m. EDT October 7, 2015

They are still waiting for answers about the water in Flint.

And it's hard to say when, or if, those answers are coming.

It has been two weeks since a hospital researcher found that more Flint kids had been lead poisoned since the city switched its municipal water supply. And it has been nearly a week since the State of Michigan abruptly changed its posture, acknowledging, after months of denial and empty assurances, that Flint's water supply was compromised.

Since then, a lot of folks have worked diligently to sort out how things went so badly wrong in this small, impoverished city, and what the State of Michigan is doing to fix it.

But solutions remain elusive.

The state announced Friday that it has devoted $1 million to provide water filters for Flint residents, is expanding water testing and expediting improved water treatment. But two weeks on, Flint hasn't started adding chemicals to its water that would allow it to pass safely through the city's lead service pipes. That plan can likely be ready within a week, and can be enacted as soon as it's approved by the Michigan Department of Environmental Quality. Scientists say it would take roughly a month before those chemicals would begin to effect Flint's drinking water.

That would be the right play, unless the city opts to rejoin the Detroit Water and Sewerage Department -- as water experts have recommended -- a decision that would likely require financial assistance from the State of Michigan but could result in potable water flowing from Flint taps within two weeks. Is it likely to happen? Your guess is as good as mine.

And state officials continue to insist that the rules designed to monitor water systems, to ensure safe drinking water, worked as they're supposed to.

Kids in danger

The effects of lead on children are irreversible. Lead-poisoned kids can experience a host of behavioral and developmental problems, and in two Flint ZIP codes, the percentage of children affected by lead has doubled, reversing a long trend of improving rates.

That's because in 2014, Flint decided to pump untreated water from the Flint River, ending a decades-long relationship with the Detroit Water and Sewerage Department, while a new regional water authority it's joining is under construction. Since then, Flint's been treating its water locally, prompting a rash of problems related to coliform bacteria, a disinfectant and its byproduct, and now, elevated lead.

Both of these decisions were made while Flint was under state oversight, during the appointments of a series of emergency managers appointed by and answerable to Gov. Rick Snyder. The Michigan Department of Environmental Quality, whose director is appointed by the governor, must ensure that water systems are producing safe drinking water. Because Flint's water decisions were made under Snyder's emergency managers, the governor's decision-making authority is one step closer to Flint's water crisis.

The water Flint bought from Detroit was "finished," in other words, safe for humans to drink, but also treated to create a film inside those pipes that kept the lead out. That's called "corrosion control," and Detroit achieved this goal by adding phosphates to the water it pumps from Lake Huron.

Flint doesn't.

It took an unreasonably long time to get a solid answer to this question.

Corrosion control

Since April 2014, treatment at Flint's plant has included adding lime to the water it distributed to customers, largely to make the water less acidic, Liane Shekter Smith, chief of the MDEQ's office of drinking water and municipal assistance, said Tuesday.

"There was no corrosion control plan put forward at the time of the switch," Shekter Smith said. "There was a belief that (acidity) adjustment would provide adequate corrosion control, and that rounds of testing would confirm or refute that."

Any new water supply must be tested at six-month intervals to determine whether it meets the guidelines of the federal lead and copper rule, a standard established by the U.S. Environmental Protection Agency.

Tests of Flint's drinking water showed roughly 6 parts per billion (how the presence of lead in water is reckoned) in water sampled between June and December of 2014, said MDEQ spokesman Brad Wurfel. The U.S. Centers for Disease Control and Prevention said there is no acceptable level of lead exposure, but 6 ppb would, in some cases, fall below the EPA's actionable level of 15 ppb.

But because the community Flint serves is so large, it must meet a different threshold, 5 ppb. If a second round of testing showed that lead levels continued to exceed it, Flint would be required to improve its method of corrosion control.

Water sampled between January and June of 2015 showed an alarming increase: lead levels had risen to 11 ppb.

That kind of testing, Shekter Smith said, is the most reliable way to determine whether corrosion control is working.

"Having it in place is best way to know what is happening out in the system," she said.

Given the elevated blood-lead levels in Flint kids, the damage lead can cause, and the permanence of that damage, is that enough?

"I think that we are following the protocol," she said, "and the protocol got us to the right place, and we're making the right decisions."

“It did?" said Erik Olson, a senior strategy director for the Washington, D.C.-based Natural Resources Defense Council. "It didn’t sound like it."

Because the composition of water varies so greatly, there's no one right way to do corrosion control, Olson said. But Flint's plan to use lime only should have prompted questions before switching to Flint River water.

"They definitely should have said, 'OK, what’s the basis of that decision? What’s your engineering study that shows that that’s optimizing your corrosion control?' " Olson said.

That Flint's river water would pass through pipes with lead components shouldn't have been surprising, Olson said -- the presence of lead in the water and sewage infrastructure is well-documented, and well-known.

So why didn't Flint's engineers account for that, when developing a treatment plan? That's just one of the questions I still can't answer.

http://www.detroitnews.com/story/news/local/michigan/2015/10/08/flint-health-experts-support-detroit-water-reconnection/73568654/

Flint health experts support Detroit water reconnection

Detroit News Staff and wire reports 7:58 a.m. EDT October 8, 2015

Flint — A committee of local experts in health, water and science has recommended that Flint reconnect to Detroit's water system.

Flint administrator Natasha Henderson urged the committee to not think about cost and decide "what's in the best interest" for Flint, which has a water crisis due to elevated levels of lead in children.

The Technical Advisory Committee met Wednesday. It rarely meets, but state officials say it will have a role in Flint's water quality. The committee has no formal role in deciding whether Flint stops using the Flint River for water.

Flint has a public health emergency due to corrosive water leaching lead from old pipes. A Virginia Tech researcher says there would be dramatic reductions in about a month if the Detroit water system is used.

Gov. Rick Snyder's administration last week said it was considering temporarily reconnecting Flint to Detroit's water system temporarily in a bid to tackle the ongoing water quality and lead issues. The state also planned to expedite construction of a new water line to Lake Huron so a planned water authority that would service Flint could operate as soon as possible. An announcement on the Flint water plan was expected Thursday.

Sara Wurfel, a spokeswoman for Snyder, said the recommendation

Wednesday "is an option we're helping thoroughly review and consider with the city, and the technical advisory committee's work is much appreciated in this matter. We're also focused on working hard in collaboration with all and implementing the key action steps outlined on Oct. 2 to help protect public health and ensure safe, accessible drinking water for Flint residents."

Since 2014, the Genesee County city has drawn its drinking water from the Flint River, which has led to major problems for residents.

Last month, the city issued an advisory about its drinking water after concerns surfaced about lead contamination.

On Tuesday, Snyder's administration made free water filters available for residents.

Meanwhile, Uber drivers began collecting donations of bottled water for Flint schools. And Mayor Dayne Walling this week said he gave to Flint Community Schools some 19 palettes Kroger grocers donated.

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http://www.mlive.com/news/flint/index.ssf/2015/10/donors_show_support_by_giving.html

Uber, others join in efforts to pour clean water into Flint

By Jiquanda Johnson | jjohns16@mlive.com The Flint Journal Follow on Twitter on October 08, 2015 at 5:00 AM, updated October 08, 2015 at 5:06 AM

FLINT, MI -- Businesses, charities and individuals have donated thousands of bottles of water to city of Flint residents and students since last year after controversy erupted over the quality of the city's water. Here is a list of some of the donors.

- The United Way of Genesee County has actively participated in looking at ways to ease water woes in the city of Flint.

- ZeroWater partnered with United Way and Flint Community Schools early October to bring water filters to the school district as a solution instead of having students drink bottled water.

- Uber announced on Oct. 6 that drivers in Detroit will pick up donated bottles of water to bring to Flint throughout the week. People in Detroit just have to use their Uber link to notify drivers that water needs to be picked up. The initiative runs from 2 to 7 p.m. from Oct. 6 - 8.

- There was another donation of more than 4,000 gallons of bottled water through the Flint Diaper Bank and United Way of Genesee County on Oct. 7.

- Donations came in from Flint-area Home Depots and Sam's Club after Hurley Medical Center doctors revealed that lead levels in children in Flint had elevated after the city switched from Detroit's water source to the Flint River.

- Mott Community College issued an Oct. 7 media release saying they are donating bottled water to Pierce Elementary School on the city's north side on Oct. 8.

- Swan Valley High School in Saginaw is collecting bottled water to send to Flint Public Schools. The bottled water drive ends Oct. 9 and school officials are hoping to drop donations off to Flint Community Schools on Oct. 9.

- Bendle High School sophomore Chase Harrison raised money to purchase bottled water for Flint Community Schools.

- Lavish Living, a Flint-based organization, has donated at least 200 cases of water to Flint Community Schools. As of Oct. 6 the organization was still working to collect more water for students.

- The Flint Northwestern football team delivered an estimated 40 cases of water on Oct. 5 to Flint area residents between Dupont, Clio, Carpenter and Pierson roads.

•□□□□□□□□ General Motors Foundation

•□□□□□□□□ In January, Sargent Title Co. collected about 600 cases of water to donated to Flint residents.

•□□□□□□□□ Absopure Water Corp. donated a semi-truck worth of bottled water to Flint residents in January.

•□□□□□□□□ 1st Congregational United Church of Christ in Kalamazoo donated 4,000 bottles of water in September.

•□□□□□□□□ Al Serra Auto Plaza announced Oct. 7 that they will serve as drop off location for bottled water donations. If donors give 12 or more bottles of water, the dealership is offering free tire rotation.

•□□□□□□□□ In March, members of the Michigan National Action Network provided an estimated 10,000 bottles of water to Flint residents.

•□□□□□□□□ District leaders also expect at least 1,000 cases of bottled water to arrive at the Food Bank on Wednesday, Oct. 7, from the Saginaw Chippewa Indian Tribe and Soaring Eagle Waterpark and Hotel and Soaring Eagle Casino and Resort.

The Flint Journal will do updates as more donor names are provided. If anyone has donor information make a note of it in the comments section of this post, or email The Flint Journal at flnews@mlive.com.

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http://michronicleonline.com/2015/10/07/flint-water-crisis-a-bitter-indictment-of-dysfunctional-emergency-manager/

Flint water crisis a bitter indictment of dysfunctional emergency manager

By Curt Guyette, Special to The Michigan Chronicle

Stark evidence of how terribly bad things can go when democracy is dismantled can be found in the elevated levels of lead in the children of Flint.

Because of decisions made by an appointed emergency manager, the tragically high costs of trying to balance a budget by switching to an unsafe water source will be borne by kids now forced to struggle with lower IQs, behavioral problems, learning disabilities, and a host of other ill effects.

This is what can happen when people are denied full access to representative government; they get poisoned by appointees with no connection to the community. Under Michigan's emergency manager law – PA 436 — gubernatorial appointees can leave town claiming to have successfully solved a fiscal crisis when in fact what they leave in their wake is a catastrophe of monumental proportions.

In recent days, as the lead problems in Flint have made international news, former Flint emergency manager Darnell Earley – the man in charge when the switch to the Flint River was made, and who is now overseeing the education of the children in Detroit Public Schools – has tried to deny any responsibility for the catastrophe.

According to the Detroit Free Press, Earley claimed in an e-mailed statement "that he was not involved in the decision to use river water."

The governor's office and Earley can rightfully claim that the Flint mayor and City Council initially gave their blessing to the switch made 18 months ago. But that fig leaf provides little real cover for the state officials now trying to run away from their disastrous decision.

For starters, it doesn't matter what the mayor and City Council had to say when the decision was made. The emergency manager, under the sweeping powers granted under Public Act 436, had complete authority to make the switch regardless of what Flint's elected officials wanted.

Moreover, those officials were in essence working for the emergency manager, not the people who elected them. The EM decided how much pay the mayor and council members drew, and how much power they could wield.

How do things go when appointed officials try to buck the control of an EM? As we've seen in Benton Harbor and Detroit Public Schools, the answer is that they get denuded of all power and are completely marginalized.

The message to elected officials under state control has been made perfectly clear: play ball with the EM, or else.

But there is another problem with the EM law as well, one made painfully obvious in Flint. In a normally-functioning democracy, when it came time for a city of Flint to conduct tests to show it is in compliance with federal drinking water regulations, the city would be an independent actor with the Michigan Department of Environmental Quality (MDEQ) serving as a separate check on the system, another independent actor providing oversight to make sure the job is done correctly.

Instead, with Governor Rick Snyder's man being the one in charge when the decision was made to start using river water – a decision that was almost instantly revealed to be fraught with problems – the MDEQ, instead of being a watchdog protecting the citizens of Flint, served as a collaborator, working with the city to do everything in their power to skew results so that their tests would make it appear that the water was safe when it wasn't.

How do we know it wasn't safe? Because grassroots citizen groups worked with researchers at Virginia Tech and the ACLU of Michigan to conduct an independent test of nearly 300 city homes and found that the problem was far worse than the city and state claimed.

When those results were released in mid-September, the response by the state was to try and discredit them. The same was true a week later, when a Hurley Children's Hospital study found the number of children with elevated lead levels doubled after the switch to the Flint River was made.

Those two studies, and the host of problems with the state and city's water testing, last week prompted the ACLU of Michigan, the Natural Resources Defense Council, and an array of civic groups to file a petition with the U.S. EPA, calling upon the federal government to come in and provide the oversight necessary to ensure Flint's water is clean and safe.

Finally, after the state's own data confirmed those findings, and Genesee County officials took the drastic step of declaring a public health emergency, the governor and MDEQ were forced to finally admit the truth and started taking some action.

But even if those measures are enough – and they may well not be, failing as they do to require a switch back to the much cleaner and far less corrosive Detroit system – the damage already caused by this governor and his emergency managers is irreversible for the children who will struggle for the rest of their lives because of the decisions made while Flint was under state control and democracy was suspended.

Jeff Kelley
Director, Office of External Communications
U.S. EPA Region 5
ph: 312-353-1159

To: Henry, Timothy[henry.timothy@epa.gov]
From: Hyde, Tinka
Sent: Thur 10/8/2015 2:18:26 PM
Subject: Re: Flint clips for morning of Oct. 8

Announce at ongoing press conf. See online

Sent from my iPhone

On Oct 8, 2015, at 9:17 AM, Henry, Timothy <henry.timothy@epa.gov> wrote:

> Has it actually happened now?
>
> Tim Henry
> Deputy Director, Water Division
> US EPA Region V
> 312-886-6107 (office)
> 312-296-0690 (cell)
>
> Sent from my iPhone
>
> On Oct 8, 2015, at 10:16, Hyde, Tinka <hyde.tinka@epa.gov> wrote:
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>>> **Date:** October 8, 2015 at 8:11:27 AM CDT
>>> **To:** "Hedman, Susan" <hedman.susan@epa.gov>, "Kaplan, Robert" <kaplan.robert@epa.gov>, "Hyde, Tinka" <hyde.tinka@epa.gov>
>>> **Cc:** "Rowan, Anne" <rowan.anne@epa.gov>, "Cassell, Peter" <cassell.peter@epa.gov>, "Beckmann, Ronna Erin" <beckmann.ronna@epa.gov>, "Harrison, Melissa" <Harrison.Melissa@epa.gov>, "Abrams, Dan" <Abrams.Dan@epa.gov>, "Poy, Thomas" <poy.thomas@epa.gov>
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•□□□□□□□□ Waiting for answers, action in Flint water crisis (Detroit Free Press)

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By Ron Fonger | rfonger1@mlive.com The Flint Journal on October 07, 2015 at 9:45 PM, updated October 08, 2015 at 8:08 AM

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Snyder's Twitter message says, "Watch live tomorrow at 10 a.m. as I make an announcement regarding Flint water" at mi.gov/SnyderLive.

The state's Web site says the governor will be joined by Flint Mayor Dayne Walling, other state officials, and Ridgway White of the Charles Stewart Mott Foundation.

High levels of lead in city water and in the blood of children and infants since the city changed its water source have triggered a public health emergency here, including the mass distribution of lead-clearing faucet filters and bottled water.

Researchers from Virginia Tech university say river water has proven to be far more corrosive than water from the Detroit Water and Sewerage Department, causing lead to leach into homes that have lead service lines.

Flint City Administrator Natasha Henderson said today, Oct. 7, that she believes the position of state officials has been shifting on continued use of the Flint River, a change that was made while Flint was being run by a state-appointed emergency manager.

"We're to the point that the state believes this is a public health emergency," Henderson told the City Council. "From what I see, the state is working very well with us."

The city administrator is among officials who have advocated for a return to buying water from the DWSD since a study was released last month by Hurley Medical Center's director of pediatric residency program.

The study showed the percentage of Flint infants and children with above average lead levels has nearly doubled citywide since the switch to river water, and has nearly tripled among children in "high risk" areas of lead exposure.

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http://www.macombdaily.com/general-news/20151008/governor-plans-10-am-announcement-on-troubled-flint-water-system

Governor plans 10 a.m. announcement on troubled Flint water system

FLINT (AP) — Gov. Rick Snyder plans an announcement about the water system in Flint, which is facing a public health emergency over lead in its water.

A posting on the state's website says Snyder on Thursday morning will be joined for the announcement by officials including Flint Mayor Dayne Walling, state Department of Environmental Quality Director Dan Wyant and state Department of Health and Human Services Director Nick Lyon.

The announcement comes a day after a committee of local experts in health, water and science recommended Flint reconnect to Detroit's water system while it awaits a new pipeline to Lake Huron.

Flint has a public health emergency due to corrosive water leaching lead from old pipes. State government and nonprofit groups are distributing filters and bottled water to Flint homes and schools.

Snyder's announcement can be viewed live at 10 a.m. Thursday, Oct. 8 by visiting http://1.usa.gov/1QapVxk

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http://www.nytimes.com/2015/10/08/us/reassurances-end-in-flint-after-months-of-concern.html

Flint Officials Are No Longer Saying the Water Is Fine

By MONICA DAVEY, New York Times, OCT. 7, 2015

FLINT, Mich. — All along, through months of complaints from residents of this city about the peculiar colors and odors they said were coming from their faucets, the overriding message from the authorities here was that the water would be just fine.

Yes, there had been a boil order when fecal coliform bacteria turned up in some neighborhoods last year. And yes, the extra chlorine that was pumped in to solve that problem seemed to create another one — increased levels of a different contaminant.

Still, the guidance from Flint officials about the temporary water supply they switched to in 2014 — partly to save money — sounded assuring. In a notice sent to residents in July, city officials declared: “This is not an emergency. If a situation arises where the water is no longer safe to drink, you will be notified within 24 hours.”

The soothing talk has vanished. In recent weeks, testing has shown increased levels of lead in the blood of some Flint children — and health officials pointed to the water as a possible source.

First, the city advised residents to run their water for five minutes before using it, to use only cold water for drinking and cooking, and to install lead-removing water filters. Then county officials issued an emergency advisory recommending that people not drink Flint’s water unless it is tested for lead or filtered.

And last Friday, after corroborating that lead levels had risen in some children, state officials called for the water to be tested at all Flint public schools and for stepped-up efforts to replace lead service lines; they also promised $1 million to provide filters.

Officials met here on Wednesday afternoon, and talks were underway, officials said, for additional solutions that could come as early as Thursday. Gov. Rick Snyder said on Twitter late Wednesday that he planned to make an announcement about the situation on Thursday morning.

Private groups have raced to donate bottled water to schools, where the water fountains are now shut off, as well as filters to families who cannot afford them. Saying “we’re just in a heck of a bind,” Robert J. Pickell, the Genesee County sheriff, began serving bottled water and food that need not be cooked in water to hundreds of inmates in the county jail. Some residents have begun washing their children and pets with bottled water.

And Flint’s mayor, Dayne Walling, who had attended a 2014 event to celebrate the switch to the new water supply, called for returning to the city’s old water supply and urged state officials to provide millions of dollars to help pay for it.

The contaminated water was just the latest blow to Flint, an economically battered city that has struggled for years with factory closings, job losses and population decline.

Along Saginaw Street downtown, where at least one business had an “un-leaded” sign posted by a jug of water, residents had lingering questions: Would filters really do enough to make the water safe? What about unfiltered showers? Could they rely on the water at work and at restaurants? And why had it taken so long for leaders to figure out that there was a problem?

“I don’t think people know what’s going on at all,” said Chris Thornton, 49, who described the first blast of water from his faucets some days as looking like urine, smelling like bleach and tasting of metal. After his wife, Ronda, 50, felt sick to her stomach for months, the Thorntons began buying jugs of bottled water, though the price — on top of an already steep water bill — has been overwhelming.

“As far as my family,” Ronda Thornton said, “we’ve just given up on the city’s water.”

Flint’s water problems are tied inextricably to its fiscal woes. In 1960, nearly 200,000 people lived here. But auto plants closed, and the population has dropped by half. By 2011, Flint’s shrunken tax base and seemingly intractable budget problems prompted Mr. Snyder to appoint an emergency manager for the city. Over the next four years, the city had four managers overseeing operations. Along the way, the city switched its water supply.

For decades, the city bought water from Detroit, which treated water from Lake Huron, then piped it here, 70 miles to the northwest. But with the costs mounting, Flint's leaders decided they could save millions by joining a new regional authority that would draw and treat its own water from Lake Huron.

There was one complication: Flint needed an alternative water supply from April 2014 until the new regional system is ready, probably next year. In the interim, Flint switched to using water from the Flint River, which state officials say had been a backup source in the past.

Ask residents about the Flint River, and many of them roll their eyes. They say it was once as a dumping ground for car parts, grocery carts and refrigerators. There have been significant improvements and intensive restoration campaigns in recent years, though a Flint River Fest set for Friday has been postponed, organizers said, given the "current drinking water crisis."

Even now, state officials say that treated Flint River water is safe and capable of meeting state and federal standards. Officials say the problem may be that some of the aging pipes and service lines that carry water into Flint's homes and businesses contain lead and are being corroded by water. The water Flint used to receive from Detroit was treated with chemicals intended to prevent such corrosion.

For months, questions about lead and other risks multiplied. "Everyone kept saying: 'It's safe! It's safe! It's safe!' " recalled Melissa Mays, a Flint resident who says she was sickened by the water and has helped organize residents over the issue.

Then in September, a researcher from Virginia Tech released findings from the water in hundreds of Flint homes showing elevated lead levels. Blood tests released by a local pediatrician — and corroborated last week by state officials analyzing their own testing — showed an increase in lead levels in children in some neighborhoods since 2014, when the city began drawing water from the river.

“We all have a concern about Flint’s drinking water in terms of what we’re seeing in terms of lead,” Mr. Snyder said last week.

Mr. Walling said that the move to river water occurred when an emergency manager controlled the city, though the City Council did vote for the city’s plans for a new, regional water system. He acknowledged supporting the move in a state of the city address, but said that he had not been given sufficient information about the safety risks.

“I had to work with what I knew at the time,” Mr. Walling, who is up for election next month, said in an interview.

But for many residents, the authorities failed the city by taking so long to react. “Anytime you have to weigh money against the health and welfare of people, it always has to be the health and welfare you go with,” said the Rev. Alfred Harris, a local pastor who has stopped conducting baptisms at his church because of concerns about the water. “We’ve been talking about this for the last 14 months, and they did not give a sincere ear to any of us. Shame on you!”

LeeAnne Walters said her son, Gavin, 4, who has immune system issues, had suffered direct consequences. After the switch to river water, which sometimes looked brown in their house, Gavin dropped to 27 pounds, far below the weight of his twin brother, she said. He sometimes seemed unable to pronounce words he knew, she said, and then test results showed an elevated lead level in his blood.

“He is going to deal with the side effects of this for the rest of his life,” Ms. Walters said. “I don’t think there’s a word angry enough to describe my anger. I trusted the city, and I helped the city poison my kid. Who thought this could happen in the United States?”

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http://www.freep.com/story/opinion/columnists/nancy-kaffer/2015/10/07/flint-water-crisis/73534078/

Waiting for answers, action in Flint water crisis

By Nancy Kaffer, Detroit Free Press Columnist 10:27 p.m. EDT October 7, 2015

They are still waiting for answers about the water in Flint.

And it's hard to say when, or if, those answers are coming.

It has been two weeks since a hospital researcher found that more Flint kids had been lead poisoned since the city switched its municipal water supply. And it has been nearly a week since the State of Michigan abruptly changed its posture, acknowledging, after months of denial and empty assurances, that Flint's water supply was compromised.

Since then, a lot of folks have worked diligently to sort out how things went so badly wrong in this small, impoverished city, and what the State of Michigan is doing to fix it.

But solutions remain elusive.

The state announced Friday that it has devoted $1 million to provide water filters for Flint residents, is expanding water testing and expediting improved water treatment. But two weeks on, Flint hasn't started adding chemicals to its water that would allow it to pass safely through the city's lead service pipes. That plan can likely be ready within a week, and can be enacted as soon as it's approved by the Michigan Department of Environmental Quality. Scientists say it would take roughly a month before those chemicals would begin to effect Flint's drinking water.

That would be the right play, unless the city opts to rejoin the Detroit Water and Sewerage Department -- as water experts have recommended -- a decision that would likely require financial assistance from the State of Michigan but could result in potable water flowing from Flint taps within two weeks. Is it likely to happen? Your guess is as good as mine.

And state officials continue to insist that the rules designed to monitor water systems, to ensure safe drinking water, worked as they're supposed to.

Kids in danger

The effects of lead on children are irreversible. Lead-poisoned kids can experience a host of behavioral and developmental problems, and in two Flint ZIP codes, the percentage of children affected by lead has doubled, reversing a long trend of improving rates.

That's because in 2014, Flint decided to pump untreated water from the Flint River, ending a decades-long relationship with the Detroit Water and Sewerage Department, while a new regional water authority it's joining is under construction. Since then, Flint's been treating its water locally, prompting a rash of problems related to coliform bacteria, a disinfectant and its byproduct, and now, elevated lead.

Both of these decisions were made while Flint was under state oversight, during the appointments of a series of emergency managers appointed by and answerable to Gov. Rick Snyder. The Michigan Department of Environmental Quality, whose director is appointed by the governor, must ensure that water systems are producing safe drinking water. Because

Flint's water decisions were made under Snyder's emergency managers, the governor's decision-making authority is one step closer to Flint's water crisis.

The water Flint bought from Detroit was "finished," in other words, safe for humans to drink, but also treated to create a film inside those pipes that kept the lead out. That's called "corrosion control," and Detroit achieved this goal by adding phosphates to the water it pumps from Lake Huron.

Flint doesn't.

It took an unreasonably long time to get a solid answer to this question.

Corrosion control

Since April 2014, treatment at Flint's plant has included adding lime to the water it distributed to customers, largely to make the water less acidic, Liane Shekter Smith, chief of the MDEQ's office of drinking water and municipal assistance, said Tuesday.

"There was no corrosion control plan put forward at the time of the switch," Shekter Smith said. "There was a belief that (acidity) adjustment would provide adequate corrosion control, and that rounds of testing would confirm or refute that."

Any new water supply must be tested at six-month intervals to determine whether it meets the guidelines of the federal lead and copper rule, a standard established by the U.S. Environmental Protection Agency.

Tests of Flint's drinking water showed roughly 6 parts per billion (how the presence of lead in water is reckoned) in water sampled between June and December of 2014, said MDEQ spokesman Brad Wurfel. The U.S. Centers for Disease Control and Prevention said there is no acceptable level of lead exposure, but 6 ppb would, in some cases, fall below the EPA's actionable level of 15 ppb.

But because the community Flint serves is so large, it must meet a different threshold, 5 ppb. If a second round of testing showed that lead levels continued to exceed it, Flint would be required to improve its method of corrosion control.

Water sampled between January and June of 2015 showed an alarming increase: lead levels had risen to 11 ppb.

That kind of testing, Shekter Smith said, is the most reliable way to determine whether corrosion control is working.

"Having it in place is best way to know what is happening out in the system," she said.

Given the elevated blood-lead levels in Flint kids, the damage lead can cause, and the permanence of that damage, is that enough?

"I think that we are following the protocol," she said, "and the protocol got us to the right place, and we're making the right decisions."

“It did?" said Erik Olson, a senior strategy director for the Washington, D.C.-based Natural Resources Defense Council. "It didn’t sound like it."

Because the composition of water varies so greatly, there's no one right way to do corrosion control, Olson said. But Flint's plan to use lime only should have prompted questions before switching to Flint River water.

"They definitely should have said, 'OK, what's the basis of that decision? What's your engineering study that shows that that's optimizing your corrosion control?' " Olson said.

That Flint's river water would pass through pipes with lead components shouldn't have been surprising, Olson said -- the presence of lead in the water and sewage infrastructure is well-documented, and well-known.

So why didn't Flint's engineers account for that, when developing a treatment plan? That's just one of the questions I still can't answer.

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http://www.detroitnews.com/story/news/local/michigan/2015/10/08/flint-health-experts-support-detroit-water-reconnection/73568654/

Flint health experts support Detroit water reconnection

Detroit News Staff and wire reports 7:58 a.m. EDT October 8, 2015

Flint — A committee of local experts in health, water and science has recommended that Flint reconnect to Detroit's water system.

Flint administrator Natasha Henderson urged the committee to not think about cost and decide "what's in the best interest" for Flint, which has a water crisis due to elevated levels of lead in children.

The Technical Advisory Committee met Wednesday. It rarely meets, but state officials say it will have a role in Flint's water quality. The committee has no formal role in deciding whether Flint stops using the Flint River for water.

Flint has a public health emergency due to corrosive water leaching lead from old pipes. A Virginia Tech researcher says there would be dramatic reductions in about a month if the Detroit water system is used.

Gov. Rick Snyder's administration last week said it was considering temporarily reconnecting Flint to Detroit's water system temporarily in a bid to tackle the ongoing water quality and lead issues. The state also planned to expedite construction of a new water line to Lake Huron so a planned water authority that would service Flint could operate as soon as possible. An announcement on the Flint water plan was expected Thursday.

Sara Wurfel, a spokeswoman for Snyder, said the recommendation Wednesday "is an option we're helping thoroughly review and consider with the city, and the technical advisory committee's work is much appreciated in this matter. We're also focused on working hard in collaboration with all and implementing the key action steps outlined on Oct. 2 to help protect public health and ensure safe, accessible drinking water for Flint residents."

Since 2014, the Genesee County city has drawn its drinking water from the Flint River, which has led to major problems for residents.

Last month, the city issued an advisory about its drinking water after concerns surfaced about lead contamination.

On Tuesday, Snyder's administration made free water filters available for residents.

Meanwhile, Uber drivers began collecting donations of bottled water for Flint schools. And Mayor Dayne Walling this week said he gave to Flint Community Schools some 19 palettes Kroger grocers donated.

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http://www.mlive.com/news/flint/index.ssf/2015/10/donors_show_support_by_giving.html

Uber, others join in efforts to pour clean water into Flint

By Jiquanda Johnson | jjohns16@mlive.com The Flint Journal Follow on Twitter on October 08, 2015 at 5:00 AM, updated October 08, 2015 at 5:06 AM

FLINT, MI -- Businesses, charities and individuals have donated thousands of bottles of water to city of Flint residents and students since last year after controversy erupted over the quality of the city's water. Here is a list of some of the donors.

- □□□□□□□□ The United Way of Genesee County has actively participated in looking at ways to ease water woes in the city of Flint.

- □□□□□□□□ ZeroWater partnered with United Way and Flint Community Schools early October to bring water filters to the school district as a solution instead of having students drink bottled water.

- □□□□□□□□ Uber announced on Oct. 6 that drivers in Detroit will pick up donated bottles of water to bring to Flint throughout the week. People in Detroit just have to use their Uber link to notify drivers that water needs to be picked up. The initiative runs from 2 to 7 p.m. from Oct. 6 - 8.

- □□□□□□□□ There was another donation of more than 4,000 gallons of bottled water through the Flint Diaper Bank and United Way of Genesee County on Oct. 7.

- Donations came in from Flint-area Home Depots and Sam's Club after Hurley Medical Center doctors revealed that lead levels in children in Flint had elevated after the city switched from Detroit's water source to the Flint River.

- Mott Community College issued an Oct. 7 media release saying they are donating bottled water to Pierce Elementary School on the city's north side on Oct. 8.

- Swan Valley High School in Saginaw is collecting bottled water to send to Flint Public Schools. The bottled water drive ends Oct. 9 and school officials are hoping to drop donations off to Flint Community Schools on Oct. 9.

- Bendle High School sophomore Chase Harrison raised money to purchase bottled water for Flint Community Schools.

- Lavish Living, a Flint-based organization, has donated at least 200 cases of water to Flint Community Schools. As of Oct. 6 the organization was still working to collect more water for students.

- The Flint Northwestern football team delivered an estimated 40 cases of water on Oct. 5 to Flint area residents between Dupont, Clio, Carpenter and Pierson roads.

- General Motors Foundation

- In January, Sargent Title Co. collected about 600 cases of water to donated to Flint residents.

- Absopure Water Corp. donated a semi-truck worth of bottled water to Flint residents in January.

- 1st Congregational United Church of Christ in Kalamazoo donated 4,000 bottles of water in September.

- Al Serra Auto Plaza announced Oct. 7 that they will serve as drop off location for bottled water donations. If donors give 12 or more bottles of water, the dealership is offering free tire rotation.

- In March, members of the Michigan National Action Network provided an estimated 10,000 bottles of water to Flint residents.

•□□□□□□□□ District leaders also expect at least 1,000 cases of bottled water to arrive at the Food Bank on Wednesday, Oct. 7, from the Saginaw Chippewa Indian Tribe and Soaring Eagle Waterpark and Hotel and Soaring Eagle Casino and Resort.

The Flint Journal will do updates as more donor names are provided. If anyone has donor information make a note of it in the comments section of this post, or email The Flint Journal at flnews@mlive.com.

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http://michronicleonline.com/2015/10/07/flint-water-crisis-a-bitter-indictment-of-dysfunctional-emergency-manager/

Flint water crisis a bitter indictment of dysfunctional emergency manager

By Curt Guyette, Special to The Michigan Chronicle

Stark evidence of how terribly bad things can go when democracy is dismantled can be found in the elevated levels of lead in the children of Flint.

Because of decisions made by an appointed emergency manager, the tragically high costs of trying to balance a budget by switching to an unsafe water source will be borne by kids now forced to struggle with lower IQs, behavioral problems, learning disabilities, and a host of other ill effects.

This is what can happen when people are denied full access to representative government; they get poisoned by appointees with no connection to the community. Under Michigan's emergency manager law – PA 436 — gubernatorial appointees can leave town claiming to have successfully solved a fiscal crisis when in fact what they leave in their wake is a catastrophe of monumental proportions.

In recent days, as the lead problems in Flint have made international news, former Flint emergency manager Darnell Earley – the man in charge when the switch to the Flint River was made, and who is now overseeing the education of the children in Detroit Public Schools – has tried to deny any responsibility for the catastrophe.

According to the Detroit Free Press, Earley claimed in an e-mailed statement "that he was not involved in the decision to use river water."

The governor's office and Earley can rightfully claim that the Flint mayor and City Council initially gave their blessing to the switch made 18 months ago. But that fig leaf provides little real cover for the state officials now trying to run away from their disastrous decision.

For starters, it doesn't matter what the mayor and City Council had to say when the decision was made. The emergency manager, under the sweeping powers granted under Public Act 436, had complete authority to make the switch regardless of what Flint's elected officials wanted.

Moreover, those officials were in essence working for the emergency manager, not the people who elected them. The EM decided how much pay the mayor and council members drew, and how much power they could wield.

How do things go when appointed officials try to buck the control of an EM? As we've seen in Benton Harbor and Detroit Public Schools, the answer is that they get denuded of all power and are completely marginalized.

The message to elected officials under state control has been made perfectly clear: play ball with the EM, or else.

But there is another problem with the EM law as well, one made painfully obvious in Flint. In a normally-functioning democracy, when it came time for a city of Flint to conduct tests to show it is in compliance with federal drinking water regulations, the city would be an independent actor with the Michigan Department of Environmental Quality (MDEQ) serving as a separate check on the system, another independent actor providing oversight to make sure the job is done correctly.

Instead, with Governor Rick Snyder's man being the one in charge when the decision was made to start using river water – a decision that was almost instantly revealed to be fraught with problems – the MDEQ, instead of being a watchdog protecting the citizens of Flint, served as a collaborator, working with the city to do everything in their power to skew results so that their tests would make it appear that the water was safe when it wasn't.

How do we know it wasn't safe? Because grassroots citizen groups worked with researchers at Virginia Tech and the ACLU of Michigan to conduct an independent test of nearly 300 city homes and found that the problem was far worse than the city and state claimed.

When those results were released in mid-September, the response by the state was to try and discredit them. The same was true a week later, when a Hurley Children's Hospital study found the number of children with elevated lead levels doubled after the switch to the Flint River was made.

Those two studies, and the host of problems with the state and city's water testing, last week prompted the ACLU of Michigan, the Natural Resources Defense Council, and an array of civic groups to file a petition with the U.S. EPA, calling upon the federal government to come in and provide the oversight necessary to ensure Flint's water is clean and safe.

Finally, after the state's own data confirmed those findings, and Genesee County officials took the drastic step of declaring a public health emergency, the governor and MDEQ were forced to finally admit the truth and started taking some action.

But even if those measures are enough – and they may well not be, failing as they do to require a switch back to the much cleaner and far less corrosive Detroit system – the damage already caused by this governor and his emergency managers is irreversible for the children who will struggle for the rest of their lives because of the decisions made while Flint was under state control and democracy was suspended.

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Jeff Kelley
Director, Office of External Communications
U.S. EPA Region 5
ph: 312-353-1159

To: Henry, Timothy[henry.timothy@epa.gov]
From: Hyde, Tinka
Sent: Thur 10/8/2015 2:27:29 PM
Subject: Fwd: Notes from Governor’s Flint announcement

FYI

Sent from my iPhone

Begin forwarded message:

From: "Kelley, Jeff" <kelley.jeff@epa.gov>
Date: October 8, 2015 at 9:26:23 AM CDT
To: "Hedman, Susan" <hedman.susan@epa.gov>
Cc: "Hyde, Tinka" <hyde.tinka@epa.gov>, "Rowan, Anne" <rowan.anne@epa.gov>
Subject: RE: Notes from Governor’s Flint announcement

Second batch …

Dan Wyant:

- Reporting on some of the test results we received from schools … results from initial screening are consistent with last round of tests … 4 of 37 samples exceeding 15 ppb action level (3 schools). One test was 101 ppb. More sampling needs to occur.

- Data underscores the need for a complete and thorough plumbing evalustion of all Flint schools. We have a protocol (developed with EPA’s Susan Hedman and Tom Burt).

- Will work with county health department to conduct this testing. Protocol based on similar work conducted in Michigan and elsewhere.

- After evaluation, will assist each school to develop a plan to address issues. Schools should continue to use bottled water until after evaluation assessments are complete.

Nick Lyons, MDHHS:

- Providing 8 staff – potentially including toxicologist – to assist.

- □□□□□□□□ Schools should continue to use bottled/filtered water.

- □□□□□□□□ Residents should use filtered water. Have distributed more than 6,000 NSF certified filtered. [Lots of detail about where, when residents should go to get filters]

- □□□□□□□□ Residents should flush pipes, only use cold water for consumption, cooking, etc.

Dr. Eden Wells:

- □□□□□□□□ Rest assured that the filters are NSF certified for lead reduction.

- □□□□□□□□ Ordering replacements for residents … more details to come.

- □□□□□□□□ Lead exposure comes from a number of environmental sources … lead based paint is the predominant source.

- □□□□□□□□ Encourage parents with concerns to seek testing for their children. There are a number of steps parents can take to reduce lead exposure for their children…

State Sen. Ananich:

- □□□□□□□□ Thanks to Marc Edwards, Dr. Mona?, United Way

- □□□□□□□□ “No one has been a louder and more persistent voice than I have been”

[Emcee Harvey? pushes back on State Sen. … we’re all very concerned, many organizations involved]

Mott Foundation:

- □□□□□□□□ We hope the return to Detroit and eventual new pipeline will restore confidence and protect children … that’s why contributing $4 million.

•□□□□□□□□ Cities across the country struggle with aging infrastructure … hope this will spark federal effort

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Jeff Kelley
Director, Office of External Communications
U.S. EPA Region 5
ph: 312-353-1159

From: Kelley, Jeff
Sent: Thursday, October 08, 2015 9:11 AM
To: Susan Hedman
Cc: Hyde, Tinka; Rowan, Anne (rowan.anne@epa.gov)
Subject: Notes from Governor's Flint announcement

Rough notes from the first two speakers … more to come. DEQ up next.

Gov. Snyder:

•□□□□□□□□ Thanking the Mott Foundation … follow up on what we did last week. Continuing to do last week's actions, but some additional action steps we're looking to tangibly take

•□□□□□□□□ Tech advisory committee made a recommendation about switching to Great Lakes Water Authority / Detroit … "I'm in full support of a return to the GLWA" … I support the mayor in his desire to move in that direction

•□□□□□□□□ We believe it will be better for public safety … some financial issues … about a $12 million incremental cost. Will recommend to legislature to provide $6 million toward that cost. Mott Foundation will kick in $4 million. Flint will find $2 million.

•□□□□□□□□ <video froze>

•□□□□□□□□ Asking for $4 million to continue with what was discussed last week … testing, water filters, people for analysis and work, including lead education

•□□□□□□□□ U.S. EPA has been excellent to work with

Dayne Walling:

- City has decided to switch back to Detroit water … fastest way to protect public health and stabilize Flint’s water system.

- City is already working diligently to make the reconnection … discussion around optimal corrosion control has already started

- Monday 2 p.m. press briefing

- EPA technical assistance will be involved from the beginning so best practices will be in place

- Reconnecting to Detroit is a major step toward safe water, but rehab project will take more time and money. State and EPA working with city on immediate and long term steps.

- Lead service lines need to be replaced

- Important lessons from Flint’s experience … need to look at state and federal water rules, etc.

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Jeff Kelley
Director, Office of External Communications
U.S. EPA Region 5
ph: 312-353-1159

To: Henry, Timothy[henry.timothy@epa.gov]
From: Hyde, Tinka
Sent: Thur 10/8/2015 2:27:15 PM
Subject: Fwd: Notes from Governor's Flint announcement

Sent from my iPhone

Begin forwarded message:

> **From:** "Kelley, Jeff" <kelley.jeff@epa.gov>
> **Date:** October 8, 2015 at 9:11:19 AM CDT
> **To:** "Hedman, Susan" <hedman.susan@epa.gov>
> **Cc:** "Hyde, Tinka" <hyde.tinka@epa.gov>, "Rowan, Anne" <rowan.anne@epa.gov>
> **Subject: Notes from Governor's Flint announcement**
>
> Rough notes from the first two speakers … more to come. DEQ up next.
>
> Gov. Snyder:
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> •□□□□□□□□ Thanking the Mott Foundation … follow up on what we did last week. Continuing to do last week's actions, but some additional action steps we're looking to tangibly take
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>
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Director, Office of External Communications
U.S. EPA Region 5
ph: 312-353-1159

To: Hedman, Susan[hedman.susan@epa.gov]
Cc: Hyde, Tinka[hyde.tinka@epa.gov]; Rowan, Anne[rowan.anne@epa.gov]
From: Kelley, Jeff
Sent: Thur 10/8/2015 2:43:32 PM
Subject: RE: Notes from Governor's Flint announcement

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From: Hyde, Tinka
Sent: Thur 10/8/2015 2:45:05 PM
Subject: FW: Notes from Governor's Flint announcement

Fyi Just ended

From: Kelley, Jeff
Sent: Thursday, October 08, 2015 9:44 AM
To: Hedman, Susan
Cc: Hyde, Tinka; Rowan, Anne
Subject: RE: Notes from Governor's Flint announcement

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ph: 312-353-1159

To: Henry, Timothy[henry.timothy@epa.gov]
From: Hedman, Susan
Sent: Thur 10/8/2015 2:45:54 PM
Subject: Fwd: Notes from Governor's Flint announcement

Sent from my iPhone

Begin forwarded message:

From: "Kelley, Jeff" <kelley.jeff@epa.gov>
Date: October 8, 2015 at 10:43:32 AM EDT
To: "Hedman, Susan" <hedman.susan@epa.gov>
Cc: "Hyde, Tinka" <hyde.tinka@epa.gov>, "Rowan, Anne" <rowan.anne@epa.gov>
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Cc: Hyde, Tinka[hyde.tinka@epa.gov]; Rowan, Anne[rowan.anne@epa.gov]
From: Hedman, Susan
Sent: Thur 10/8/2015 2:54:06 PM
Subject: Re: Notes from Governor's Flint announcement

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Second batch …

Dan Wyant:

•□□□□□□□□ Reporting on some of the test results we received from schools … results from initial screening are consistent with last round of tests … 4 of 37 samples exceeding 15 ppb action level (3 schools). One test was 101 ppb. More sampling needs to occur.

•□□□□□□□□ Data underscores the need for a complete and thorough plumbing evalustion of all Flint schools. We have a protocol (developed with EPA's Susan Hedman and Tom Burt).

- Will work with county health department to conduct this testing. Protocol based on similar work conducted in Michigan and elsewhere.

- After evaluation, will assist each school to develop a plan to address issues. Schools should continue to use bottled water until after evaluation assessments are complete.

Nick Lyons, MDHHS:

- Providing 8 staff – potentially including toxicologist – to assist.

- Schools should continue to use bottled/filtered water.

- Residents should use filtered water. Have distributed more than 6,000 NSF certified filtered. [Lots of detail about where, when residents should go to get filters]

- Residents should flush pipes, only use cold water for consumption, cooking, etc.

Dr. Eden Wells:

- Rest assured that the filters are NSF certified for lead reduction.

- Ordering replacements for residents … more details to come.

- Lead exposure comes from a number of environmental sources … lead based paint is the predominant source.

- Encourage parents with concerns to seek testing for their children. There are a number of steps parents can take to reduce lead exposure for their children…

State Sen. Ananich:

- Thanks to Marc Edwards, Dr. Mona?, United Way

- “No one has been a louder and more persistent voice than I have been”

[Emcee Harvey? pushes back on State Sen. … we're all very concerned, many organizations involved]

Mott Foundation:

•□□□□□□□□ We hope the return to Detroit and eventual new pipeline will restore confidence and protect children … that's why contributing $4 million.

•□□□□□□□□ Cities across the country struggle with aging infrastructure … hope this will spark federal effort

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Jeff Kelley
Director, Office of External Communications
U.S. EPA Region 5
ph: 312-353-1159

From: Kelley, Jeff
Sent: Thursday, October 08, 2015 9:11 AM
To: Susan Hedman
Cc: Hyde, Tinka; Rowan, Anne (rowan.anne@epa.gov)
Subject: Notes from Governor's Flint announcement

Rough notes from the first two speakers … more to come. DEQ up next.

Gov. Snyder:

•□□□□□□□□ Thanking the Mott Foundation … follow up on what we did last week. Continuing to do last week's actions, but some additional action steps we're looking to tangibly take

•□□□□□□□□ Tech advisory committee made a recommendation about switching to Great Lakes Water Authority / Detroit … "I'm in full support of a return to the GLWA" … I support the mayor in his desire to move in that direction

•□□□□□□□□ We believe it will be better for public safety … some financial issues … about a $12 million incremental cost. Will recommend to legislature to provide $6 million toward that cost. Mott Foundation will kick in $4 million. Flint will find $2 million.

•□□□□□□□□ <video froze>

•□□□□□□□□ Asking for $4 million to continue with what was discussed last week … testing, water filters, people for analysis and work, including lead education

•□□□□□□□□ U.S. EPA has been excellent to work with

Dayne Walling:

•□□□□□□□□ City has decided to switch back to Detroit water … fastest way to protect public health and stabilize Flint's water system.

•□□□□□□□□ City is already working diligently to make the reconnection … discussion around optimal corrosion control has already started

•□□□□□□□□ Monday 2 p.m. press briefing

•□□□□□□□□ EPA technical assistance will be involved from the beginning so best practices will be in place

•□□□□□□□□ Reconnecting to Detroit is a major step toward safe water, but rehab project will take more time and money. State and EPA working with city on immediate and long term steps.

•□□□□□□□□ Lead service lines need to be replaced

•□□□□□□□□ Important lessons from Flint's experience … need to look at state and federal water rules, etc.

Jeff Kelley
Director, Office of External Communications
U.S. EPA Region 5
ph: 312-353-1159

To: Kelley, Jeff[kelley.jeff@epa.gov]
Cc: Rowan, Anne[rowan.anne@epa.gov]
From: Hyde, Tinka
Sent: Thur 10/8/2015 2:56:07 PM
Subject: RE: Draft updated Flint statement

Additional thoughts are below – you will need to tweak as it's a bit awkward.

From: Hyde, Tinka
Sent: Thursday, October 08, 2015 9:02 AM
To: Kelley, Jeff
Cc: Rowan, Anne
Subject: RE: Draft updated Flint statement

See my suggestions below

From: Kelley, Jeff
Sent: Thursday, October 08, 2015 8:45 AM
To: Hyde, Tinka
Cc: Rowan, Anne
Subject: Draft updated Flint statement

Here's a first crack…

Last week's statement:

Actions that the State of Michigan and the City of Flint announced today are important steps to protect public health. The immediate steps being taken to implement corrosion control will reduce lead in drinking water, as required by the Safe Drinking Water Act. US EPA will continue to provide technical assistance to the State of Michigan and the City of Flint to support their joint effort.

Draft updated statement:

U.S. EPA supports the decision of the city of Flint to return to using Detroit water. This, and the other actions announced last week, are important steps to protect public health. Over time, Flint will benefit from the corrosion control treatment already implemented by Detroit, as required by the Safe Drinking Water Act. However, in the near-term the State of Michigan and City of Flint continued efforts to protect public health will be needed. U.S. EPA will continue to provide technical assistance to the State of Michigan and the City of Flint to support their joint effort.

U.S. EPA supports the decision of the city of Flint to return to using Detroit water. This, and the other actions announced last week, are important steps to protect public health. Flint will benefit from the corrosion control treatment already implemented by Detroit, but more steps may be needed to reduce lead in drinking water, as required by the Safe Drinking Water Act. U.S. EPA will continue to provide technical assistance to the State of Michigan and the City of Flint to support their joint effort.

Jeff Kelley
Director, Office of External Communications
U.S. EPA Region 5
ph: 312-353-1159

From: Hedman, Susan
Sent: Thursday, October 08, 2015 8:27 AM
To: Kelley, Jeff; Rowan, Anne
Cc: Harrison, Melissa
Subject: Re: Flint clips for morning of Oct. 8

Please rework the statement in anticipation of an announcement that the state will provide funding for a return to Detroit water.

Sent from my iPhone

On Oct 8, 2015, at 9:11 AM, Kelley, Jeff <kelley.jeff@epa.gov> wrote:

> Note that Gov. Snyder is expected to make an announcement at 10 a.m. Eastern. The state will be livestreaming the announcement at http://1.usa.gov/1QapVxk
>
> •□□□□□□□□ Gov. Snyder says he'll make announcement on Flint water Thursday (Flint Journal)
>
> •□□□□□□□□ Governor plans 10 a.m. announcement on troubled Flint water system (Associated Press)
>
> •□□□□□□□□ Flint Officials Are No Longer Saying the Water Is Fine (New York Times)
>
> •□□□□□□□□ Waiting for answers, action in Flint water crisis (Detroit Free Press)
>
> •□□□□□□□□ Flint health experts support Detroit water reconnection (Detroit News)
>
> •□□□□□□□□ Uber, others join in efforts to pour clean water into Flint (Flint Journal)
>
> •□□□□□□□□ Flint water crisis a bitter indictment of dysfunctional emergency manager (Michigan Chronicle)

> http://www.mlive.com/news/flint/index.ssf/2015/10/gov_snyder_says_hell_make_anno.html
>
> **Gov. Snyder says he'll make announcement on Flint water Thursday**
>
> By Ron Fonger | rfonger1@mlive.com The Flint Journal on October 07, 2015 at 9:45 PM, updated October 08, 2015 at 8:08 AM

FLINT, MI -- Gov. Rick Snyder says on Twitter that he will make an announcement about Flint water at 10 a.m. Thursday.

The planned announcement comes less than 24 hours after Flint's Technical Advisory Committee recommended the city end its use of the Flint River as its water source.

Since making the switch from using pre-treated Lake Huron water from the city of Detroit to treating river water at its own plant in April 2014, Flint officials have struggled to maintain the quality and safety of water delivered to city residents.

Snyder's Twitter message says, "Watch live tomorrow at 10 a.m. as I make an announcement regarding Flint water" at mi.gov/SnyderLive.

The state's Web site says the governor will be joined by Flint Mayor Dayne Walling, other state officials, and Ridgway White of the Charles Stewart Mott Foundation.

High levels of lead in city water and in the blood of children and infants since the city changed its water source have triggered a public health emergency here, including the mass distribution of lead-clearing faucet filters and bottled water.

Researchers from Virginia Tech university say river water has proven to be far more corrosive than water from the Detroit Water and Sewerage Department, causing lead to leach into homes that have lead service lines.

Flint City Administrator Natasha Henderson said today, Oct. 7, that she believes the position of state officials has been shifting on continued use of the Flint River, a change that was made while Flint was being run by a state-appointed emergency manager.

"We're to the point that the state believes this is a public health emergency," Henderson told the City Council. "From what I see, the state is working very well with us."

The city administrator is among officials who have advocated for a return to buying water from the DWSD since a study was released last month by Hurley Medical Center's director of pediatric residency program.

The study showed the percentage of Flint infants and children with above average lead levels has nearly doubled citywide since the switch to river water, and has nearly tripled among children in "high risk" areas of lead exposure.

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http://www.macombdaily.com/general-news/20151008/governor-plans-10-am-announcement-on-troubled-flint-water-system

Governor plans 10 a.m. announcement on troubled Flint water system

FLINT (AP) — Gov. Rick Snyder plans an announcement about the water system in Flint, which is facing a public health emergency over lead in its water.

A posting on the state's website says Snyder on Thursday morning will be joined for the announcement by officials including Flint Mayor Dayne Walling, state Department of Environmental Quality Director Dan Wyant and state Department of Health and Human Services Director Nick Lyon.

The announcement comes a day after a committee of local experts in health, water and science recommended Flint reconnect to Detroit's water system while it awaits a new pipeline to Lake Huron.

Flint has a public health emergency due to corrosive water leaching lead from old pipes. State government and nonprofit groups are distributing filters and bottled water to Flint homes and schools.

Snyder's announcement can be viewed live at 10 a.m. Thursday, Oct. 8 by visiting http://1.usa.gov/1QapVxk

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http://www.nytimes.com/2015/10/08/us/reassurances-end-in-flint-after-months-of-concern.html

Flint Officials Are No Longer Saying the Water Is Fine

By MONICA DAVEY, New York Times, OCT. 7, 2015

FLINT, Mich. — All along, through months of complaints from residents of this city about the peculiar colors and odors they said were coming from their faucets, the overriding message from the authorities here was that the water would be just fine.

Yes, there had been a boil order when fecal coliform bacteria turned up in some neighborhoods last year. And yes, the extra chlorine that was pumped in to solve that problem seemed to create another one — increased levels of a different contaminant.

Still, the guidance from Flint officials about the temporary water supply they switched to in 2014 — partly to save money — sounded assuring. In a notice sent to residents in July, city officials declared: "This is not an emergency. If a situation arises where the water is no longer safe to drink, you will be notified within 24 hours."

The soothing talk has vanished. In recent weeks, testing has shown increased levels of lead in the blood of some Flint children — and health officials pointed to the water as a possible source.

First, the city advised residents to run their water for five minutes before using it, to use only cold water for drinking and cooking, and to install lead-removing water filters. Then county officials issued an emergency advisory recommending that people not drink Flint's water unless it is tested for lead or filtered.

And last Friday, after corroborating that lead levels had risen in some children, state officials called for the water to be tested at all Flint public schools and for stepped-up efforts to replace lead service lines; they also promised $1 million to provide filters.

Officials met here on Wednesday afternoon, and talks were underway, officials said, for additional solutions that could come as early as Thursday. Gov. Rick Snyder said on Twitter late Wednesday that he planned to make an announcement about the situation on Thursday morning.

Private groups have raced to donate bottled water to schools, where the water fountains are now shut off, as well as filters to families who cannot afford them. Saying "we're just in a heck of a bind," Robert J. Pickell, the Genesee County sheriff, began serving bottled water and food that need not be cooked in water to hundreds of inmates in the county jail. Some residents have begun washing their children and pets with bottled water.

And Flint's mayor, Dayne Walling, who had attended a 2014 event to celebrate the switch to the new water supply, called for returning to the city's old water supply and urged state officials to provide millions of dollars to help pay for it.

The contaminated water was just the latest blow to Flint, an economically battered city that has struggled for years with factory closings, job losses and population decline.

Along Saginaw Street downtown, where at least one business had an “un-leaded” sign posted by a jug of water, residents had lingering questions: Would filters really do enough to make the water safe? What about unfiltered showers? Could they rely on the water at work and at restaurants? And why had it taken so long for leaders to figure out that there was a problem?

“I don’t think people know what’s going on at all,” said Chris Thornton, 49, who described the first blast of water from his faucets some days as looking like urine, smelling like bleach and tasting of metal. After his wife, Ronda, 50, felt sick to her stomach for months, the Thorntons began buying jugs of bottled water, though the price — on top of an already steep water bill — has been overwhelming.

“As far as my family,” Ronda Thornton said, “we’ve just given up on the city’s water.”

Flint’s water problems are tied inextricably to its fiscal woes. In 1960, nearly 200,000 people lived here. But auto plants closed, and the population has dropped by half. By 2011, Flint’s shrunken tax base and seemingly intractable budget problems prompted Mr. Snyder to appoint an emergency manager for the city. Over the next four years, the city had four managers overseeing operations. Along the way, the city switched its water supply.

For decades, the city bought water from Detroit, which treated water from Lake Huron, then piped it here, 70 miles to the northwest. But with the costs mounting, Flint’s leaders decided they could save millions by joining a new regional authority that would draw and treat its own water from Lake Huron.

There was one complication: Flint needed an alternative water supply from April 2014 until the new regional system is ready, probably next year. In the interim, Flint switched to using water from the Flint River, which state officials say had been a backup source in the past.

Ask residents about the Flint River, and many of them roll their eyes. They say it was once as a dumping ground for car parts, grocery carts and refrigerators. There have been significant improvements and intensive restoration campaigns in recent years, though a Flint River Fest set for Friday has been postponed, organizers said, given the “current drinking water crisis.”

Even now, state officials say that treated Flint River water is safe and capable of meeting state and federal standards. Officials say the problem may be that some of the aging pipes and service lines that carry water into Flint’s homes and businesses contain lead and are being corroded by water. The water Flint used to receive from Detroit was treated with chemicals intended to prevent such corrosion.

For months, questions about lead and other risks multiplied. “Everyone kept saying: ‘It’s safe! It’s safe! It’s safe!’ ” recalled Melissa Mays, a Flint resident who says she was sickened by the water and has helped organize residents over the issue.

Then in September, a researcher from Virginia Tech released findings from the water in hundreds of Flint homes showing elevated lead levels. Blood tests released by a local pediatrician — and corroborated last week by state officials analyzing their own testing — showed an increase in lead levels in children in some neighborhoods since 2014, when the city began drawing water from the river.

“We all have a concern about Flint’s drinking water in terms of what we’re seeing in terms of lead,” Mr. Snyder said last week.

Mr. Walling said that the move to river water occurred when an emergency manager controlled the city, though the City Council did vote for the city’s plans for a new, regional water system. He acknowledged supporting the move in a state of the city address, but said that he had not been given sufficient information about the safety risks.

“I had to work with what I knew at the time,” Mr. Walling, who is up for election next month, said in an interview.

But for many residents, the authorities failed the city by taking so long to react. “Anytime you have to weigh money against the health and welfare of people, it always has to be the health and welfare you go with,” said the Rev. Alfred Harris, a local pastor who has stopped conducting baptisms at his church because of concerns about the water. “We’ve been talking about this for the last 14 months, and they did not give a sincere ear to any of us. Shame on you!”

LeeAnne Walters said her son, Gavin, 4, who has immune system issues, had suffered direct consequences. After the switch to river water, which sometimes looked brown in their house, Gavin dropped to 27 pounds, far below the weight of his twin brother, she said. He sometimes seemed unable to pronounce words he knew, she said, and then test results showed an elevated lead level in his blood.

“He is going to deal with the side effects of this for the rest of his life,” Ms. Walters said. “I don’t think there’s a word angry enough to describe my anger. I trusted the city, and I helped the city poison my kid. Who thought this could happen in the United States?”

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http://www.freep.com/story/opinion/columnists/nancy-kaffer/2015/10/07/flint-water-crisis/73534078/

Waiting for answers, action in Flint water crisis

By Nancy Kaffer, Detroit Free Press Columnist 10:27 p.m. EDT October 7, 2015

They are still waiting for answers about the water in Flint.

And it's hard to say when, or if, those answers are coming.

It has been two weeks since a hospital researcher found that more Flint kids had been lead poisoned since the city switched its municipal water supply. And it has been nearly a week since the State of Michigan abruptly changed its posture, acknowledging, after months of denial and empty assurances, that Flint's water supply was compromised.

Since then, a lot of folks have worked diligently to sort out how things went so badly wrong in this small, impoverished city, and what the State of Michigan is doing to fix it.

But solutions remain elusive.

The state announced Friday that it has devoted $1 million to provide water filters for Flint residents, is expanding water testing and expediting improved water treatment. But two weeks on, Flint hasn't started adding chemicals to its water that would allow it to pass safely through the city's lead service pipes. That plan can likely be ready within a week, and can be enacted as soon as it's approved by the Michigan Department of Environmental Quality. Scientists say it would take roughly a month before those chemicals would begin to effect Flint's drinking water.

That would be the right play, unless the city opts to rejoin the Detroit Water and Sewerage Department -- as water experts have recommended -- a decision that would likely require financial assistance from the State of Michigan but could result in potable water flowing from Flint taps within two weeks. Is it likely to happen? Your guess is as good as mine.

And state officials continue to insist that the rules designed to monitor water systems, to ensure safe drinking water, worked as they're supposed to.

Kids in danger

The effects of lead on children are irreversible. Lead-poisoned kids can experience a host of behavioral and developmental problems, and in two Flint ZIP codes, the percentage of children affected by lead has doubled, reversing a long trend of improving rates.

That's because in 2014, Flint decided to pump untreated water from the Flint River, ending a decades-long relationship with the Detroit Water and Sewerage Department, while a new regional water authority it's joining is under construction. Since then, Flint's been treating its water locally, prompting a rash of problems related to coliform bacteria, a disinfectant and its byproduct, and now, elevated lead.

Both of these decisions were made while Flint was under state oversight, during the appointments of a series of emergency managers appointed by and answerable to Gov. Rick Snyder. The Michigan Department of Environmental Quality, whose director is appointed by the governor, must ensure that water systems are producing safe drinking water. Because Flint's water decisions were made under Snyder's emergency managers, the governor's decision-making authority is one step closer to Flint's water crisis.

The water Flint bought from Detroit was "finished," in other words, safe for humans to drink, but also treated to create a film inside those pipes that kept the lead out. That's called "corrosion control," and Detroit achieved this goal by adding phosphates to the water it pumps from Lake Huron.

Flint doesn't.

It took an unreasonably long time to get a solid answer to this question.

Corrosion control

Since April 2014, treatment at Flint's plant has included adding lime to the water it distributed to customers, largely to make the water less acidic, Liane Shekter Smith, chief of the MDEQ's office of drinking water and municipal assistance, said Tuesday.

"There was no corrosion control plan put forward at the time of the switch," Shekter Smith said. "There was a belief that (acidity) adjustment would provide adequate corrosion control, and that rounds of testing would confirm or refute that."

Any new water supply must be tested at six-month intervals to determine whether it meets the guidelines of the federal lead and copper rule, a standard established by the U.S. Environmental Protection Agency.

Tests of Flint's drinking water showed roughly 6 parts per billion (how the presence of lead in water is reckoned) in water sampled between June and December of 2014, said MDEQ spokesman Brad Wurfel. The U.S. Centers for Disease Control and Prevention said there is no acceptable level of lead exposure, but 6 ppb would, in some cases, fall below the EPA's actionable level of 15 ppb.

But because the community Flint serves is so large, it must meet a different threshold, 5 ppb. If a second round of testing showed that lead levels continued to exceed it, Flint would be required to improve its method of corrosion control.

Water sampled between January and June of 2015 showed an alarming increase: lead levels had risen to 11 ppb.

That kind of testing, Shekter Smith said, is the most reliable way to determine whether corrosion control is working.

"Having it in place is best way to know what is happening out in the system," she said.

Given the elevated blood-lead levels in Flint kids, the damage lead can cause, and the permanence of that damage, is that enough?

"I think that we are following the protocol," she said, "and the protocol got us to the right place, and we're making the right decisions."

“It did?" said Erik Olson, a senior strategy director for the Washington, D.C.-based Natural Resources Defense Council. "It didn’t sound like it."

Because the composition of water varies so greatly, there's no one right way to do corrosion control, Olson said. But Flint's plan to use lime only should have prompted questions before switching to Flint River water.

"They definitely should have said, 'OK, what’s the basis of that decision? What’s your engineering study that shows that that’s optimizing your corrosion control?' " Olson said.

That Flint's river water would pass through pipes with lead components shouldn't have been surprising, Olson said -- the presence of lead in the water and sewage infrastructure is well-documented, and well-known.

So why didn't Flint's engineers account for that, when developing a treatment plan? That's just one of the questions I still can't answer.

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http://www.detroitnews.com/story/news/local/michigan/2015/10/08/flint-health-experts-support-detroit-water-reconnection/73568654/

Flint health experts support Detroit water reconnection

Detroit News Staff and wire reports 7:58 a.m. EDT October 8, 2015

Flint — A committee of local experts in health, water and science has recommended that Flint reconnect to Detroit's water system.

Flint administrator Natasha Henderson urged the committee to not think about cost and decide "what's in the best interest" for Flint, which has a water crisis due to elevated levels of lead in children.

The Technical Advisory Committee met Wednesday. It rarely meets, but state officials say it will have a role in Flint's water quality. The committee has no formal role in deciding whether Flint stops using the Flint River for water.

Flint has a public health emergency due to corrosive water leaching lead from old pipes. A Virginia Tech researcher says there would be dramatic reductions in about a month if the Detroit water system is used.

Gov. Rick Snyder's administration last week said it was considering temporarily reconnecting Flint to Detroit's water system temporarily in a bid to tackle the ongoing water quality and lead issues. The state also planned to expedite construction of a new water line to Lake Huron so a planned water authority that would service Flint could operate as soon as possible. An announcement on the Flint water plan was expected Thursday.

Sara Wurfel, a spokeswoman for Snyder, said the recommendation Wednesday "is an option we're helping thoroughly review and consider with the city, and the technical advisory committee's work is much appreciated in this matter. We're also focused on working hard in collaboration with all and implementing the key action steps outlined on Oct. 2 to help protect public health and ensure safe, accessible drinking water for Flint residents."

Since 2014, the Genesee County city has drawn its drinking water from the Flint River, which has led to major problems for residents.

Last month, the city issued an advisory about its drinking water after concerns surfaced about lead contamination.

On Tuesday, Snyder's administration made free water filters available for residents.

Meanwhile, Uber drivers began collecting donations of bottled water for Flint schools. And Mayor Dayne Walling this week said he gave to Flint Community Schools some 19 palettes Kroger grocers donated.

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http://www.mlive.com/news/flint/index.ssf/2015/10/donors_show_support_by_giving.html

Uber, others join in efforts to pour clean water into Flint

By Jiquanda Johnson | jjohns16@mlive.com The Flint Journal Follow on Twitter on October 08, 2015 at 5:00 AM, updated October 08, 2015 at 5:06 AM

FLINT, MI -- Businesses, charities and individuals have donated thousands of bottles of water to city of Flint residents and students since last year after controversy erupted over the quality of the city's water. Here is a list of some of the donors.

•□□□□□□□□ The United Way of Genesee County has actively participated in looking at ways to ease water woes in the city of Flint.

•□□□□□□□□ ZeroWater partnered with United Way and Flint Community Schools early October to bring water filters to the school district as a solution instead of having students drink bottled water.

•□□□□□□□□ Uber announced on Oct. 6 that drivers in Detroit will pick up donated bottles of water to bring to Flint throughout the week. People in Detroit just have to use their Uber link to notify drivers that water needs to be picked up. The initiative runs from 2 to 7 p.m. from Oct. 6 - 8.

•□□□□□□□□ There was another donation of more than 4,000 gallons of bottled water through the Flint Diaper Bank and United Way of Genesee County on Oct. 7.

•□□□□□□□□ Donations came in from Flint-area Home Depots and Sam's Club after Hurley Medical Center doctors revealed that lead levels in children in Flint had elevated after the city switched from Detroit's water source to the Flint River.

•□□□□□□□□ Mott Community College issued an Oct. 7 media release saying they are donating bottled water to Pierce Elementary School on the city's north side on Oct. 8.

•□□□□□□□□ Swan Valley High School in Saginaw is collecting bottled water to send to Flint Public Schools. The bottled water drive ends Oct. 9 and school officials are hoping to drop donations off to Flint Community Schools on Oct. 9.

•□□□□□□□□ Bendle High School sophomore Chase Harrison raised money to purchase bottled water for Flint Community Schools.

•□□□□□□□□ Lavish Living, a Flint-based organization, has donated at least 200 cases of water to Flint Community Schools. As of Oct. 6 the organization was still working to collect more water for students.

•□□□□□□□□ The Flint Northwestern football team delivered an estimated 40 cases of water on Oct. 5 to Flint area residents between Dupont, Clio, Carpenter and Pierson roads.

•□□□□□□□□ General Motors Foundation

•□□□□□□□□ In January, Sargent Title Co. collected about 600 cases of water to donated to Flint residents.

•□□□□□□□□ Absopure Water Corp. donated a semi-truck worth of bottled water to Flint residents in January.

•□□□□□□□□ 1st Congregational United Church of Christ in Kalamazoo donated 4,000 bottles of water in September.

•□□□□□□□□ Al Serra Auto Plaza announced Oct. 7 that they will serve as drop off location for bottled water donations. If donors give 12 or more bottles of water, the dealership is offering free tire rotation.

•□□□□□□□□ In March, members of the Michigan National Action Network provided an estimated 10,000 bottles of water to Flint residents.

•□□□□□□□□ District leaders also expect at least 1,000 cases of bottled water to arrive at the Food Bank on Wednesday, Oct. 7, from the Saginaw Chippewa Indian Tribe and Soaring Eagle Waterpark and Hotel and Soaring Eagle Casino and Resort.

The Flint Journal will do updates as more donor names are provided. If anyone has donor information make a note of it in the comments section of this post, or email The Flint Journal at flnews@mlive.com.

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http://michronicleonline.com/2015/10/07/flint-water-crisis-a-bitter-indictment-of-dysfunctional-emergency-manager/

Flint water crisis a bitter indictment of dysfunctional emergency manager

By Curt Guyette, Special to The Michigan Chronicle

Stark evidence of how terribly bad things can go when democracy is dismantled can be found in the elevated levels of lead in the children of Flint.

Because of decisions made by an appointed emergency manager, the tragically high costs of trying to balance a budget by switching to an unsafe water source will be borne by kids now forced to struggle with lower IQs, behavioral problems, learning disabilities, and a host of other ill effects.

This is what can happen when people are denied full access to representative government; they get poisoned by appointees with no connection to the community. Under Michigan's emergency manager law – PA 436 — gubernatorial appointees can leave town claiming to have successfully solved a fiscal crisis when in fact what they leave in their wake is a catastrophe of monumental proportions.

In recent days, as the lead problems in Flint have made international news, former Flint emergency manager Darnell Earley – the man in charge when the switch to the Flint River was made, and who is now overseeing the education of the children in Detroit Public Schools – has tried to deny any responsibility for the catastrophe.

According to the Detroit Free Press, Earley claimed in an e-mailed statement "that he was not involved in the decision to use river water."

The governor's office and Earley can rightfully claim that the Flint mayor and City Council initially gave their blessing to the switch made 18 months ago. But that fig leaf provides little real cover for the state officials now trying to run away from their disastrous decision.

For starters, it doesn't matter what the mayor and City Council had to say when the decision was made. The emergency manager, under the sweeping powers granted under Public Act 436, had complete authority to make the switch regardless of what Flint's elected officials wanted.

Moreover, those officials were in essence working for the emergency manager, not the people who elected them. The EM decided how much pay the mayor and council members drew, and how much power they could wield.

How do things go when appointed officials try to buck the control of an EM? As we've seen in Benton Harbor and Detroit Public Schools, the answer is that they get denuded of all power and are completely marginalized.

The message to elected officials under state control has been made perfectly clear: play ball with the EM, or else.

But there is another problem with the EM law as well, one made painfully obvious in Flint. In a normally-functioning democracy, when it came time for a city of Flint to conduct tests to show it is in compliance with federal drinking water regulations, the city would be an independent actor with the Michigan Department of Environmental Quality (MDEQ) serving as a separate check on the system, another independent actor providing oversight to make sure the job is done correctly.

Instead, with Governor Rick Snyder's man being the one in charge when the decision was made to start using river water – a decision that was almost instantly revealed to be fraught with problems – the MDEQ, instead of being a watchdog protecting the citizens of Flint, served as a collaborator, working with the city to do everything in their power to skew results so that their tests would make it appear that the water was safe when it wasn't.

How do we know it wasn't safe? Because grassroots citizen groups worked with researchers at Virginia Tech and the ACLU of Michigan to conduct an independent test of nearly 300 city homes and found that the problem was far worse than the city and state claimed.

When those results were released in mid-September, the response by the state was to try and discredit them. The same was true a week later, when a Hurley Children's Hospital study found the number of children with elevated lead levels doubled after the switch to the Flint River was made.

Those two studies, and the host of problems with the state and city's water testing, last week prompted the ACLU of Michigan, the Natural Resources Defense Council, and an array of civic groups to file a petition with the U.S. EPA, calling upon the federal government to come in and provide the oversight necessary to ensure Flint's water is clean and safe.

Finally, after the state's own data confirmed those findings, and Genesee County officials took the drastic step of declaring a public health emergency, the governor and MDEQ were forced to finally admit the truth and started taking some action.

But even if those measures are enough – and they may well not be, failing as they do to require a switch back to the much cleaner and far less corrosive Detroit system – the damage already caused by this governor and his emergency managers is irreversible for the children who will struggle for the rest of their lives because of the decisions made while Flint was under state control and democracy was suspended.

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Jeff Kelley
Director, Office of External Communications
U.S. EPA Region 5
ph: 312-353-1159

To: Hedman, Susan[hedman.susan@epa.gov]; Harrison, Melissa[Harrison.Melissa@epa.gov]
Cc: Hyde, Tinka[hyde.tinka@epa.gov]; Rowan, Anne[rowan.anne@epa.gov]
From: Kelley, Jeff
Sent: Thur 10/8/2015 3:15:18 PM
Subject: RE: Flint clips for morning of Oct. 8

Here's a draft revised statement:

U.S. EPA supports the city of Flint's decision to return to using Detroit water. This, and the other actions announced last week, are important steps to protect public health. Over time, Flint will benefit from the corrosion control treatment already implemented by Detroit, as required by the Safe Drinking Water Act. U.S. EPA will continue to provide technical assistance to the State of Michigan and the City of Flint to support their joint effort.

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Jeff Kelley
Director, Office of External Communications
U.S. EPA Region 5
ph: 312-353-1159

From: Hedman, Susan
Sent: Thursday, October 08, 2015 8:27 AM
To: Kelley, Jeff; Rowan, Anne
Cc: Harrison, Melissa
Subject: Re: Flint clips for morning of Oct. 8

Please rework the statement in anticipation of an announcement that the state will provide funding for a return to Detroit water.

Sent from my iPhone

On Oct 8, 2015, at 9:11 AM, Kelley, Jeff <kelley.jeff@epa.gov> wrote:

> Note that Gov. Snyder is expected to make an announcement at 10 a.m. Eastern. The state will be livestreaming the announcement at http://1.usa.gov/1QapVxk

•□□□□□□□□ Gov. Snyder says he'll make announcement on Flint water Thursday (Flint Journal)

•□□□□□□□□ Governor plans 10 a.m. announcement on troubled Flint water system (Associated Press)

•□□□□□□□□ Flint Officials Are No Longer Saying the Water Is Fine (New York Times)

•□□□□□□□□ Waiting for answers, action in Flint water crisis (Detroit Free Press)

•□□□□□□□□ Flint health experts support Detroit water reconnection (Detroit News)

•□□□□□□□□ Uber, others join in efforts to pour clean water into Flint (Flint Journal)

•□□□□□□□□ Flint water crisis a bitter indictment of dysfunctional emergency manager (Michigan Chronicle)

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http://www.mlive.com/news/flint/index.ssf/2015/10/gov_snyder_says_hell_make_anno.html

Gov. Snyder says he'll make announcement on Flint water Thursday

By Ron Fonger | rfonger1@mlive.com The Flint Journal on October 07, 2015 at 9:45 PM, updated October 08, 2015 at 8:08 AM

FLINT, MI -- Gov. Rick Snyder says on Twitter that he will make an announcement about Flint water at 10 a.m. Thursday.

The planned announcement comes less than 24 hours after Flint's Technical Advisory Committee recommended the city end its use of the Flint River as its water source.

Since making the switch from using pre-treated Lake Huron water from the city of Detroit to treating river water at its own plant in April 2014, Flint officials have struggled to maintain the quality and safety of water delivered to city residents.

Snyder's Twitter message says, "Watch live tomorrow at 10 a.m. as I make an announcement regarding Flint water" at mi.gov/SnyderLive.

The state's Web site says the governor will be joined by Flint Mayor Dayne Walling, other state officials, and Ridgway White of the Charles Stewart Mott Foundation.

High levels of lead in city water and in the blood of children and infants since the city changed its water source have triggered a public health emergency here, including the mass distribution of lead-clearing faucet filters and bottled water.

Researchers from Virginia Tech university say river water has proven to be far more corrosive than water from the Detroit Water and Sewerage Department, causing lead to leach into homes that have lead service lines.

Flint City Administrator Natasha Henderson said today, Oct. 7, that she believes the position of state officials has been shifting on continued use of the Flint River, a change that was made while Flint was being run by a state-appointed emergency manager.

"We're to the point that the state believes this is a public health emergency," Henderson told the City Council. "From what I see, the state is working very well with us."

The city administrator is among officials who have advocated for a return to buying water from the DWSD since a study was released last month by Hurley Medical Center's director of pediatric residency program.

The study showed the percentage of Flint infants and children with above average lead levels has nearly doubled citywide since the switch to river water, and has nearly tripled among children in "high risk" areas of lead exposure.

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http://www.macombdaily.com/general-news/20151008/governor-plans-10-am-announcement-on-troubled-flint-water-system

Governor plans 10 a.m. announcement on troubled Flint water system

FLINT (AP) — Gov. Rick Snyder plans an announcement about the water system in Flint, which is facing a public health emergency over lead in its water.

A posting on the state's website says Snyder on Thursday morning will be joined for the announcement by officials including Flint Mayor Dayne Walling, state Department of Environmental Quality Director Dan Wyant and state Department of Health and Human Services Director Nick Lyon.

The announcement comes a day after a committee of local experts in health, water and science recommended Flint reconnect to Detroit's water system while it awaits a new pipeline to Lake Huron.

Flint has a public health emergency due to corrosive water leaching lead from old pipes. State government and nonprofit groups are distributing filters and bottled water to Flint homes and schools.

Snyder's announcement can be viewed live at 10 a.m. Thursday, Oct. 8 by visiting http://1.usa.gov/1QapVxk

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http://www.nytimes.com/2015/10/08/us/reassurances-end-in-flint-after-months-of-concern.html

Flint Officials Are No Longer Saying the Water Is Fine

By MONICA DAVEY, New York Times, OCT. 7, 2015

FLINT, Mich. — All along, through months of complaints from residents of this city about the peculiar colors and odors they said were coming from their faucets, the overriding message from the authorities here was that the water would be just fine.

Yes, there had been a boil order when fecal coliform bacteria turned up in some neighborhoods last year. And yes, the extra chlorine that was pumped in to solve that problem seemed to create another one — increased levels of a different contaminant.

Still, the guidance from Flint officials about the temporary water supply they switched to in 2014 — partly to save money — sounded assuring. In a notice sent to residents in July, city officials declared: “This is not an emergency. If a situation arises where the water is no longer safe to drink, you will be notified within 24 hours.”

The soothing talk has vanished. In recent weeks, testing has shown increased levels of lead in the blood of some Flint children — and health officials pointed to the water as a possible source.

First, the city advised residents to run their water for five minutes before using it, to use only cold water for drinking and cooking, and to install lead-removing water filters. Then county officials issued an emergency advisory recommending that people not drink Flint’s water unless it is tested for lead or filtered.

And last Friday, after corroborating that lead levels had risen in some children, state officials called for the water to be tested at all Flint public schools and for stepped-up efforts to replace lead service lines; they also promised $1 million to provide filters.

Officials met here on Wednesday afternoon, and talks were underway, officials said, for additional solutions that could come as early as Thursday. Gov. Rick Snyder said on Twitter late Wednesday that he planned to make an announcement about the situation on Thursday morning.

Private groups have raced to donate bottled water to schools, where the water fountains are now shut off, as well as filters to families who cannot afford them. Saying “we’re just in a heck of a bind,” Robert J. Pickell, the Genesee County sheriff, began serving bottled water and food that need not be cooked in water to hundreds of inmates in the county jail. Some residents have begun washing their children and pets with bottled water.

And Flint’s mayor, Dayne Walling, who had attended a 2014 event to celebrate the switch to the new water supply, called for returning to the city’s old water supply and urged state officials to provide millions of dollars to help pay for it.

The contaminated water was just the latest blow to Flint, an economically battered city that has struggled for years with factory closings, job losses and population decline.

Along Saginaw Street downtown, where at least one business had an “un-leaded” sign posted by a jug of water, residents had lingering questions: Would filters really do enough to make the water safe? What about unfiltered showers? Could they rely on the water at work and at restaurants? And why had it taken so long for leaders to figure out that there was a problem?

“I don’t think people know what’s going on at all,” said Chris Thornton, 49, who described the first blast of water from his faucets some days as looking like urine, smelling like bleach and tasting of metal. After his wife, Ronda, 50, felt sick to her stomach for months, the Thorntons began buying jugs of bottled water, though the price — on top of an already steep water bill — has been overwhelming.

“As far as my family,” Ronda Thornton said, “we’ve just given up on the city’s water.”

Flint’s water problems are tied inextricably to its fiscal woes. In 1960, nearly 200,000 people lived here. But auto plants closed, and the population has dropped by half. By 2011, Flint’s shrunken tax base and seemingly intractable budget problems prompted Mr. Snyder to appoint an emergency manager for the city. Over the next four years, the city had four managers overseeing operations. Along the way, the city switched its water supply.

For decades, the city bought water from Detroit, which treated water from Lake Huron, then piped it here, 70 miles to the northwest. But with the costs mounting, Flint’s leaders decided they could save millions by joining a new regional authority that would draw and treat its own water from Lake Huron.

There was one complication: Flint needed an alternative water supply from April 2014 until the new regional system is ready, probably next year. In the interim, Flint switched to using water from the Flint River, which state officials say had been a backup source in the past.

Ask residents about the Flint River, and many of them roll their eyes. They say it was once as a dumping ground for car parts, grocery carts and refrigerators. There have been significant improvements and intensive restoration campaigns in recent years, though a Flint River Fest set for Friday has been postponed, organizers said, given the “current drinking water crisis.”

Even now, state officials say that treated Flint River water is safe and capable of meeting state and federal standards. Officials say the problem may be that some of the aging pipes and service lines that carry water into Flint's homes and businesses contain lead and are being corroded by water. The water Flint used to receive from Detroit was treated with chemicals intended to prevent such corrosion.

For months, questions about lead and other risks multiplied. "Everyone kept saying: 'It's safe! It's safe! It's safe!' " recalled Melissa Mays, a Flint resident who says she was sickened by the water and has helped organize residents over the issue.

Then in September, a researcher from Virginia Tech released findings from the water in hundreds of Flint homes showing elevated lead levels. Blood tests released by a local pediatrician — and corroborated last week by state officials analyzing their own testing — showed an increase in lead levels in children in some neighborhoods since 2014, when the city began drawing water from the river.

"We all have a concern about Flint's drinking water in terms of what we're seeing in terms of lead," Mr. Snyder said last week.

Mr. Walling said that the move to river water occurred when an emergency manager controlled the city, though the City Council did vote for the city's plans for a new, regional water system. He acknowledged supporting the move in a state of the city address, but said that he had not been given sufficient information about the safety risks.

"I had to work with what I knew at the time," Mr. Walling, who is up for election next month, said in an interview.

But for many residents, the authorities failed the city by taking so long to react. "Anytime you have to weigh money against the health and welfare of people, it always has to be the health and welfare you go with," said the Rev. Alfred Harris, a local pastor who has stopped conducting baptisms at his church because of concerns about the water. "We've been talking about this for the last 14 months, and they did not give a sincere ear to any of us. Shame on you!"

LeeAnne Walters said her son, Gavin, 4, who has immune system issues, had suffered direct consequences. After the switch to river water, which sometimes looked brown in their house, Gavin dropped to 27 pounds, far below the weight of his twin brother, she said. He sometimes seemed unable to pronounce words he knew, she said, and then test results showed an elevated lead level in his blood.

“He is going to deal with the side effects of this for the rest of his life,” Ms. Walters said. “I don’t think there’s a word angry enough to describe my anger. I trusted the city, and I helped the city poison my kid. Who thought this could happen in the United States?”

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http://www.freep.com/story/opinion/columnists/nancy-kaffer/2015/10/07/flint-water-crisis/73534078/

Waiting for answers, action in Flint water crisis

By Nancy Kaffer, Detroit Free Press Columnist 10:27 p.m. EDT October 7, 2015

They are still waiting for answers about the water in Flint.

And it's hard to say when, or if, those answers are coming.

It has been two weeks since a hospital researcher found that more Flint kids had been lead poisoned since the city switched its municipal water supply. And it has been nearly a week since the State of Michigan abruptly changed its posture, acknowledging, after months of denial and empty assurances, that Flint's water supply was compromised.

Since then, a lot of folks have worked diligently to sort out how things went so badly wrong in this small, impoverished city, and what the State of Michigan is doing to fix it.

But solutions remain elusive.

The state announced Friday that it has devoted $1 million to provide water filters for Flint residents, is expanding water testing and expediting improved water treatment. But two weeks on, Flint hasn't started adding chemicals to its water that would allow it to pass safely through the city's lead service pipes. That plan can likely be ready within a week, and can be enacted as soon as it's approved by the Michigan Department of Environmental Quality. Scientists say it would take roughly a month before those chemicals would begin to effect Flint's drinking water.

That would be the right play, unless the city opts to rejoin the Detroit Water and Sewerage Department -- as water experts have recommended -- a decision that would likely require financial assistance from the State of Michigan but could result in potable water flowing from Flint taps within two weeks. Is it likely to happen? Your guess is as good as mine.

And state officials continue to insist that the rules designed to monitor water systems, to ensure safe drinking water, worked as they're supposed to.

Kids in danger

The effects of lead on children are irreversible. Lead-poisoned kids can experience a host of behavioral and developmental problems, and in two Flint ZIP codes, the percentage of children affected by lead has doubled, reversing a long trend of improving rates.

That's because in 2014, Flint decided to pump untreated water from the Flint River, ending a decades-long relationship with the Detroit Water and Sewerage Department, while a new regional water authority it's joining is under construction. Since then, Flint's been treating its water locally, prompting a rash of problems related to coliform bacteria, a disinfectant and its byproduct, and now, elevated lead.

Both of these decisions were made while Flint was under state oversight, during the appointments of a series of emergency managers appointed by and answerable to Gov. Rick Snyder. The Michigan Department of Environmental Quality, whose director is appointed by the governor, must ensure that water systems are producing safe drinking water. Because Flint's water decisions were made under Snyder's emergency managers, the governor's decision-making authority is one step closer to Flint's water crisis.

The water Flint bought from Detroit was "finished," in other words, safe for humans to drink, but also treated to create a film inside those pipes that kept the lead out. That's called "corrosion control," and Detroit achieved this goal by adding phosphates to the water it pumps from Lake Huron.

Flint doesn't.

It took an unreasonably long time to get a solid answer to this question.

Corrosion control

Since April 2014, treatment at Flint's plant has included adding lime to the water it distributed to customers, largely to make the water less acidic, Liane Shekter Smith, chief of the MDEQ's office of drinking water and municipal assistance, said Tuesday.

"There was no corrosion control plan put forward at the time of the switch," Shekter Smith said. "There was a belief that (acidity) adjustment would provide adequate corrosion control, and that rounds of testing would confirm or refute that."

Any new water supply must be tested at six-month intervals to determine whether it meets the guidelines of the federal lead and copper rule, a standard established by the U.S. Environmental Protection Agency.

Tests of Flint's drinking water showed roughly 6 parts per billion (how the presence of lead in water is reckoned) in water sampled between June and December of 2014, said MDEQ spokesman Brad Wurfel. The U.S. Centers for Disease Control and Prevention said there is no acceptable level of lead exposure, but 6 ppb would, in some cases, fall below the EPA's actionable level of 15 ppb.

But because the community Flint serves is so large, it must meet a different threshold, 5 ppb. If a second round of testing showed that lead levels continued to exceed it, Flint would be required to improve its method of corrosion control.

Water sampled between January and June of 2015 showed an alarming increase: lead levels had risen to 11 ppb.

That kind of testing, Shekter Smith said, is the most reliable way to determine whether corrosion control is working.

"Having it in place is best way to know what is happening out in the system," she said.

Given the elevated blood-lead levels in Flint kids, the damage lead can cause, and the permanence of that damage, is that enough?

"I think that we are following the protocol," she said, "and the protocol got us to the right place, and we're making the right decisions."

“It did?" said Erik Olson, a senior strategy director for the Washington, D.C.-based Natural Resources Defense Council. "It didn’t sound like it."

Because the composition of water varies so greatly, there's no one right way to do corrosion control, Olson said. But Flint's plan to use lime only should have prompted questions before switching to Flint River water.

"They definitely should have said, 'OK, what’s the basis of that decision? What’s your engineering study that shows that that’s optimizing your corrosion control?' " Olson said.

That Flint's river water would pass through pipes with lead components shouldn't have been surprising, Olson said -- the presence of lead in the water and sewage infrastructure is well-documented, and well-known.

So why didn't Flint's engineers account for that, when developing a treatment plan? That's just one of the questions I still can't answer.

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http://www.detroitnews.com/story/news/local/michigan/2015/10/08/flint-health-experts-support-detroit-water-reconnection/73568654/

Flint health experts support Detroit water reconnection

Detroit News Staff and wire reports 7:58 a.m. EDT October 8, 2015

Flint — A committee of local experts in health, water and science has recommended that Flint reconnect to Detroit’s water system.

Flint administrator Natasha Henderson urged the committee to not think about cost and decide “what’s in the best interest” for Flint, which has a water crisis due to elevated levels of lead in children.

The Technical Advisory Committee met Wednesday. It rarely meets, but state officials say it will have a role in Flint’s water quality. The committee has no formal role in deciding whether Flint stops using the Flint River for water.

Flint has a public health emergency due to corrosive water leaching lead from old pipes. A Virginia Tech researcher says there would be dramatic reductions in about a month if the Detroit water system is used.

Gov. Rick Snyder’s administration last week said it was considering temporarily reconnecting Flint to Detroit’s water system temporarily in a bid to tackle the ongoing water quality and lead issues. The state also planned to expedite construction of a new water line to Lake Huron so a planned water authority that would service Flint could operate as soon as possible. An announcement on the Flint water plan was expected Thursday.

Sara Wurfel, a spokeswoman for Snyder, said the recommendation Wednesday “is an option we’re helping thoroughly review and consider with the city, and the technical advisory committee’s work is much appreciated in this matter. We’re also focused on working hard in collaboration with all and implementing the key action steps outlined on Oct. 2 to help protect public health and ensure safe, accessible drinking water for Flint residents.”

Since 2014, the Genesee County city has drawn its drinking water from the Flint River, which has led to major problems for residents.

Last month, the city issued an advisory about its drinking water after concerns surfaced about lead contamination.

On Tuesday, Snyder’s administration made free water filters available for residents.

Meanwhile, Uber drivers began collecting donations of bottled water for Flint schools. And Mayor Dayne Walling this week said he gave to Flint Community Schools some 19 palettes Kroger grocers donated.

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http://www.mlive.com/news/flint/index.ssf/2015/10/donors_show_support_by_giving.html

Uber, others join in efforts to pour clean water into Flint

By Jiquanda Johnson | jjohns16@mlive.com The Flint Journal Follow on Twitter on October 08, 2015 at 5:00 AM, updated October 08, 2015 at 5:06 AM

FLINT, MI -- Businesses, charities and individuals have donated thousands of bottles of water to city of Flint residents and students since last year after controversy erupted over the quality of the city's water. Here is a list of some of the donors.

- The United Way of Genesee County has actively participated in looking at ways to ease water woes in the city of Flint.
- ZeroWater partnered with United Way and Flint Community Schools early October to bring water filters to the school district as a solution instead of having students drink bottled water.
- Uber announced on Oct. 6 that drivers in Detroit will pick up donated bottles of water to bring to Flint throughout the week. People in Detroit just have to use their Uber link to notify drivers that water needs to be picked up. The initiative runs from 2 to 7 p.m. from Oct. 6 - 8.

- □□□□□□□□ There was another donation of more than 4,000 gallons of bottled water through the Flint Diaper Bank and United Way of Genesee County on Oct. 7.

- □□□□□□□□ Donations came in from Flint-area Home Depots and Sam's Club after Hurley Medical Center doctors revealed that lead levels in children in Flint had elevated after the city switched from Detroit's water source to the Flint River.

- □□□□□□□□ Mott Community College issued an Oct. 7 media release saying they are donating bottled water to Pierce Elementary School on the city's north side on Oct. 8.

- □□□□□□□□ Swan Valley High School in Saginaw is collecting bottled water to send to Flint Public Schools. The bottled water drive ends Oct. 9 and school officials are hoping to drop donations off to Flint Community Schools on Oct. 9.

- □□□□□□□□ Bendle High School sophomore Chase Harrison raised money to purchase bottled water for Flint Community Schools.

- □□□□□□□□ Lavish Living, a Flint-based organization, has donated at least 200 cases of water to Flint Community Schools. As of Oct. 6 the organization was still working to collect more water for students.

- □□□□□□□□ The Flint Northwestern football team delivered an estimated 40 cases of water on Oct. 5 to Flint area residents between Dupont, Clio, Carpenter and Pierson roads.

- □□□□□□□□ General Motors Foundation

- □□□□□□□□ In January, Sargent Title Co. collected about 600 cases of water to donated to Flint residents.

- □□□□□□□□ Absopure Water Corp. donated a semi-truck worth of bottled water to Flint residents in January.

- □□□□□□□□ 1st Congregational United Church of Christ in Kalamazoo donated 4,000 bottles of water in September.

- □□□□□□□□ Al Serra Auto Plaza announced Oct. 7 that they will serve as drop off location for bottled water donations. If donors give 12 or more bottles of water, the dealership is offering free tire rotation.

- □□□□□□□□ In March, members of the Michigan National Action Network provided an estimated 10,000 bottles of water to Flint residents.

•□□□□□□□□ District leaders also expect at least 1,000 cases of bottled water to arrive at the Food Bank on Wednesday, Oct. 7, from the Saginaw Chippewa Indian Tribe and Soaring Eagle Waterpark and Hotel and Soaring Eagle Casino and Resort.

The Flint Journal will do updates as more donor names are provided. If anyone has donor information make a note of it in the comments section of this post, or email The Flint Journal at flnews@mlive.com.

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http://michronicleonline.com/2015/10/07/flint-water-crisis-a-bitter-indictment-of-dysfunctional-emergency-manager/

Flint water crisis a bitter indictment of dysfunctional emergency manager

By Curt Guyette, Special to The Michigan Chronicle

Stark evidence of how terribly bad things can go when democracy is dismantled can be found in the elevated levels of lead in the children of Flint.

Because of decisions made by an appointed emergency manager, the tragically high costs of trying to balance a budget by switching to an unsafe water source will be borne by kids now forced to struggle with lower IQs, behavioral problems, learning disabilities, and a host of other ill effects.

This is what can happen when people are denied full access to representative government; they get poisoned by appointees with no connection to the community. Under Michigan's emergency manager law – PA 436 — gubernatorial appointees can leave town claiming to have successfully solved a fiscal crisis when in fact what they leave in their wake is a catastrophe of monumental proportions.

In recent days, as the lead problems in Flint have made international news, former Flint emergency manager Darnell Earley – the man in charge when the switch to the Flint River was made, and who is now overseeing the education of the children in Detroit Public Schools – has tried to deny any responsibility for the catastrophe.

According to the Detroit Free Press, Earley claimed in an e-mailed statement “that he was not involved in the decision to use river water.”

The governor’s office and Earley can rightfully claim that the Flint mayor and City Council initially gave their blessing to the switch made 18 months ago. But that fig leaf provides little real cover for the state officials now trying to run away from their disastrous decision.

For starters, it doesn’t matter what the mayor and City Council had to say when the decision was made. The emergency manager, under the sweeping powers granted under Public Act 436, had complete authority to make the switch regardless of what Flint’s elected officials wanted.

Moreover, those officials were in essence working for the emergency manager, not the people who elected them. The EM decided how much pay the mayor and council members drew, and how much power they could wield.

How do things go when appointed officials try to buck the control of an EM? As we’ve seen in Benton Harbor and Detroit Public Schools, the answer is that they get denuded of all power and are completely marginalized.

The message to elected officials under state control has been made perfectly clear: play ball with the EM, or else.

But there is another problem with the EM law as well, one made painfully obvious in

Flint. In a normally-functioning democracy, when it came time for a city of Flint to conduct tests to show it is in compliance with federal drinking water regulations, the city would be an independent actor with the Michigan Department of Environmental Quality (MDEQ) serving as a separate check on the system, another independent actor providing oversight to make sure the job is done correctly.

Instead, with Governor Rick Snyder's man being the one in charge when the decision was made to start using river water – a decision that was almost instantly revealed to be fraught with problems – the MDEQ, instead of being a watchdog protecting the citizens of Flint, served as a collaborator, working with the city to do everything in their power to skew results so that their tests would make it appear that the water was safe when it wasn't.

How do we know it wasn't safe? Because grassroots citizen groups worked with researchers at Virginia Tech and the ACLU of Michigan to conduct an independent test of nearly 300 city homes and found that the problem was far worse than the city and state claimed.

When those results were released in mid-September, the response by the state was to try and discredit them. The same was true a week later, when a Hurley Children's Hospital study found the number of children with elevated lead levels doubled after the switch to the Flint River was made.

Those two studies, and the host of problems with the state and city's water testing, last week prompted the ACLU of Michigan, the Natural Resources Defense Council, and an array of civic groups to file a petition with the U.S. EPA, calling upon the federal government to come in and provide the oversight necessary to ensure Flint's water is clean and safe.

Finally, after the state's own data confirmed those findings, and Genesee County officials took the drastic step of declaring a public health emergency, the governor and MDEQ were forced to finally admit the truth and started taking some action.

But even if those measures are enough – and they may well not be, failing as they do to require a switch back to the much cleaner and far less corrosive Detroit system – the damage already caused by this governor and his emergency managers is irreversible for the children who will struggle for the rest of their lives because of the decisions made while Flint was under state control and democracy was suspended.

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U.S. EPA Region 5
ph: 312-353-1159

To: Hedman, Susan[hedman.susan@epa.gov]
Cc: Hyde, Tinka[hyde.tinka@epa.gov]; Rowan, Anne[rowan.anne@epa.gov]
From: Kelley, Jeff
Sent: Thur 10/8/2015 3:19:01 PM
Subject: RE: Notes from Governor's Flint announcement

FYI, it looks like the video will remain online at http://livestream.com/SnyderLive/events/4407113/videos/101416038

Jeff Kelley
Director, Office of External Communications
U.S. EPA Region 5
ph: 312-353-1159

From: Hedman, Susan
Sent: Thursday, October 08, 2015 9:54 AM
To: Kelley, Jeff
Cc: Hyde, Tinka; Rowan, Anne
Subject: Re: Notes from Governor's Flint announcement

Thanks for the excellent summaries!

Sent from my iPhone

On Oct 8, 2015, at 10:43 AM, Kelley, Jeff <kelley.jeff@epa.gov> wrote:

> Last batch, from the Q&A … these are very rough. Let me know if you'd like me to clarify anything.
>
> Was it a mistake to ever switch from Detroit water?
>
> Gov.: We will create an "after action report"
>
> How much was decision rooted in technical decisions vs. public loss of confidence?
>
> Gov.: Both … not one or the other, but are true.

What's the timeline … when can we reconnect? And why weren't schools tested earlier?

Gov.: This is the city of Flint making the decision to reconnect. With respect to school testing, we followed the federal requirements … in after action will likely recommend more testing required for schools.

Mayor: Will provide timeline update on Monday

Is there a need to buy pipes back? What infrastructure is needed to reconnect?

Mayor: Will use transmission line now owned by the county

When did state first find out there was a problem? How did you find out?

Dan Wyant: Tested the plant seven times quarterly when the switch occurred. Ran the lead copper protocol that we run in other communities. First 6 month period showed 6 ppb. Second period was 11 ppb. Consulted with EPA in July 2015. LCR says after two consecutive tests above 5 ppb, need to inform community and take more steps. Letter went out in August 2015. Big issue is lead service lines

What finally pushed recommendation to switch to Detroit water?

Gov.: Wanted to collect facts … scientists/researchers on technical advisory committee met. Also, figuring out the logistics of how to do this.

Last week, you said there were probably things not fully understood at the time of the switch?

Gov.: Protocols were being followed as established by the EPA … what apparently is true, is there needed to be more work. No set protocol from EPA for looking at schools. Will continue analysis … are there recommendations we can make to our federal partners.

You guys have admitted there are some gaps in the testing protocols. What's to say we won't find these same problems in other cities?

Wyant: 800 schools are non-community sources and they are required to test. With respect to surface water, we do test at the plant. Historically there has been EPA guidance for testing at schools. Committed to educating and providing technical assistance. Need to go back and look at all schools.

Broad perception in the public that Flint's financial situation lead to this problem … in hindsight, should the money have been made available from the start?

Gov.: Not necessarily … we don't know what would have happened even with the prior water because there wasn't testing.

Schoolkids who've been drinking 6-7 times the action level for a year … what'll be done for them?

MDHHS: Proposing to send experts in to identify and track kids with elevated blood levels and then take steps to address. There is an existing lead testing program in the state, etc.

Will switch to Detroit fix the problem or will there be long term problems?

Gov.: Yes, will fix problem, but we'll continue the steps announced last week. Longer term, problem is lead service lines … what options are there in partnership with federal partners. Need more investment in water and sewer infrastructure … this needs to be a national effort.

Jeff Kelley
Director, Office of External Communications
U.S. EPA Region 5
ph: 312-353-1159

From: Kelley, Jeff
Sent: Thursday, October 08, 2015 9:26 AM
To: Susan Hedman

Cc: Hyde, Tinka; Rowan, Anne (rowan.anne@epa.gov)
Subject: RE: Notes from Governor's Flint announcement

Second batch …

Dan Wyant:

•□□□□□□□□ Reporting on some of the test results we received from schools … results from initial screening are consistent with last round of tests … 4 of 37 samples exceeding 15 ppb action level (3 schools). One test was 101 ppb. More sampling needs to occur.

•□□□□□□□□ Data underscores the need for a complete and thorough plumbing evalustion of all Flint schools. We have a protocol (developed with EPA's Susan Hedman and Tom Burt).

•□□□□□□□□ Will work with county health department to conduct this testing. Protocol based on similar work conducted in Michigan and elsewhere.

•□□□□□□□□ After evaluation, will assist each school to develop a plan to address issues. Schools should continue to use bottled water until after evaluation assessments are complete.

Nick Lyons, MDHHS:

•□□□□□□□□ Providing 8 staff – potentially including toxicologist – to assist.

•□□□□□□□□ Schools should continue to use bottled/filtered water.

•□□□□□□□□ Residents should use filtered water. Have distributed more than 6,000 NSF certified filtered. [Lots of detail about where, when residents should go to get filters]

•□□□□□□□□ Residents should flush pipes, only use cold water for consumption, cooking, etc.

Dr. Eden Wells:

•□□□□□□□□ Rest assured that the filters are NSF certified for lead reduction.

•□□□□□□□□ Ordering replacements for residents … more details to come.

•□□□□□□□□ Lead exposure comes from a number of environmental sources … lead based paint is the predominant source.

•□□□□□□□□ Encourage parents with concerns to seek testing for their children. There are a number of steps parents can take to reduce lead exposure for their children…

State Sen. Ananich:

•□□□□□□□□ Thanks to Marc Edwards, Dr. Mona?, United Way

•□□□□□□□□ “No one has been a louder and more persistent voice than I have been”

[Emcee Harvey? pushes back on State Sen. … we’re all very concerned, many organizations involved]

Mott Foundation:

•□□□□□□□□ We hope the return to Detroit and eventual new pipeline will restore confidence and protect children … that’s why contributing $4 million.

•□□□□□□□□ Cities across the country struggle with aging infrastructure … hope this will spark federal effort

---
Jeff Kelley
Director, Office of External Communications
U.S. EPA Region 5
ph: 312-353-1159

From: Kelley, Jeff
Sent: Thursday, October 08, 2015 9:11 AM

To: Susan Hedman
Cc: Hyde, Tinka; Rowan, Anne (rowan.anne@epa.gov)
Subject: Notes from Governor's Flint announcement

Rough notes from the first two speakers … more to come. DEQ up next.

Gov. Snyder:

•□□□□□□□□ Thanking the Mott Foundation … follow up on what we did last week. Continuing to do last week's actions, but some additional action steps we're looking to tangibly take

•□□□□□□□□ Tech advisory committee made a recommendation about switching to Great Lakes Water Authority / Detroit … "I'm in full support of a return to the GLWA" … I support the mayor in his desire to move in that direction

•□□□□□□□□ We believe it will be better for public safety … some financial issues … about a $12 million incremental cost. Will recommend to legislature to provide $6 million toward that cost. Mott Foundation will kick in $4 million. Flint will find $2 million.

•□□□□□□□□ <video froze>

•□□□□□□□□ Asking for $4 million to continue with what was discussed last week … testing, water filters, people for analysis and work, including lead education

•□□□□□□□□ U.S. EPA has been excellent to work with

Dayne Walling:

•□□□□□□□□ City has decided to switch back to Detroit water … fastest way to protect public health and stabilize Flint's water system.

•□□□□□□□□ City is already working diligently to make the reconnection … discussion around optimal corrosion control has already started

•□□□□□□□□ Monday 2 p.m. press briefing

•□□□□□□□□ EPA technical assistance will be involved from the beginning so best practices will be in place

•□□□□□□□□ Reconnecting to Detroit is a major step toward safe water, but rehab project will take more time and money. State and EPA working with city on immediate and long term steps.

•□□□□□□□□ Lead service lines need to be replaced

•□□□□□□□□ Important lessons from Flint's experience … need to look at state and federal water rules, etc.

Jeff Kelley
Director, Office of External Communications
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To: Harrison, Melissa[Harrison.Melissa@epa.gov]
Cc: Kelley, Jeff[kelley.jeff@epa.gov]; Hyde, Tinka[hyde.tinka@epa.gov]; Rowan, Anne[rowan.anne@epa.gov]; Burke, Thomas[Burke.Thomas@epa.gov]; Meiburg, Stan[Meiburg.Stan@epa.gov]; Vaught, Laura[Vaught.Laura@epa.gov]
From: Hedman, Susan
Sent: Thur 10/8/2015 3:36:56 PM
Subject: Re: Flint clips for morning of Oct. 8

Here's a different version to consider:

> U.S. EPA will continue to provide technical assistance to the State of Michigan and the City of Flint to support their joint effort to supply drinking water from the Great Lakes Water Authority to Flint residents. US EPA will also provide technical assistance during the transition to the new Karagondi Water Authority next year.

If we use this option -- please check spelling of Karagondi!

Sent from my iPhone

On Oct 8, 2015, at 11:20 AM, Harrison, Melissa <Harrison.Melissa@epa.gov> wrote:

> Adding a few people for additional thoughts. Thanks! Melissa
>
> Melissa Harrison
> Press Secretary
> EPA
> Office: (202) 564-8421
> Mobile: (202) 697-0208
> Harrison.Melissa@epa.gov
>
> On Oct 8, 2015, at 10:15 AM, Kelley, Jeff <kelley.jeff@epa.gov> wrote:
>
>> Here's a draft revised statement:
>>
>> U.S. EPA supports the city of Flint's decision to return to using Detroit water. This, and the other actions announced last week, are important steps to protect public health. Over time, Flint will benefit from the corrosion control treatment already implemented by Detroit, as required by the Safe Drinking Water Act.

U.S. EPA will continue to provide technical assistance to the State of Michigan and the City of Flint to support their joint effort.

Jeff Kelley
Director, Office of External Communications
U.S. EPA Region 5
ph: 312-353-1159

From: Hedman, Susan
Sent: Thursday, October 08, 2015 8:27 AM
To: Kelley, Jeff; Rowan, Anne
Cc: Harrison, Melissa
Subject: Re: Flint clips for morning of Oct. 8

Please rework the statement in anticipation of an announcement that the state will provide funding for a return to Detroit water.

Sent from my iPhone

On Oct 8, 2015, at 9:11 AM, Kelley, Jeff <kelley.jeff@epa.gov> wrote:

> Note that Gov. Snyder is expected to make an announcement at 10 a.m. Eastern. The state will be livestreaming the announcement at http://1.usa.gov/1QapVxk
>
> •□□□□□□□□ Gov. Snyder says he'll make announcement on Flint water Thursday (Flint Journal)
>
> •□□□□□□□□ Governor plans 10 a.m. announcement on troubled Flint water system (Associated Press)
>
> •□□□□□□□□ Flint Officials Are No Longer Saying the Water Is Fine (New York Times)
>
> •□□□□□□□□ Waiting for answers, action in Flint water crisis (Detroit Free Press)
>
> •□□□□□□□□ Flint health experts support Detroit water reconnection

(Detroit News)

•□□□□□□□□ Uber, others join in efforts to pour clean water into Flint (Flint Journal)

•□□□□□□□□ Flint water crisis a bitter indictment of dysfunctional emergency manager (Michigan Chronicle)

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http://www.mlive.com/news/flint/index.ssf/2015/10/gov_snyder_says_hell_make_anno.html

Gov. Snyder says he'll make announcement on Flint water Thursday

By Ron Fonger | rfonger1@mlive.com The Flint Journal on October 07, 2015 at 9:45 PM, updated October 08, 2015 at 8:08 AM

FLINT, MI -- Gov. Rick Snyder says on Twitter that he will make an announcement about Flint water at 10 a.m. Thursday.

The planned announcement comes less than 24 hours after Flint's Technical Advisory Committee recommended the city end its use of the Flint River as its water source.

Since making the switch from using pre-treated Lake Huron water from the city of Detroit to treating river water at its own plant in April 2014, Flint officials have struggled to maintain the quality and safety of water delivered to city residents.

Snyder's Twitter message says, "Watch live tomorrow at 10 a.m. as I make an announcement regarding Flint water" at mi.gov/SnyderLive.

The state's Web site says the governor will be joined by Flint Mayor Dayne Walling, other state officials, and Ridgway White of the Charles Stewart Mott Foundation.

High levels of lead in city water and in the blood of children and infants since the city changed its water source have triggered a public health emergency here, including the mass distribution of lead-clearing faucet filters and bottled water.

Researchers from Virginia Tech university say river water has proven to be far more corrosive than water from the Detroit Water and Sewerage Department, causing lead to leach into homes that have lead service lines.

Flint City Administrator Natasha Henderson said today, Oct. 7, that she believes the position of state officials has been shifting on continued use of the Flint River, a change that was made while Flint was being run by a state-appointed emergency manager.

"We're to the point that the state believes this is a public health emergency," Henderson told the City Council. "From what I see, the state is working very well with us."

The city administrator is among officials who have advocated for a return to buying water from the DWSD since a study was released last month by Hurley Medical Center's director of pediatric residency program.

The study showed the percentage of Flint infants and children with above average lead levels has nearly doubled citywide since the switch to river water, and has nearly tripled among children in "high risk" areas of lead exposure.

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http://www.macombdaily.com/general-news/20151008/governor-plans-10-am-announcement-on-troubled-flint-water-system

Governor plans 10 a.m. announcement on troubled Flint water system

FLINT (AP) — Gov. Rick Snyder plans an announcement about the water system in Flint, which is facing a public health emergency over lead in its water.

A posting on the state's website says Snyder on Thursday morning will be joined for the announcement by officials including Flint Mayor Dayne Walling, state Department of Environmental Quality Director Dan Wyant and state Department of Health and Human Services Director Nick Lyon.

The announcement comes a day after a committee of local experts in health, water and science recommended Flint reconnect to Detroit's water system while it awaits a new pipeline to Lake Huron.

Flint has a public health emergency due to corrosive water leaching lead from old pipes. State government and nonprofit groups are distributing filters and bottled water to Flint homes and schools.

Snyder's announcement can be viewed live at 10 a.m. Thursday, Oct. 8 by visiting http://1.usa.gov/1QapVxk

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http://www.nytimes.com/2015/10/08/us/reassurances-end-in-flint-after-months-of-concern.html

Flint Officials Are No Longer Saying the Water Is Fine

By MONICA DAVEY, New York Times, OCT. 7, 2015

FLINT, Mich. — All along, through months of complaints from residents of this city about the peculiar colors and odors they said were coming from their faucets, the overriding message from the authorities here was that the water would be just fine.

Yes, there had been a boil order when fecal coliform bacteria turned up in some neighborhoods last year. And yes, the extra chlorine that was pumped in to solve that problem seemed to create another one — increased levels of a different contaminant.

Still, the guidance from Flint officials about the temporary water supply they switched to in 2014 — partly to save money — sounded assuring. In a notice sent to residents in July, city officials declared: “This is not an emergency. If a situation arises where the water is no longer safe to drink, you will be notified within 24 hours.”

The soothing talk has vanished. In recent weeks, testing has shown increased levels of lead in the blood of some Flint children — and health officials pointed to the water as a possible source.

First, the city advised residents to run their water for five minutes before using it, to use only cold water for drinking and cooking, and to install lead-removing water filters. Then county officials issued an emergency advisory recommending that people not drink Flint’s water unless it is tested for lead or filtered.

And last Friday, after corroborating that lead levels had risen in some children, state officials called for the water to be tested at all Flint public schools and for stepped-up efforts to replace lead service lines; they also promised $1 million to provide filters.

Officials met here on Wednesday afternoon, and talks were underway, officials said, for additional solutions that could come as early as Thursday. Gov. Rick Snyder said on Twitter late Wednesday that he planned to make an announcement about the situation on Thursday morning.

Private groups have raced to donate bottled water to schools, where the water fountains are now shut off, as well as filters to families who cannot afford them. Saying “we’re just in a heck of a bind,” Robert J. Pickell, the Genesee County sheriff, began serving bottled water and food that need not be cooked in water to hundreds of inmates in the county jail. Some residents have begun washing their children and pets with bottled water.

And Flint’s mayor, Dayne Walling, who had attended a 2014 event to celebrate the switch to the new water supply, called for returning to the city’s old water supply and urged state officials to provide millions of dollars to help pay for it.

The contaminated water was just the latest blow to Flint, an economically battered city that has struggled for years with factory closings, job losses and population decline.

Along Saginaw Street downtown, where at least one business had an “un-leaded” sign posted by a jug of water, residents had lingering questions: Would filters really do enough to make the water safe? What about unfiltered showers? Could they rely on the water at work and at restaurants? And why had it taken so long for leaders to figure out that there was a problem?

“I don’t think people know what’s going on at all,” said Chris Thornton, 49, who described the first blast of water from his faucets some days as looking like urine, smelling like bleach and tasting of metal. After his wife, Ronda, 50, felt sick to her stomach for months, the Thorntons began buying jugs of bottled water, though the price — on top of an already steep water bill — has been overwhelming.

“As far as my family,” Ronda Thornton said, “we’ve just given up on the city’s water.”

Flint’s water problems are tied inextricably to its fiscal woes. In 1960, nearly 200,000 people lived here. But auto plants closed, and the population has dropped by half. By 2011, Flint’s shrunken tax base and seemingly intractable budget problems prompted Mr. Snyder to appoint an emergency manager for the city. Over the next four years, the city had four managers overseeing operations. Along the way, the city switched its water supply.

For decades, the city bought water from Detroit, which treated water from Lake Huron, then piped it here, 70 miles to the northwest. But with the costs mounting, Flint’s leaders decided they could save millions by joining a new regional authority that would draw and treat its own water from Lake Huron.

There was one complication: Flint needed an alternative water supply from April 2014 until the new regional system is ready, probably next year. In the interim, Flint switched to using water from the Flint River, which state officials say had been a backup source in the past.

Ask residents about the Flint River, and many of them roll their eyes. They say it was once as a dumping ground for car parts, grocery carts and refrigerators. There have been significant improvements and intensive restoration campaigns in recent years, though a Flint River Fest set for Friday has been postponed, organizers said, given the “current drinking water crisis.”

Even now, state officials say that treated Flint River water is safe and capable of meeting state and federal standards. Officials say the problem may be that some of the aging pipes and service lines that carry water into Flint's homes and businesses contain lead and are being corroded by water. The water Flint used to receive from Detroit was treated with chemicals intended to prevent such corrosion.

For months, questions about lead and other risks multiplied. "Everyone kept saying: 'It's safe! It's safe! It's safe!' " recalled Melissa Mays, a Flint resident who says she was sickened by the water and has helped organize residents over the issue.

Then in September, a researcher from Virginia Tech released findings from the water in hundreds of Flint homes showing elevated lead levels. Blood tests released by a local pediatrician — and corroborated last week by state officials analyzing their own testing — showed an increase in lead levels in children in some neighborhoods since 2014, when the city began drawing water from the river.

"We all have a concern about Flint's drinking water in terms of what we're seeing in terms of lead," Mr. Snyder said last week.

Mr. Walling said that the move to river water occurred when an emergency manager controlled the city, though the City Council did vote for the city's plans for a new, regional water system. He acknowledged supporting the move in a state of the city address, but said that he had not been given sufficient information about the safety risks.

"I had to work with what I knew at the time," Mr. Walling, who is up for election next month, said in an interview.

But for many residents, the authorities failed the city by taking so long to react. "Anytime you have to weigh money against the health and welfare of people, it always has to be the health and welfare you go with," said the Rev. Alfred Harris, a local pastor who has stopped conducting baptisms at his church because of concerns about the water. "We've been talking about this for the last 14 months, and they did not give a sincere ear to any of us. Shame on you!"

LeeAnne Walters said her son, Gavin, 4, who has immune system issues, had suffered direct consequences. After the switch to river water, which sometimes looked brown in their house, Gavin dropped to 27 pounds, far below the weight of his twin brother, she said. He sometimes seemed unable to pronounce words he knew, she said, and then test results showed an elevated lead level in his blood.

"He is going to deal with the side effects of this for the rest of his life," Ms. Walters said. "I don't think there's a word angry enough to describe my anger. I trusted the city, and I helped the city poison my kid. Who thought this could happen in the United States?"

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http://www.freep.com/story/opinion/columnists/nancy-kaffer/2015/10/07/flint-water-crisis/73534078/

Waiting for answers, action in Flint water crisis

By Nancy Kaffer, Detroit Free Press Columnist 10:27 p.m. EDT October 7, 2015

They are still waiting for answers about the water in Flint.

And it's hard to say when, or if, those answers are coming.

It has been two weeks since a hospital researcher found that more Flint kids had been lead poisoned since the city switched its municipal water supply. And it has been nearly a week since the State of Michigan abruptly changed its posture, acknowledging, after months of denial and empty assurances, that Flint's water supply was compromised.

Since then, a lot of folks have worked diligently to sort out how things went so badly wrong in this small, impoverished city, and what the State of Michigan is doing to fix it.

But solutions remain elusive.

The state announced Friday that it has devoted $1 million to provide water filters for Flint residents, is expanding water testing and expediting improved water treatment. But two weeks on, Flint hasn't started adding chemicals to its water that would allow it to pass safely through the city's lead service pipes. That plan can likely be ready within a week, and can be enacted as soon as it's approved by the Michigan Department of Environmental Quality. Scientists say it would take roughly a month before those chemicals would begin to effect Flint's drinking water.

That would be the right play, unless the city opts to rejoin the Detroit Water and Sewerage Department -- as water experts have recommended -- a decision that would likely require financial assistance from the State of Michigan but could result in potable water flowing from Flint taps within two weeks. Is it likely to happen? Your guess is as good as mine.

And state officials continue to insist that the rules designed to monitor water systems, to ensure safe drinking water, worked as they're supposed to.

Kids in danger

The effects of lead on children are irreversible. Lead-poisoned kids can experience a host of behavioral and developmental problems, and in two Flint ZIP codes, the percentage of children affected by lead has doubled, reversing a long trend of improving rates.

That's because in 2014, Flint decided to pump untreated water from the Flint River, ending a decades-long relationship with the Detroit Water and Sewerage Department, while a new regional water authority it's joining is under construction. Since then, Flint's been treating its water locally, prompting a rash of problems related to coliform bacteria, a disinfectant and its byproduct, and now, elevated lead.

Both of these decisions were made while Flint was under state oversight, during the appointments of a series of emergency managers appointed by and answerable to Gov. Rick Snyder. The Michigan Department of Environmental Quality, whose director is appointed by the governor, must ensure that water systems are producing safe drinking water. Because Flint's water decisions were made under Snyder's emergency managers, the governor's decision-making authority is one step closer to Flint's water crisis.

The water Flint bought from Detroit was "finished," in other words, safe for humans to drink, but also treated to create a film inside those pipes that kept the lead out. That's called "corrosion control," and Detroit achieved this goal by adding phosphates to the water it pumps from Lake Huron.

Flint doesn't.

It took an unreasonably long time to get a solid answer to this question.

Corrosion control

Since April 2014, treatment at Flint's plant has included adding lime to the water it distributed to customers, largely to make the water less acidic, Liane Shekter Smith, chief of the MDEQ's office of drinking water and municipal assistance, said Tuesday.

"There was no corrosion control plan put forward at the time of the switch," Shekter Smith said. "There was a belief that (acidity) adjustment would provide adequate corrosion control, and that rounds of testing would confirm or refute that."

Any new water supply must be tested at six-month intervals to determine whether it meets the guidelines of the federal lead and copper rule, a standard established by the U.S. Environmental Protection Agency.

Tests of Flint's drinking water showed roughly 6 parts per billion (how the presence of lead in water is reckoned) in water sampled between June and December of 2014, said MDEQ spokesman Brad Wurfel. The U.S. Centers for Disease Control and Prevention said there is no acceptable level of lead exposure, but 6 ppb would, in some cases, fall below the EPA's actionable level of 15 ppb.

But because the community Flint serves is so large, it must meet a different threshold, 5 ppb. If a second round of testing showed that lead levels continued to exceed it, Flint would be required to improve its method of corrosion control.

Water sampled between January and June of 2015 showed an alarming increase: lead levels had risen to 11 ppb.

That kind of testing, Shekter Smith said, is the most reliable way to determine whether corrosion control is working.

"Having it in place is best way to know what is happening out in the system," she said.

Given the elevated blood-lead levels in Flint kids, the damage lead can cause, and the permanence of that damage, is that enough?

"I think that we are following the protocol," she said, "and the protocol got us to the right place, and we're making the right decisions."

“It did?" said Erik Olson, a senior strategy director for the Washington, D.C.-based Natural Resources Defense Council. "It didn’t sound like it."

Because the composition of water varies so greatly, there's no one right way to do corrosion control, Olson said. But Flint's plan to use lime only should have prompted questions before switching to Flint River water.

"They definitely should have said, 'OK, what’s the basis of that decision? What’s your engineering study that shows that that’s optimizing your corrosion control?' " Olson said.

That Flint's river water would pass through pipes with lead components shouldn't have been surprising, Olson said -- the presence of lead in the water and sewage infrastructure is well-documented, and well-known.

So why didn't Flint's engineers account for that, when developing a treatment plan? That's just one of the questions I still can't answer.

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http://www.detroitnews.com/story/news/local/michigan/2015/10/08/flint-health-experts-support-detroit-water-reconnection/73568654/

Flint health experts support Detroit water reconnection

Detroit News Staff and wire reports 7:58 a.m. EDT October 8, 2015

Flint — A committee of local experts in health, water and science has recommended that Flint reconnect to Detroit's water system.

Flint administrator Natasha Henderson urged the committee to not think about cost and decide "what's in the best interest" for Flint, which has a water crisis due to elevated levels of lead in children.

The Technical Advisory Committee met Wednesday. It rarely meets, but state officials say it will have a role in Flint's water quality. The committee has no formal role in deciding whether Flint stops using the Flint River for water.

Flint has a public health emergency due to corrosive water leaching lead from old pipes. A Virginia Tech researcher says there would be dramatic reductions in about a month if the Detroit water system is used.

Gov. Rick Snyder's administration last week said it was considering temporarily reconnecting Flint to Detroit's water system temporarily in a bid to tackle the ongoing water quality and lead issues. The state also planned to expedite construction of a new water line to Lake Huron so a planned water authority that would service Flint could operate as soon as possible. An announcement on the Flint water plan was expected Thursday.

Sara Wurfel, a spokeswoman for Snyder, said the recommendation Wednesday "is an option we're helping thoroughly review and consider with the city, and the technical advisory committee's work is much appreciated in this matter. We're also focused on working hard in collaboration with all and implementing the key action steps outlined on Oct. 2 to help protect public health and ensure safe, accessible drinking water for Flint residents."

Since 2014, the Genesee County city has drawn its drinking water from the Flint River, which has led to major problems for residents.

Last month, the city issued an advisory about its drinking water after concerns surfaced about lead contamination.

On Tuesday, Snyder's administration made free water filters available for residents.

Meanwhile, Uber drivers began collecting donations of bottled water for Flint schools. And Mayor Dayne Walling this week said he gave to Flint Community Schools some 19 palettes Kroger grocers donated.

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http://www.mlive.com/news/flint/index.ssf/2015/10/donors_show_support_by_giving.html

Uber, others join in efforts to pour clean water into Flint

By Jiquanda Johnson | jjohns16@mlive.com The Flint Journal Follow on Twitter on October 08, 2015 at 5:00 AM, updated October 08, 2015 at 5:06 AM

FLINT, MI -- Businesses, charities and individuals have donated thousands of bottles of water to city of Flint residents and students since last year after controversy erupted over the quality of the city's water. Here is a list of some of the donors.

- The United Way of Genesee County has actively participated in looking at ways to ease water woes in the city of Flint.

- ZeroWater partnered with United Way and Flint Community Schools early October to bring water filters to the school district as a solution instead of having students drink bottled water.

- Uber announced on Oct. 6 that drivers in Detroit will pick up donated bottles of water to bring to Flint throughout the week. People in Detroit just have to use their Uber link to notify drivers that water needs to be picked up. The initiative runs from 2 to 7 p.m. from Oct. 6 - 8.

- There was another donation of more than 4,000 gallons of bottled water through the Flint Diaper Bank and United Way of Genesee County on Oct. 7.

- Donations came in from Flint-area Home Depots and Sam's Club after Hurley Medical Center doctors revealed that lead levels in children in Flint had elevated after the city switched from Detroit's water source to the Flint River.

- Mott Community College issued an Oct. 7 media release saying they are donating bottled water to Pierce Elementary School on the city's north side on Oct. 8.

- Swan Valley High School in Saginaw is collecting bottled water to send to Flint Public Schools. The bottled water drive ends Oct. 9 and school officials are hoping to drop donations off to Flint Community Schools on Oct. 9.

- Bendle High School sophomore Chase Harrison raised money to purchase bottled water for Flint Community Schools.

- Lavish Living, a Flint-based organization, has donated at least 200 cases of water to Flint Community Schools. As of Oct. 6 the organization was still working to collect more water for students.

- The Flint Northwestern football team delivered an estimated

40 cases of water on Oct. 5 to Flint area residents between Dupont, Clio, Carpenter and Pierson roads.

•□□□□□□□□ General Motors Foundation

•□□□□□□□□ In January, Sargent Title Co. collected about 600 cases of water to donated to Flint residents.

•□□□□□□□□ Absopure Water Corp. donated a semi-truck worth of bottled water to Flint residents in January.

•□□□□□□□□ 1st Congregational United Church of Christ in Kalamazoo donated 4,000 bottles of water in September.

•□□□□□□□□ Al Serra Auto Plaza announced Oct. 7 that they will serve as drop off location for bottled water donations. If donors give 12 or more bottles of water, the dealership is offering free tire rotation.

•□□□□□□□□ In March, members of the Michigan National Action Network provided an estimated 10,000 bottles of water to Flint residents.

•□□□□□□□□ District leaders also expect at least 1,000 cases of bottled water to arrive at the Food Bank on Wednesday, Oct. 7, from the Saginaw Chippewa Indian Tribe and Soaring Eagle Waterpark and Hotel and Soaring Eagle Casino and Resort.

The Flint Journal will do updates as more donor names are provided. If anyone has donor information make a note of it in the comments section of this post, or email The Flint Journal at flnews@mlive.com.

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http://michronicleonline.com/2015/10/07/flint-water-crisis-a-bitter-indictment-of-dysfunctional-emergency-manager/

Flint water crisis a bitter indictment of dysfunctional emergency manager

By Curt Guyette, Special to The Michigan Chronicle

Stark evidence of how terribly bad things can go when democracy is dismantled can be found in the elevated levels of lead in the children of Flint.

Because of decisions made by an appointed emergency manager, the tragically high costs of trying to balance a budget by switching to an unsafe water source will be borne by kids now forced to struggle with lower IQs, behavioral problems, learning disabilities, and a host of other ill effects.

This is what can happen when people are denied full access to representative government; they get poisoned by appointees with no connection to the community. Under Michigan's emergency manager law – PA 436 — gubernatorial appointees can leave town claiming to have successfully solved a fiscal crisis when in fact what they leave in their wake is a catastrophe of monumental proportions.

In recent days, as the lead problems in Flint have made international news, former Flint emergency manager Darnell Earley – the man in charge when the switch to the Flint River was made, and who is now overseeing the education of the children in Detroit Public Schools – has tried to deny any responsibility for the catastrophe.

According to the Detroit Free Press, Earley claimed in an e-mailed statement "that he was not involved in the decision to use river water."

The governor's office and Earley can rightfully claim that the Flint mayor and City Council initially gave their blessing to the switch made 18 months ago. But that fig leaf provides little real cover for the state officials now trying to run away from their disastrous decision.

For starters, it doesn't matter what the mayor and City Council had to say when the decision was made. The emergency manager, under the sweeping powers granted under Public Act 436, had complete authority to make the switch regardless of what Flint's elected officials wanted.

Moreover, those officials were in essence working for the emergency manager, not the people who elected them. The EM decided how much pay the mayor and council members drew, and how much power they could wield.

How do things go when appointed officials try to buck the control of an EM? As we've seen in Benton Harbor and Detroit Public Schools, the answer is that they get denuded of all power and are completely marginalized.

The message to elected officials under state control has been made perfectly clear: play ball with the EM, or else.

But there is another problem with the EM law as well, one made painfully obvious in Flint. In a normally-functioning democracy, when it came time for a city of Flint to conduct tests to show it is in compliance with federal drinking water regulations, the city would be an independent actor with the Michigan Department of Environmental Quality (MDEQ) serving as a separate check on the system, another independent actor providing oversight to make sure the job is done correctly.

Instead, with Governor Rick Snyder's man being the one in charge when the decision was made to start using river water – a decision that was almost instantly revealed to be fraught with problems – the MDEQ, instead of being a watchdog protecting the citizens of Flint, served as a collaborator, working with the city to do everything in their power to skew results so that their tests would make it appear that the water was safe when it wasn't.

How do we know it wasn't safe? Because grassroots citizen groups worked with researchers at Virginia Tech and the ACLU of Michigan to conduct an independent test of nearly 300 city homes and found that the problem was far worse than the city and state claimed.

When those results were released in mid-September, the response by the state was to try and discredit them. The same was true a week later, when a Hurley Children's Hospital study found the number of children with elevated lead levels doubled after the switch to the Flint River was made.

Those two studies, and the host of problems with the state and city's water testing, last week prompted the ACLU of Michigan, the Natural Resources Defense Council, and an array of civic groups to file a petition with the U.S. EPA, calling upon the federal government to come in and provide the oversight necessary to ensure Flint's water is clean and safe.

Finally, after the state's own data confirmed those findings, and Genesee County officials took the drastic step of declaring a public health emergency, the governor and MDEQ were forced to finally admit the truth and started taking some action.

But even if those measures are enough – and they may well not be, failing as they do to require a switch back to the much cleaner and far less corrosive Detroit system – the damage already caused by this governor and his emergency managers is irreversible for the children who will struggle for the rest of their lives because of the decisions made while Flint was under state control and democracy was suspended.

Jeff Kelley
Director, Office of External Communications
U.S. EPA Region 5
ph: 312-353-1159

To: Hedman, Susan[hedman.susan@epa.gov]; Kaplan, Robert[kaplan.robert@epa.gov]; Hyde, Tinka[hyde.tinka@epa.gov]
Cc: Rowan, Anne[rowan.anne@epa.gov]; Cassell, Peter[cassell.peter@epa.gov]; Beckmann, Ronna Erin[beckmann.ronna@epa.gov]; Harrison, Melissa[Harrison.Melissa@epa.gov]; Abrams, Dan[Abrams.Dan@epa.gov]; Poy, Thomas[poy.thomas@epa.gov]
From: Kelley, Jeff
Sent: Thur 10/8/2015 4:08:07 PM
Subject: RE: Flint clips for morning of Oct. 8

Here's the first coverage of this morning's announcement…

•□□□□□□□□ Snyder says Flint should reconnect to Detroit water (Detroit Free Press)

•□□□□□□□□ Governor calls for $16M plan for Flint water crisis, switch to Detroit (Flint Journal)

•□□□□□□□□ Gov. Snyder moves to come up with $12 million to switch Flint's water back to Detroit's supply (Michigan Radio)

•□□□□□□□□ Gov. Rick Snyder supports switching Flint water system back to Detroit (Associated Press)

•□□□□□□□□ Gov. Snyder says Flint should move back to Detroit water (WXYZ)

•□□□□□□□□ Flint returning to Detroit water amid lead concerns (CNN)

•□□□□□□□□ The fight for clean water in Flint, Michigan (Al Jazeera)

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http://www.freep.com/story/news/local/michigan/2015/10/08/snyder-flint-water-reconnect/73567778/

Snyder says Flint should reconnect to Detroit water

By John Wisely, Detroit Free Press 10:30 a.m. EDT October 8, 2015

Gov. Rick Snyder said today that Flint should reconnect to Detroit's water system to address the elevated lead levels in its drinking water system.

The connection would give Flint a better source than the Flint River, where it has been drawing its water since last year when it disconnected from Detroit. Flint has joined Genesee County in building a new pipeline from Lake Huron as part of the Karegnondi Water Authority, but that project isn't expect to come online until next year.

William Wolfson of the Detroit Water and Sewerage Department told the Free Press earlier this week that Detroit wouldn't charge any reconnection fee other than the labor costs associated with joining the pipes again.

At a news conference this morning, Snyder brought with him Dan Wyant of the Department of Health and Human Services and Dr. Eden Wells, chief medical executive at the department. Ridgway White of the Charles Stewart Mott Foundation also attended along with Flint Mayor Dayne Walling.

"I could hardly sleep knowing that our youngest and most vulnerable children were at risk," Walling said.

He said public confidence is an important part of public safety. He said the switch back to Detroit would be the fastest way to provide safe water.

Flint has been battling problems with its municipal drinking water system for more than year after disconnecting from the Detroit Water and Sewerage Department.

Flint had purchased water from Detroit for years, but long complained about the cost, which it hopes to reduce by piping its own water supply from Lake Huron and treating at its own plant.

The pipeline is under construction but in the meantime, the city has been drawing water from the Flint River to treat at its plant. Flint had been using the river as a backup source whenever there were disturbances in service from Detroit, but problems arose when it began using river water as its primary source.

Last year, the city found E. coli in the water and later rust and other materials that discolored it. Now the water coming into homes has been found to have elevated lead levels, prompting the current crisis, which has led to distribution of water filters across the city to avoid lead poisoning.

The water leaving the Flint Water Plant contains no lead, but experts believe its chemical composition causes corrosion in pipes and plumbing fixtures that do contain lead. That lead then comes out of faucets in homes and business across Flint, experts say.

On Wednesday, a technical advisory committee made up of experts in engineering, chemistry, public health and other fields recommended to the city that it reconnect to the Detroit water system until its own Lake Huron supply comes online.

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http://www.mlive.com/news/flint/index.ssf/2015/10/governor_calls_for_16-million.html

Governor calls for $16M plan for Flint water crisis, switch to Detroit

By Ron Fonger | rfonger1@mlive.com The Flint Journal on October 08, 2015 at 11:44 AM, updated October 08, 2015 at 11:46 AM

FLINT, MI -- Gov. Rick Snyder has announced a $16-million plan to reduce lead in the city's drinking water, with most of the funding to reconnect Flint to the Detroit water system in as soon as two weeks.

"We believe it will be better for the citizens of Flint ... This is the city of Flint making the decision ... We're supporting that fully," said Snyder, who said he would ask the state Legislature for a total of $10 million to address the Flint water crisis.

The governor's plan calls for buying nine months of water from the Detroit Water and Sewerage Department with at least $6 million coming from the state, a $4-million grant from the Charles Stewart Mott Foundation, and $2 million from the city.

An additional $4 million will be requested from the state for efforts to address immediate lead issues, including further testing of children in Flint school buildings where the state this week found three buildings that tested above the federal limits for lead in the drinking water. One school tested at more than six times the limit.

Snyder's announcement comes on the heels of a recommendation by Flint's Technical Advisory Committee Wednesday, Oct. 8, to change the city's drinking water source and the declaration of a public health emergency last week because of rising levels of lead in both water and the blood of children and infants here.

Flint Mayor Dayne Walling said he will ask the City Council and Flint's Receivership Transition Advisory Board to approve the city's contribution to switch to Detroit-supplied water.

Walling said he "could hardly sleep" once he found out the extent of the city's lead problem two weeks ago.

It was two weeks ago that a Hurley Medical Center doctor released a study showing the percentage of Flint infants and children with above average lead levels has nearly doubled citywide since the switch to river water, and has nearly tripled among children in "high risk" areas of lead exposure.

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http://michiganradio.org/post/gov-snyder-moves-come-12-million-switch-flints-water-back-detroits-supply#stream/0

Gov. Snyder moves to come up with $12 million to switch Flint's water back to Detroit's supply

Mark Brush, Michigan Radio • 30 minutes ago

Gov. Rick Snyder this morning held a press conference in which he said he supports reconnecting the city of Flint's water supply back to Detroit's water system.

Snyder said he will ask the Legislature to provide half ($6 million) of the $12 million bill to reconnect the system. The city of Flint will pay $2 million, and the Charles Stewart Mott Foundation will contribute $4 million.

Mayor Dayne Walling said he expects the city to reconnect to the Detroit system in two weeks.

Last year, Flint's state-appointed emergency manager, in a money saving move, ended the city's connection to Detroit's water supply and instead started using the Flint River for the city's water source.

Multiple problems with the city's water supply started soon after.

Independent research that found increasing lead levels in children in the city of Flint prompted government officials to act. The finding coincided with other independent findings of elevated levels of lead in the city's drinking water supply.

Virginia Tech researchers found Flint River water to be more corrosive to the city's old infrastructure. Lead leached from the old pipes into homes, schools, and businesses.

They say water from Detroit, which comes from Lake Huron, is less corrosive.

Snyder said the state is following the recommendation of the Flint water technical advisory committee that met yesterday. The committee recommended switching back to the Detroit system.

Detroit's water supply has been "optimized" to control for corrosion of drinking water supply pipes.

But switching over will not immediately resolve the problem. More from the state's press release:

However, reconnecting with the authority will not completely resolve the city's problem with lead service lines or aging infrastructure. It will take time for pipes in Flint to become coated with the phosphate corrosion control. Additionally, some households in the city could experience lead in their drinking water until all lead pipes and plumbing are replaced.

Marc Edwards, a water quality expert from Virginia Tech University and one of the main researchers who brought the city's lead problem to light, says he would expect lead levels to drop in one month after the switch back to Detroit water. However, as the lining of the water pipes has changed by running Flint River water through the system, the system will have to continually monitored.

In a statement, Flint Mayor Dayne Walling said making the switch is the quickest way to resolve the problem.

"Reconnecting to Detroit is the fastest way to deliver clean, safe water to Flint and stabilize the infrastructure system," Flint Mayor Dayne Walling said. "I appreciate the state, the Mott Foundation, Detroit, and the county's participation in a solution for Flint's water problems. The health and safety of Flint's families, children and seniors is my top priority, and reconnecting to Detroit is a major step that the city could not take alone given budget constraints."

In addition to the switch, state officials say they will continue to supply water filters to people in the city, offer free lead tests to Flint water customers, and hire more staff to continue health exposure monitoring in the city.

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http://www.themorningsun.com/general-news/20151008/gov-rick-snyder-supports-switching-flint-water-system-back-to-detroit

Gov. Rick Snyder supports switching Flint water system back to Detroit

FLINT (AP) >> Michigan Gov. Rick Snyder called Thursday for Flint to switch back to Detroit's water system to address a public health emergency over the city's water supply.

Flint stopped using water from the Detroit system last year as a cost-cutting measure, opting instead for a supply direct from the Flint River. But since the swap, residents have complained of the water's funky smell, taste and appearance, and doctors discovered that the corrosive river water was drawing lead from aging pipes in some homes.

The governor announced Thursday that he would ask state lawmakers for $6 million, half of the $12 million need to reconnect Flint to Detroit's system through next summer. Then the city would transition to a new regional water authority drawing water from Lake Huron.

Snyder said Flint would provide $2 million and the Charles Stewart Mott Foundation has committed $4 million.

“It will be better for the citizens of Flint, in terms of public safety, which is our paramount concern,” he said at a news conference at the foundation’s office in Flint.

It is the “fastest way to protect public health and stabilize Flint’s water system,” Flint Mayor Dayne Walling said.

The announcement came a day after local experts in health, water and science recommended that Flint reconnect to Detroit’s water system while it awaits a new pipeline to Lake Huron.

The Snyder administration released results from a lead-screening program in schools and homes. Of 37 samples at 13 buildings, four samples spread over three buildings exceeded the federal action level of 15 parts per billion. Flint is under a public health emergency due to lead in the water supply.

State government and nonprofit groups have been distributing filters and bottled water to Flint homes and schools.

Snyder on Thursday also committed $3.5 million more for filters, free lead testing and hiring additional staff to conduct health exposure monitoring for lead in drinking water.

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http://www.wxyz.com/news/gov-snyder-says-flint-should-move-back-to-detroit-water

Gov. Snyder says Flint should move back to Detroit water

10:44 AM, Oct 8, 2015

1 hour ago

LANSING, Mich. (WXYZ) - As the water crisis in Flint continues, Michigan Gov. Rick Snyder announced on Thursday that he believes Flint should move back to the Detroit water system.

According to the governor's office, Snyder said the city should use the Great Lakes Water Authority as the source of the drinking water until the Karegnondi Water Authority Pipeline is completed. The KWA controls the water system in Flint, and the pipeline is expected to be completed next summer.

Snyder said he would ask the state legislature to provide half of the $12 million that is needed to reconnect Flint with the Great Lakes Water Authority.

On top of that, Flint city government would have to provide $2 million and the Charles Stewart Mott Foundation has committed the other $4 million needed.

“All Flint residents need clean, safe drinking water,” Snyder said in a release. “The technical experts helping the city on its water advisory all agree this move back to the Great Lakes Water Authority provides the best public health protection for children and families.

Right now, Flint is under a public health emergency because of corrosive water with lead from old pipes.

According to Flint Mayor Dayne Walling, reconnecting back to Detroit is the "fastest way to deliver clean, safe water to Flint and stabilize the infrastructure system."

Reconnecting to the GLWA will not solve all of Flint's problems, according to Snyder. It will take time for the pipes to get coated with the phosphate corrosion control. Because of that, some houses in the city could have lead in their drinking water until all pipes and plumbing are replaced.

Free water filters are available for Flint residents. For those enrolled in Michigan Department of Health and Human Services assistance programs, you can get them at the 125 E. Union St. or 4809 Clio Rd. MDHHS locations.

Anyone not enrolled in MDHHS assistance programs can get the filters t the Genesee County Community Action Resource Department offices at 2727 Lippincott and 601 N. Saginaw in Flint.

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http://www.cnn.com/2015/10/08/us/michigan-flint-water/index.html

Flint returning to Detroit water amid lead concerns

By Jason Hanna, CNN, Updated 10:39 AM ET, Thu October 8, 2015

(CNN)The Michigan city of Flint will return to Detroit's water system because of concerns over water quality -- including lead exposure -- after the city made a switch last year, Flint's mayor said Thursday.

Michigan Gov. Rick Snyder said he will ask the state legislature to provide $6 million to cover the estimated $12 million cost to reconnect Flint to Detroit's water system.

This is "the fastest way" to protect public health, Flint Mayor Dayne Walling told reporters at a news conference.

Thursday's announcement comes more than two weeks after a medical study, according to CNN affiliate WDIV, showed that the percentage of Flint children with elevated lead levels nearly doubled after Flint stopped using the Detroit water system.

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http://america.aljazeera.com/articles/2015/10/8/the-fight-for-clean-water-in-flint-michigan.html

The fight for clean water in Flint, Michigan

It isn't the government, but private citizens and researchers who have been battling to reveal dangerous lead levels

Azure Gilman, al Jazeera, October 8, 2015 8:18PM ET

Officials declared a public health emergency this month for Flint, Michigan, advising residents not to use the city's tap water without filtering after studies showed elevated lead levels in the water — and in children's blood.

But it was a handful of citizen activists and independent researchers who finally got the danger acknowledged, even as some officials denied there was a problem.

At a press conference on Thursday morning, Michigan governor Rick Snyder announced that after meeting with a technical advisory council, he was in full support of Flint returning to the Great Lakes Water Authority, from which the city previously got its water. Snyder said that the change would cost $12 million, and that he would ask the Michigan legislature to provide $6 million towards that cost. The Mott Foundation has said that they will cover $4 million, and the City of Flint will provide $2 million.

In April 2014, economically battered Flint switched its water source from Lake Huron to the less-expensive Flint River. Researchers at Virginia Tech say the new water is more corrosive and is leaching lead from pipes into the drinking water. After the switch, the number of children with elevated lead levels rose to 4 percent in 2015, from 2.1 percent in 2013, according to a study by a pediatrician at Hurley Medical Center in Flint. In some areas, that number rose as high as 6.3 percent from 2.5 percent.

One of the residents to raise an early alarm was LeeAnne Walters, after her 4-year-old son Gavin started breaking out in rashes in July 2014. He had to take Benadryl every time he took a bath, and Gavin was diagnosed with lead poisoning in April of 2015, Walters said.

The City of Flint, along with the Michigan Department of Environmental Quality (MDEQ), tested the water in Walters' home and found elevated lead levels. But Walters said that the city government denied anything was wrong with Flint's water.

"They went around and had meetings telling everyone that the problem was specific to my home due to my internal plumbing," Walters said. "It's infuriating. You're paying to be poisoned. And you're paying for this, and you're being called a liar and stupid by the emergency manager and the DEQ in a public meeting."

The MDEQ said Walters "had an unusually long lead service line, which appears to have contributed to her situation. However, this question is better addressed by the city." The City of Flint had not responded to a request for comment at the time of publication.

Flint Mayor Dayne Walling drank tap water on TV in July 2015 in an attempt to ease residents' concerns. He said that he and his family drink the city's water every day.

The City of Flint and the MDEQ tested the water after the switch to the Flint River, and said it was fine. But there were problems with those tests, residents and researchers said.

The MDEQ lowered the number of samples required to 60 from 100, according to Marc Edwards, who lead the water testing research team at Virginia Tech, and Curt Guyette, an investigative reporter with the American Civil Liberties Union of Michigan. A spokesman for the MDEQ, Brad Wurfel, said that the sample requirements are based on population, and that the requirement was lowered because new census data showed Flint's population had dropped below 100,000. He also cited difficulty in getting enough people to send in water sample kits for testing. "Participation has historically been a well-documented challenge in Flint," he said.

In a report [PDF] obtained through a Freedom of Information Act request, the City of Flint said that the homes they tested had lead pipes. But when Guyette confronted officials in September 2015 about how they were able to determine that every house tested had lead service lines, which run under city streets, a utilities administrator for the City of Flint said on camera: "We're not, really. We threw bottles out everywhere just to collect as many as we can to try to hit our number." He was referring to bottles used to collect water samples, and the number of homes they were required to sample.

"In essence they did their testing, and they got high lead, even though they didn't look at the homes they were supposed to," Edwards said. "They were supposed to look at homes with lead pipes, and they just randomly sent bottles out, which would make lead look lower than it is."

In late April of this year, LeeAnne Walters called Edwards, who said he then tested her water independently. In one sample, he said he found that she had lead levels of 13,200 parts per billion. The EPA allows a lead level of 15 parts per billion in tap water.

Along with fellow Flint resident Melissa Mays, Walters started an advocacy group called Water You Fighting For? Together with the ACLU of Michigan, Concerned Pastors for Social Action, and the Democracy Defense League, the activists helped get Edwards to come to Flint and conduct an independent analysis of the water.

Edwards said he paid for over $40,000 worth of testing out of his own pocket. He eventually got funding from the National Science Foundation to cover the cost. He said he sent water test kits to hundreds of homes, expecting to get 25 percent of the kits returned. But Water You Fighting For? and the other activist groups helped promote and organize the testing, and 90 percent came back.

"Achieving a 90 percent return rate was something I never thought possible," said Edwards.

Meanwhile, Dr. Mona Hanna-Attisha at Hurley Medical Center did her own study of blood lead levels in the children of Flint, and announced the results on Sept. 24. The study was not requested by the city or the state. Rather, Hanna-Attisha said she had heard from a friend at a dinner party that Flint had water problems. When she asked someone from Genesee County Health Department about it, she said she was told that that the department didn't control water.

“That's when I started my crusade,” she said.

The long-term repercussions of Flint's water problems could be devastating. The U.S. Centers for Disease Control and Prevention says that lead exposure in children is “particularly harmful to the developing brain,” and is associated with decreased intelligence, among many other symptoms. Hanna-Attisha said that Flint children could have long-term problems because of early lead poisoning.

“In five years there's going to be more kids who need early intervention and special education,” Hanna-Attisha said. “And in 15 to 20 years, there may be more kids that are going to be in the criminal justice system. The costs are tremendous… a whole generation of kids.”

As late as Sept. 28, The Associated Press quoted MDEQ spokesman Brad Wurfel as saying, “Flint's drinking water is safe in that it's meeting state and federal standards.”

In response to questions from Al Jazeera, Wurfel said that “the city, the state and the U.S. EPA are taking necessary steps to address lead concerns in Flint. Free lead filters for all Flint residents are a precautionary step to ensure public health while we look more closely at exposure concerns.”

Virginia Tech water expert Edwards said he is ashamed that Flint's water situation was allowed to happen in the United States. "I shudder to think what would have happened if the residents hadn't figured this out," Edwards said. "Because the kids would still be drinking this lead water, being encouraged to drink this lead water when it was not safe."

From: Kelley, Jeff
Sent: Thursday, October 08, 2015 8:11 AM
To: Susan Hedman; Robert Kaplan (kaplan.robert@epa.gov); Hyde, Tinka
Cc: Rowan, Anne (rowan.anne@epa.gov); Cassell, Peter; Ronna Beckmann; Melissa Harrison (Harrison.Melissa@epa.gov); Abrams, Dan; Poy, Thomas
Subject: Flint clips for morning of Oct. 8

Note that Gov. Snyder is expected to make an announcement at 10 a.m. Eastern. The state will be livestreaming the announcement at http://1.usa.gov/1QapVxk

- Gov. Snyder says he'll make announcement on Flint water Thursday (Flint Journal)
- Governor plans 10 a.m. announcement on troubled Flint water system (Associated Press)
- Flint Officials Are No Longer Saying the Water Is Fine (New York Times)
- Waiting for answers, action in Flint water crisis (Detroit Free Press)
- Flint health experts support Detroit water reconnection (Detroit News)
- Uber, others join in efforts to pour clean water into Flint (Flint Journal)
- Flint water crisis a bitter indictment of dysfunctional emergency manager (Michigan Chronicle)

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http://www.mlive.com/news/flint/index.ssf/2015/10/gov_snyder_says_hell_make_anno.html

Gov. Snyder says he'll make announcement on Flint water Thursday

By Ron Fonger | rfonger1@mlive.com The Flint Journal on October 07, 2015 at 9:45 PM, updated October 08, 2015 at 8:08 AM

FLINT, MI -- Gov. Rick Snyder says on Twitter that he will make an announcement about Flint water at 10 a.m. Thursday.

The planned announcement comes less than 24 hours after Flint's Technical Advisory Committee recommended the city end its use of the Flint River as its water source.

Since making the switch from using pre-treated Lake Huron water from the city of Detroit to treating river water at its own plant in April 2014, Flint officials have struggled to maintain the quality and safety of water delivered to city residents.

Snyder's Twitter message says, "Watch live tomorrow at 10 a.m. as I make an announcement regarding Flint water" at mi.gov/SnyderLive.

The state's Web site says the governor will be joined by Flint Mayor Dayne Walling, other state officials, and Ridgway White of the Charles Stewart Mott Foundation.

High levels of lead in city water and in the blood of children and infants since the city changed its water source have triggered a public health emergency here, including the mass distribution of lead-clearing faucet filters and bottled water.

Researchers from Virginia Tech university say river water has proven to be far more corrosive than water from the Detroit Water and Sewerage Department, causing lead to leach into homes that have lead service lines.

Flint City Administrator Natasha Henderson said today, Oct. 7, that she believes the position of state officials has been shifting on continued use of the Flint River, a change that was made while Flint was being run by a state-appointed emergency manager.

"We're to the point that the state believes this is a public health emergency," Henderson told the City Council. "From what I see, the state is working very well with us."

The city administrator is among officials who have advocated for a return to buying water from the DWSD since a study was released last month by Hurley Medical Center's director of pediatric residency program.

The study showed the percentage of Flint infants and children with above average lead levels has nearly doubled citywide since the switch to river water, and has nearly tripled among children in "high risk" areas of lead exposure.

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http://www.macombdaily.com/general-news/20151008/governor-plans-10-am-announcement-on-troubled-flint-water-system

Governor plans 10 a.m. announcement on troubled Flint water system

FLINT (AP) — Gov. Rick Snyder plans an announcement about the water system in Flint, which is facing a public health emergency over lead in its water.

A posting on the state's website says Snyder on Thursday morning will be joined for the announcement by officials including Flint Mayor Dayne Walling, state Department of Environmental Quality Director Dan Wyant and state Department of Health and Human Services Director Nick Lyon.

The announcement comes a day after a committee of local experts in health, water and science recommended Flint reconnect to Detroit's water system while it awaits a new pipeline to Lake Huron.

Flint has a public health emergency due to corrosive water leaching lead from old pipes. State government and nonprofit groups are distributing filters and bottled water to Flint homes and schools.

Snyder's announcement can be viewed live at 10 a.m. Thursday, Oct. 8 by visiting http://1.usa.gov/1QapVxk

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http://www.nytimes.com/2015/10/08/us/reassurances-end-in-flint-after-months-of-concern.html

Flint Officials Are No Longer Saying the Water Is Fine

By MONICA DAVEY, New York Times, OCT. 7, 2015

FLINT, Mich. — All along, through months of complaints from residents of this city about the peculiar colors and odors they said were coming from their faucets, the overriding message from the authorities here was that the water would be just fine.

Yes, there had been a boil order when fecal coliform bacteria turned up in some neighborhoods last year. And yes, the extra chlorine that was pumped in to solve that problem seemed to create another one — increased levels of a different contaminant.

Still, the guidance from Flint officials about the temporary water supply they switched to in 2014 — partly to save money — sounded assuring. In a notice sent to residents in July, city officials declared: "This is not an emergency. If a situation arises where the water is no longer safe to drink, you will be notified within 24 hours."

The soothing talk has vanished. In recent weeks, testing has shown increased levels of lead in the blood of some Flint children — and health officials pointed to the water as a possible source.

First, the city advised residents to run their water for five minutes before using it, to use only cold water for drinking and cooking, and to install lead-removing water filters. Then county officials issued an emergency advisory recommending that people not drink Flint's water unless it is tested for lead or filtered.

And last Friday, after corroborating that lead levels had risen in some children, state officials called for the water to be tested at all Flint public schools and for stepped-up efforts to replace lead service lines; they also promised $1 million to provide filters.

Officials met here on Wednesday afternoon, and talks were underway, officials said, for additional solutions that could come as early as Thursday. Gov. Rick Snyder said on Twitter late Wednesday that he planned to make an announcement about the situation on Thursday morning.

Private groups have raced to donate bottled water to schools, where the water fountains are now shut off, as well as filters to families who cannot afford them. Saying "we're just in a heck of a bind," Robert J. Pickell, the Genesee County sheriff, began serving bottled water and food that need not be cooked in water to hundreds of inmates in the county jail. Some residents have begun washing their children and pets with bottled water.

And Flint's mayor, Dayne Walling, who had attended a 2014 event to celebrate the switch to the new water supply, called for returning to the city's old water supply and urged state officials to provide millions of dollars to help pay for it.

The contaminated water was just the latest blow to Flint, an economically battered city that has struggled for years with factory closings, job losses and population decline.

Along Saginaw Street downtown, where at least one business had an “un-leaded” sign posted by a jug of water, residents had lingering questions: Would filters really do enough to make the water safe? What about unfiltered showers? Could they rely on the water at work and at restaurants? And why had it taken so long for leaders to figure out that there was a problem?

“I don’t think people know what’s going on at all,” said Chris Thornton, 49, who described the first blast of water from his faucets some days as looking like urine, smelling like bleach and tasting of metal. After his wife, Ronda, 50, felt sick to her stomach for months, the Thorntons began buying jugs of bottled water, though the price — on top of an already steep water bill — has been overwhelming.

“As far as my family,” Ronda Thornton said, “we’ve just given up on the city’s water.”

Flint’s water problems are tied inextricably to its fiscal woes. In 1960, nearly 200,000 people lived here. But auto plants closed, and the population has dropped by half. By 2011, Flint’s shrunken tax base and seemingly intractable budget problems prompted Mr. Snyder to appoint an emergency manager for the city. Over the next four years, the city had four managers overseeing operations. Along the way, the city switched its water supply.

For decades, the city bought water from Detroit, which treated water from Lake Huron, then piped it here, 70 miles to the northwest. But with the costs mounting, Flint’s leaders decided they could save millions by joining a new regional authority that would draw and treat its own water from Lake Huron.

There was one complication: Flint needed an alternative water supply from April 2014 until the new regional system is ready, probably next year. In the interim, Flint switched to using water from the Flint River, which state officials say had been a backup source in the past.

Ask residents about the Flint River, and many of them roll their eyes. They say it was once as a dumping ground for car parts, grocery carts and refrigerators. There have been significant improvements and intensive restoration campaigns in recent years, though a Flint River Fest set for Friday has been postponed, organizers said, given the “current drinking water crisis.”

Even now, state officials say that treated Flint River water is safe and capable of meeting state and federal standards. Officials say the problem may be that some of the aging pipes and service lines that carry water into Flint’s homes and businesses contain lead and are being corroded by water. The water Flint used to receive from Detroit was treated with chemicals intended to prevent such corrosion.

For months, questions about lead and other risks multiplied. “Everyone kept saying: ‘It’s safe! It’s safe! It’s safe!’ ” recalled Melissa Mays, a Flint resident who says she was sickened by the water and has helped organize residents over the issue.

Then in September, a researcher from Virginia Tech released findings from the water in hundreds of Flint homes showing elevated lead levels. Blood tests released by a local pediatrician — and corroborated last week by state officials analyzing their own testing — showed an increase in lead levels in children in some neighborhoods since 2014, when the city began drawing water from the river.

“We all have a concern about Flint’s drinking water in terms of what we’re seeing in terms of lead,” Mr. Snyder said last week.

Mr. Walling said that the move to river water occurred when an emergency manager controlled the city, though the City Council did vote for the city’s plans for a new, regional water system. He acknowledged supporting the move in a state of the city address, but said that he had not been given sufficient information about the safety risks.

“I had to work with what I knew at the time,” Mr. Walling, who is up for election next month, said in an interview.

But for many residents, the authorities failed the city by taking so long to react. “Anytime you have to weigh money against the health and welfare of people, it always has to be the health and welfare you go with,” said the Rev. Alfred Harris, a local pastor who has stopped conducting baptisms at his church because of concerns about the water. “We’ve been talking about this for the last 14 months, and they did not give a sincere ear to any of us. Shame on you!”

LeeAnne Walters said her son, Gavin, 4, who has immune system issues, had suffered direct consequences. After the switch to river water, which sometimes looked brown in their house, Gavin dropped to 27 pounds, far below the weight of his twin brother, she said. He sometimes seemed unable to pronounce words he knew, she said, and then test results showed an elevated lead level in his blood.

“He is going to deal with the side effects of this for the rest of his life,” Ms. Walters said. “I don’t think there’s a word angry enough to describe my anger. I trusted the city, and I helped the city poison my kid. Who thought this could happen in the United States?”

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http://www.freep.com/story/opinion/columnists/nancy-kaffer/2015/10/07/flint-water-crisis/73534078/

Waiting for answers, action in Flint water crisis

By Nancy Kaffer, Detroit Free Press Columnist 10:27 p.m. EDT October 7, 2015

They are still waiting for answers about the water in Flint.

And it's hard to say when, or if, those answers are coming.

It has been two weeks since a hospital researcher found that more Flint kids had been lead poisoned since the city switched its municipal water supply. And it has been nearly a week since the State of Michigan abruptly changed its posture, acknowledging, after months of denial and empty assurances, that Flint's water supply was compromised.

Since then, a lot of folks have worked diligently to sort out how things went so badly wrong in this small, impoverished city, and what the State of Michigan is doing to fix it.

But solutions remain elusive.

The state announced Friday that it has devoted $1 million to provide water filters for Flint residents, is expanding water testing and expediting improved water treatment. But two weeks on, Flint hasn't started adding chemicals to its water that would allow it to pass safely through the city's lead service pipes. That plan can likely be ready within a week, and can be enacted as soon as it's approved by the Michigan Department of Environmental Quality. Scientists say it would take roughly a month before those chemicals would begin to effect Flint's drinking water.

That would be the right play, unless the city opts to rejoin the Detroit Water and Sewerage Department -- as water experts have recommended -- a decision that would likely require financial assistance from the State of Michigan but could result in potable water flowing from Flint taps within two weeks. Is it likely to happen? Your guess is as good as mine.

And state officials continue to insist that the rules designed to monitor water systems, to ensure safe drinking water, worked as they're supposed to.

Kids in danger

The effects of lead on children are irreversible. Lead-poisoned kids can experience a host of behavioral and developmental problems, and in two Flint ZIP codes, the percentage of children affected by lead has doubled, reversing a long trend of improving rates.

That's because in 2014, Flint decided to pump untreated water from the Flint River, ending a decades-long relationship with the Detroit Water and Sewerage Department, while a new regional water authority it's joining is under construction. Since then, Flint's been treating its water locally, prompting a rash of problems related to coliform bacteria, a disinfectant and its byproduct, and now, elevated lead.

Both of these decisions were made while Flint was under state oversight, during the appointments of a series of emergency managers appointed by and answerable to Gov. Rick Snyder. The Michigan Department of Environmental Quality, whose director is appointed by the governor, must ensure that water systems are producing safe drinking water. Because Flint's water decisions were made under Snyder's emergency managers, the governor's decision-making authority is one step closer to Flint's water crisis.

The water Flint bought from Detroit was "finished," in other words, safe for humans to drink, but also treated to create a film inside those pipes that kept the lead out. That's called "corrosion control," and Detroit achieved this goal by adding phosphates to the water it pumps from Lake Huron.

Flint doesn't.

It took an unreasonably long time to get a solid answer to this question.

Corrosion control

Since April 2014, treatment at Flint's plant has included adding lime to the water it distributed to customers, largely to make the water less acidic, Liane Shekter Smith, chief of the MDEQ's office of drinking water and municipal assistance, said Tuesday.

"There was no corrosion control plan put forward at the time of the switch," Shekter Smith said. "There was a belief that (acidity) adjustment would provide adequate corrosion control, and that rounds of testing would confirm or refute that."

Any new water supply must be tested at six-month intervals to determine whether it meets the guidelines of the federal lead and copper rule, a standard established by the U.S. Environmental Protection Agency.

Tests of Flint's drinking water showed roughly 6 parts per billion (how the presence of lead in water is reckoned) in water sampled between June and December of 2014, said MDEQ spokesman Brad Wurfel. The U.S. Centers for Disease Control and Prevention said there is no acceptable level of lead exposure, but 6 ppb would, in some cases, fall below the EPA's actionable level of 15 ppb.

But because the community Flint serves is so large, it must meet a different threshold, 5 ppb. If a second round of testing showed that lead levels continued to exceed it, Flint would be required to improve its method of corrosion control.

Water sampled between January and June of 2015 showed an alarming increase: lead levels had risen to 11 ppb.

That kind of testing, Shekter Smith said, is the most reliable way to determine whether corrosion control is working.

"Having it in place is best way to know what is happening out in the system," she said.

Given the elevated blood-lead levels in Flint kids, the damage lead can cause, and the permanence of that damage, is that enough?

"I think that we are following the protocol," she said, "and the protocol got us to the right place, and we're making the right decisions."

“It did?" said Erik Olson, a senior strategy director for the Washington, D.C.-based Natural Resources Defense Council. "It didn’t sound like it."

Because the composition of water varies so greatly, there's no one right way to do corrosion control, Olson said. But Flint's plan to use lime only should have prompted questions before switching to Flint River water.

"They definitely should have said, 'OK, what’s the basis of that decision? What’s your engineering study that shows that that’s optimizing your corrosion control?' " Olson said.

That Flint's river water would pass through pipes with lead components shouldn't have been surprising, Olson said -- the presence of lead in the water and sewage infrastructure is well-documented, and well-known.

So why didn't Flint's engineers account for that, when developing a treatment plan? That's just one of the questions I still can't answer.

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http://www.detroitnews.com/story/news/local/michigan/2015/10/08/flint-health-experts-support-detroit-water-reconnection/73568654/

Flint health experts support Detroit water reconnection

Detroit News Staff and wire reports 7:58 a.m. EDT October 8, 2015

Flint — A committee of local experts in health, water and science has recommended that Flint reconnect to Detroit's water system.

Flint administrator Natasha Henderson urged the committee to not think about cost and decide "what's in the best interest" for Flint, which has a water crisis due to elevated levels of lead in children.

The Technical Advisory Committee met Wednesday. It rarely meets, but state officials say it will have a role in Flint's water quality. The committee has no formal role in deciding whether Flint stops using the Flint River for water.

Flint has a public health emergency due to corrosive water leaching lead from old pipes. A Virginia Tech researcher says there would be dramatic reductions in about a month if the Detroit water system is used.

Gov. Rick Snyder's administration last week said it was considering temporarily reconnecting Flint to Detroit's water system temporarily in a bid to tackle the ongoing water quality and lead issues. The state also planned to expedite construction of a new water line to Lake Huron so a planned water authority that would service Flint could operate as soon as possible. An announcement on the Flint water plan was expected Thursday.

Sara Wurfel, a spokeswoman for Snyder, said the recommendation Wednesday "is an option we're helping thoroughly review and consider with the city, and the technical advisory committee's work is much appreciated in this matter. We're also focused on working hard in collaboration with all and implementing the key action steps outlined on Oct. 2 to help protect public health and ensure safe, accessible drinking water for Flint residents."

Since 2014, the Genesee County city has drawn its drinking water from the Flint River, which has led to major problems for residents.

Last month, the city issued an advisory about its drinking water after concerns surfaced about lead contamination.

On Tuesday, Snyder’s administration made free water filters available for residents.

Meanwhile, Uber drivers began collecting donations of bottled water for Flint schools. And Mayor Dayne Walling this week said he gave to Flint Community Schools some 19 palettes Kroger grocers donated.

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http://www.mlive.com/news/flint/index.ssf/2015/10/donors_show_support_by_giving.html

Uber, others join in efforts to pour clean water into Flint

By Jiquanda Johnson | jjohns16@mlive.com The Flint Journal Follow on Twitter on October 08, 2015 at 5:00 AM, updated October 08, 2015 at 5:06 AM

FLINT, MI -- Businesses, charities and individuals have donated thousands of bottles of water to city of Flint residents and students since last year after controversy erupted over the quality of the city's water. Here is a list of some of the donors.

•□□□□□□□□ The United Way of Genesee County has actively participated in looking at ways to ease water woes in the city of Flint.

•□□□□□□□□ ZeroWater partnered with United Way and Flint Community Schools early October to bring water filters to the school district as a solution instead of having students drink bottled water.

•□□□□□□□□ Uber announced on Oct. 6 that drivers in Detroit will pick up donated bottles of water to bring to Flint throughout the week. People in Detroit just have to use their Uber link to notify drivers that water needs to be picked up. The initiative runs from 2 to 7 p.m. from Oct. 6 - 8.

- There was another donation of more than 4,000 gallons of bottled water through the Flint Diaper Bank and United Way of Genesee County on Oct. 7.

- Donations came in from Flint-area Home Depots and Sam's Club after Hurley Medical Center doctors revealed that lead levels in children in Flint had elevated after the city switched from Detroit's water source to the Flint River.

- Mott Community College issued an Oct. 7 media release saying they are donating bottled water to Pierce Elementary School on the city's north side on Oct. 8.

- Swan Valley High School in Saginaw is collecting bottled water to send to Flint Public Schools. The bottled water drive ends Oct. 9 and school officials are hoping to drop donations off to Flint Community Schools on Oct. 9.

- Bendle High School sophomore Chase Harrison raised money to purchase bottled water for Flint Community Schools.

- Lavish Living, a Flint-based organization, has donated at least 200 cases of water to Flint Community Schools. As of Oct. 6 the organization was still working to collect more water for students.

- The Flint Northwestern football team delivered an estimated 40 cases of water on Oct. 5 to Flint area residents between Dupont, Clio, Carpenter and Pierson roads.

- General Motors Foundation

- In January, Sargent Title Co. collected about 600 cases of water to donated to Flint residents.

- Absopure Water Corp. donated a semi-truck worth of bottled water to Flint residents in January.

- 1st Congregational United Church of Christ in Kalamazoo donated 4,000 bottles of water in September.

- Al Serra Auto Plaza announced Oct. 7 that they will serve as drop off location for bottled water donations. If donors give 12 or more bottles of water, the dealership is offering free tire rotation.

- In March, members of the Michigan National Action Network provided an estimated 10,000 bottles of water to Flint residents.

•□□□□□□□□ District leaders also expect at least 1,000 cases of bottled water to arrive at the Food Bank on Wednesday, Oct. 7, from the Saginaw Chippewa Indian Tribe and Soaring Eagle Waterpark and Hotel and Soaring Eagle Casino and Resort.

The Flint Journal will do updates as more donor names are provided. If anyone has donor information make a note of it in the comments section of this post, or email The Flint Journal at flnews@mlive.com.

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http://michronicleonline.com/2015/10/07/flint-water-crisis-a-bitter-indictment-of-dysfunctional-emergency-manager/

Flint water crisis a bitter indictment of dysfunctional emergency manager

By Curt Guyette, Special to The Michigan Chronicle

Stark evidence of how terribly bad things can go when democracy is dismantled can be found in the elevated levels of lead in the children of Flint.

Because of decisions made by an appointed emergency manager, the tragically high costs of trying to balance a budget by switching to an unsafe water source will be borne by kids now forced to struggle with lower IQs, behavioral problems, learning disabilities, and a host of other ill effects.

This is what can happen when people are denied full access to representative government; they get poisoned by appointees with no connection to the community. Under Michigan's emergency manager law – PA 436 — gubernatorial appointees can leave town claiming to have successfully solved a fiscal crisis when in fact what they leave in their wake is a catastrophe of monumental proportions.

In recent days, as the lead problems in Flint have made international news, former Flint emergency manager Darnell Earley – the man in charge when the switch to the Flint River was made, and who is now overseeing the education of the children in Detroit Public Schools – has tried to deny any responsibility for the catastrophe.

According to the Detroit Free Press, Earley claimed in an e-mailed statement “that he was not involved in the decision to use river water.”

The governor’s office and Earley can rightfully claim that the Flint mayor and City Council initially gave their blessing to the switch made 18 months ago. But that fig leaf provides little real cover for the state officials now trying to run away from their disastrous decision.

For starters, it doesn’t matter what the mayor and City Council had to say when the decision was made. The emergency manager, under the sweeping powers granted under Public Act 436, had complete authority to make the switch regardless of what Flint’s elected officials wanted.

Moreover, those officials were in essence working for the emergency manager, not the people who elected them. The EM decided how much pay the mayor and council members drew, and how much power they could wield.

How do things go when appointed officials try to buck the control of an EM? As we’ve seen in Benton Harbor and Detroit Public Schools, the answer is that they get denuded of all power and are completely marginalized.

The message to elected officials under state control has been made perfectly clear: play ball with the EM, or else.

But there is another problem with the EM law as well, one made painfully obvious in

Flint. In a normally-functioning democracy, when it came time for a city of Flint to conduct tests to show it is in compliance with federal drinking water regulations, the city would be an independent actor with the Michigan Department of Environmental Quality (MDEQ) serving as a separate check on the system, another independent actor providing oversight to make sure the job is done correctly.

Instead, with Governor Rick Snyder's man being the one in charge when the decision was made to start using river water – a decision that was almost instantly revealed to be fraught with problems – the MDEQ, instead of being a watchdog protecting the citizens of Flint, served as a collaborator, working with the city to do everything in their power to skew results so that their tests would make it appear that the water was safe when it wasn't.

How do we know it wasn't safe? Because grassroots citizen groups worked with researchers at Virginia Tech and the ACLU of Michigan to conduct an independent test of nearly 300 city homes and found that the problem was far worse than the city and state claimed.

When those results were released in mid-September, the response by the state was to try and discredit them. The same was true a week later, when a Hurley Children's Hospital study found the number of children with elevated lead levels doubled after the switch to the Flint River was made.

Those two studies, and the host of problems with the state and city's water testing, last week prompted the ACLU of Michigan, the Natural Resources Defense Council, and an array of civic groups to file a petition with the U.S. EPA, calling upon the federal government to come in and provide the oversight necessary to ensure Flint's water is clean and safe.

Finally, after the state's own data confirmed those findings, and Genesee County officials took the drastic step of declaring a public health emergency, the governor and MDEQ were forced to finally admit the truth and started taking some action.

But even if those measures are enough – and they may well not be, failing as they do to require a switch back to the much cleaner and far less corrosive Detroit system – the damage already caused by this governor and his emergency managers is irreversible for the children who will struggle for the rest of their lives because of the decisions made while Flint was under state control and democracy was suspended.

Jeff Kelley
Director, Office of External Communications
U.S. EPA Region 5
ph: 312-353-1159

To: Davis, CatherineM[Davis.CatherineM@epa.gov]; Henry, Timothy[henry.timothy@epa.gov]; Fortin, Denise[Fortin.Denise@epa.gov]
From: Beckmann, Ronna Erin
Sent: Thur 10/8/2015 4:10:44 PM
Subject: FW: Flint clips for morning of Oct. 8

Ronna Beckmann

Office of the Regional Administrator

U.S. Environmental Protection Agency, Region 5

312-886-0689

beckmann.ronna@epa.gov

From: Kelley, Jeff
Sent: Thursday, October 08, 2015 11:08 AM
To: Hedman, Susan; Kaplan, Robert; Hyde, Tinka
Cc: Rowan, Anne; Cassell, Peter; Beckmann, Ronna Erin; Harrison, Melissa; Abrams, Dan; Poy, Thomas
Subject: RE: Flint clips for morning of Oct. 8

Here's the first coverage of this morning's announcement…

•□□□□□□□□ Snyder says Flint should reconnect to Detroit water (Detroit Free Press)

•□□□□□□□□ Governor calls for $16M plan for Flint water crisis, switch to Detroit (Flint Journal)

•□□□□□□□□ Gov. Snyder moves to come up with $12 million to switch Flint's water back to Detroit's supply (Michigan Radio)

•□□□□□□□□ Gov. Rick Snyder supports switching Flint water system back to Detroit (Associated Press)

•□□□□□□□□ Gov. Snyder says Flint should move back to Detroit water (WXYZ)

•□□□□□□□□ Flint returning to Detroit water amid lead concerns (CNN)

•□□□□□□□□ The fight for clean water in Flint, Michigan (Al Jazeera)

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http://www.freep.com/story/news/local/michigan/2015/10/08/snyder-flint-water-reconnect/73567778/

Snyder says Flint should reconnect to Detroit water

By John Wisely, Detroit Free Press 10:30 a.m. EDT October 8, 2015

Gov. Rick Snyder said today that Flint should reconnect to Detroit's water system to address the elevated lead levels in its drinking water system.

The connection would give Flint a better source than the Flint River, where it has been drawing its water since last year when it disconnected from Detroit. Flint has joined Genesee County in building a new pipeline from Lake Huron as part of the Karegnondi Water Authority, but that project isn't expect to come online until next year.

William Wolfson of the Detroit Water and Sewerage Department told the Free Press earlier this week that Detroit wouldn't charge any reconnection fee other than the labor costs associated with joining the pipes again.

At a news conference this morning, Snyder brought with him Dan Wyant of the Department of Health and Human Services and Dr. Eden Wells, chief medical executive at the department. Ridgway White of the Charles Stewart Mott Foundation also attended along with Flint Mayor Dayne Walling.

"I could hardly sleep knowing that our youngest and most vulnerable children were at risk," Walling said.

He said public confidence is an important part of public safety. He said the switch back to Detroit would be the fastest way to provide safe water.

Flint has been battling problems with its municipal drinking water system for more than year after disconnecting from the Detroit Water and Sewerage Department.

Flint had purchased water from Detroit for years, but long complained about the cost, which it hopes to reduce by piping its own water supply from Lake Huron and treating at its own plant.

The pipeline is under construction but in the meantime, the city has been drawing water from the Flint River to treat at its plant. Flint had been using the river as a backup source whenever there were disturbances in service from Detroit, but problems arose when it began using river water as its primary source.

Last year, the city found E. coli in the water and later rust and other materials that discolored it. Now the water coming into homes has been found to have elevated lead levels, prompting the current crisis, which has led to distribution of water filters across the city to avoid lead poisoning.

The water leaving the Flint Water Plant contains no lead, but experts believe its chemical composition causes corrosion in pipes and plumbing fixtures that do contain lead. That lead then comes out of faucets in homes and business across Flint, experts say.

On Wednesday, a technical advisory committee made up of experts in engineering, chemistry, public health and other fields recommended to the city that it reconnect to the Detroit water system until its own Lake Huron supply comes online.

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http://www.mlive.com/news/flint/index.ssf/2015/10/governor_calls_for_16-million.html

Governor calls for $16M plan for Flint water crisis, switch to Detroit

By Ron Fonger | rfonger1@mlive.com The Flint Journal on October 08, 2015 at 11:44 AM, updated October 08, 2015 at 11:46 AM

FLINT, MI -- Gov. Rick Snyder has announced a $16-million plan to reduce lead in the city's drinking water, with most of the funding to reconnect Flint to the Detroit water system in as soon as two weeks.

"We believe it will be better for the citizens of Flint ... This is the city of Flint making the decision ... We're supporting that fully," said Snyder, who said he would ask the state Legislature for a total of $10 million to address the Flint water crisis.

The governor's plan calls for buying nine months of water from the Detroit Water and Sewerage Department with at least $6 million coming from the state, a $4-million grant from the Charles Stewart Mott Foundation, and $2 million from the city.

An additional $4 million will be requested from the state for efforts to address immediate lead issues, including further testing of children in Flint school buildings where the state this week found three buildings that tested above the federal limits for lead in the drinking water. One school tested at more than six times the limit.

Snyder's announcement comes on the heels of a recommendation by Flint's Technical Advisory Committee Wednesday, Oct. 8, to change the city's drinking water source and the declaration of a public health emergency last week because of rising levels of lead in both water and the blood of children and infants here.

Flint Mayor Dayne Walling said he will ask the City Council and Flint's Receivership Transition Advisory Board to approve the city's contribution to switch to Detroit-supplied water.

Walling said he "could hardly sleep" once he found out the extent of the city's lead problem two weeks ago.

It was two weeks ago that a Hurley Medical Center doctor released a study showing the percentage of Flint infants and children with above average lead levels has nearly doubled citywide since the switch to river water, and has nearly tripled among children in "high risk" areas of lead exposure.

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http://michiganradio.org/post/gov-snyder-moves-come-12-million-switch-flints-water-back-detroits-supply#stream/0

Gov. Snyder moves to come up with $12 million to switch Flint's water back to Detroit's supply

Mark Brush, Michigan Radio • 30 minutes ago

Gov. Rick Snyder this morning held a press conference in which he said he supports reconnecting the city of Flint's water supply back to Detroit's water system.

Snyder said he will ask the Legislature to provide half ($6 million) of the $12 million bill to reconnect the system. The city of Flint will pay $2 million, and the Charles Stewart Mott Foundation will contribute $4 million.

Mayor Dayne Walling said he expects the city to reconnect to the Detroit system in two weeks.

Last year, Flint's state-appointed emergency manager, in a money saving move, ended the city's connection to Detroit's water supply and instead started using the Flint River for the city's water source.

Multiple problems with the city's water supply started soon after.

Independent research that found increasing lead levels in children in the city of Flint prompted government officials to act. The finding coincided with other independent findings of elevated levels of lead in the city's drinking water supply.

Virginia Tech researchers found Flint River water to be more corrosive to the city's old infrastructure. Lead leached from the old pipes into homes, schools, and businesses.

They say water from Detroit, which comes from Lake Huron, is less corrosive.

Snyder said the state is following the recommendation of the Flint water technical advisory committee that met yesterday. The committee recommended switching back to the Detroit system.

Detroit's water supply has been "optimized" to control for corrosion of drinking water supply pipes.

But switching over will not immediately resolve the problem. More from the state's press release:

However, reconnecting with the authority will not completely resolve the city's problem with lead service lines or aging infrastructure. It will take time for pipes in Flint to become coated with the phosphate corrosion control. Additionally, some households in the city could experience lead in their drinking water until all lead pipes and plumbing are replaced.

Marc Edwards, a water quality expert from Virginia Tech University and one of the main researchers who brought the city's lead problem to light, says he would expect lead levels to drop in one month after the switch back to Detroit water. However, as the lining of the water pipes has changed by running Flint River water through the system, the system will have to continually monitored.

In a statement, Flint Mayor Dayne Walling said making the switch is the quickest way to resolve the problem.

"Reconnecting to Detroit is the fastest way to deliver clean, safe water to Flint and stabilize the infrastructure system," Flint Mayor Dayne Walling said. "I appreciate the state, the Mott Foundation, Detroit, and the county's participation in a solution for Flint's water problems. The health and safety of Flint's families, children and seniors is my top priority, and reconnecting to Detroit is a major step that the city could not take alone given budget constraints."

In addition to the switch, state officials say they will continue to supply water filters to people in the city, offer free lead tests to Flint water customers, and hire more staff to continue health exposure monitoring in the city.

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http://www.themorningsun.com/general-news/20151008/gov-rick-snyder-supports-switching-flint-water-system-back-to-detroit

Gov. Rick Snyder supports switching Flint water system back to Detroit

FLINT (AP) >> Michigan Gov. Rick Snyder called Thursday for Flint to switch back to Detroit's water system to address a public health emergency over the city's water supply.

Flint stopped using water from the Detroit system last year as a cost-cutting measure, opting instead for a supply direct from the Flint River. But since the swap, residents have complained of the water's funky smell, taste and appearance, and doctors discovered that the corrosive river water was drawing lead from aging pipes in some homes.

The governor announced Thursday that he would ask state lawmakers for $6 million, half of the $12 million need to reconnect Flint to Detroit's system through next summer. Then the city would transition to a new regional water authority drawing water from Lake Huron.

Snyder said Flint would provide $2 million and the Charles Stewart Mott Foundation has committed $4 million.

"It will be better for the citizens of Flint, in terms of public safety, which is our paramount concern," he said at a news conference at the foundation's office in Flint.

It is the "fastest way to protect public health and stabilize Flint's water system," Flint Mayor Dayne Walling said.

The announcement came a day after local experts in health, water and science recommended that Flint reconnect to Detroit's water system while it awaits a new pipeline to Lake Huron.

The Snyder administration released results from a lead-screening program in schools and homes. Of 37 samples at 13 buildings, four samples spread over three buildings exceeded the federal action level of 15 parts per billion. Flint is under a public health emergency due to lead in the water supply.

State government and nonprofit groups have been distributing filters and bottled water to Flint homes and schools.

Snyder on Thursday also committed $3.5 million more for filters, free lead testing and hiring additional staff to conduct health exposure monitoring for lead in drinking water.

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http://www.wxyz.com/news/gov-snyder-says-flint-should-move-back-to-detroit-water

Gov. Snyder says Flint should move back to Detroit water

10:44 AM, Oct 8, 2015

1 hour ago

LANSING, Mich. (WXYZ) - As the water crisis in Flint continues, Michigan Gov. Rick Snyder announced on Thursday that he believes Flint should move back to the Detroit water system.

According to the governor's office, Snyder said the city should use the Great Lakes Water Authority as the source of the drinking water until the Karegnondi Water Authority Pipeline is completed. The KWA controls the water system in Flint, and the pipeline is expected to be completed next summer.

Snyder said he would ask the state legislature to provide half of the $12 million that is needed to reconnect Flint with the Great Lakes Water Authority.

On top of that, Flint city government would have to provide $2 million and the Charles Stewart Mott Foundation has committed the other $4 million needed.

“All Flint residents need clean, safe drinking water,” Snyder said in a release. “The technical experts helping the city on its water advisory all agree this move back to the Great Lakes Water Authority provides the best public health protection for children and families.

Right now, Flint is under a public health emergency because of corrosive water with lead from old pipes.

According to Flint Mayor Dayne Walling, reconnecting back to Detroit is the "fastest way to deliver clean, safe water to Flint and stabilize the infrastructure system."

Reconnecting to the GLWA will not solve all of Flint's problems, according to Snyder. It will take time for the pipes to get coated with the phosphate corrosion control. Because of that, some houses in the city could have lead in their drinking water until all pipes and plumbing are replaced.

Free water filters are available for Flint residents. For those enrolled in Michigan Department of Health and Human Services assistance programs, you can get them at the 125 E. Union St. or 4809 Clio Rd. MDHHS locations.

Anyone not enrolled in MDHHS assistance programs can get the filters t the Genesee County Community Action Resource Department offices at 2727 Lippincott and 601 N. Saginaw in Flint.

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http://www.cnn.com/2015/10/08/us/michigan-flint-water/index.html

Flint returning to Detroit water amid lead concerns

By Jason Hanna, CNN, Updated 10:39 AM ET, Thu October 8, 2015

(CNN)The Michigan city of Flint will return to Detroit's water system because of concerns over water quality -- including lead exposure -- after the city made a switch last year, Flint's mayor said Thursday.

Michigan Gov. Rick Snyder said he will ask the state legislature to provide $6 million to cover the estimated $12 million cost to reconnect Flint to Detroit's water system.

This is "the fastest way" to protect public health, Flint Mayor Dayne Walling told reporters at a news conference.

Thursday's announcement comes more than two weeks after a medical study, according to CNN affiliate WDIV, showed that the percentage of Flint children with elevated lead levels nearly doubled after Flint stopped using the Detroit water system.

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http://america.aljazeera.com/articles/2015/10/8/the-fight-for-clean-water-in-flint-michigan.html

The fight for clean water in Flint, Michigan

It isn't the government, but private citizens and researchers who have been battling to reveal dangerous lead levels

Azure Gilman, al Jazeera, October 8, 2015 8:18PM ET

Officials declared a public health emergency this month for Flint, Michigan, advising residents not to use the city's tap water without filtering after studies showed elevated lead levels in the water — and in children's blood.

But it was a handful of citizen activists and independent researchers who finally got the danger acknowledged, even as some officials denied there was a problem.

At a press conference on Thursday morning, Michigan governor Rick Snyder announced that after meeting with a technical advisory council, he was in full support of Flint returning to the Great Lakes Water Authority, from which the city previously got its water. Snyder said that the change would cost $12 million, and that he would ask the Michigan legislature to provide $6 million towards that cost. The Mott Foundation has said that they will cover $4 million, and the City of Flint will provide $2 million.

In April 2014, economically battered Flint switched its water source from Lake Huron to the less-expensive Flint River. Researchers at Virginia Tech say the new water is more corrosive and is leaching lead from pipes into the drinking water. After the switch, the number of children with elevated lead levels rose to 4 percent in 2015, from 2.1 percent in 2013, according to a study by a pediatrician at Hurley Medical Center in Flint. In some areas, that number rose as high as 6.3 percent from 2.5 percent.

One of the residents to raise an early alarm was LeeAnne Walters, after her 4-year-old son Gavin started breaking out in rashes in July 2014. He had to take Benadryl every time he took a bath, and Gavin was diagnosed with lead poisoning in April of 2015, Walters said.

The City of Flint, along with the Michigan Department of Environmental Quality (MDEQ), tested the water in Walters' home and found elevated lead levels. But Walters said that the city government denied anything was wrong with Flint's water.

“They went around and had meetings telling everyone that the problem was specific to my home due to my internal plumbing,” Walters said. "It’s infuriating. You're paying to be poisoned. And you're paying for this, and you're being called a liar and stupid by the emergency manager and the DEQ in a public meeting."

The MDEQ said Walters “had an unusually long lead service line, which appears to have contributed to her situation. However, this question is better addressed by the city.” The City of Flint had not responded to a request for comment at the time of publication.

Flint Mayor Dayne Walling drank tap water on TV in July 2015 in an attempt to ease residents’ concerns. He said that he and his family drink the city’s water every day.

The City of Flint and the MDEQ tested the water after the switch to the Flint River, and said it was fine. But there were problems with those tests, residents and researchers said.

The MDEQ lowered the number of samples required to 60 from 100, according to Marc Edwards, who lead the water testing research team at Virginia Tech, and Curt Guyette, an investigative reporter with the American Civil Liberties Union of Michigan. A spokesman for the MDEQ, Brad Wurfel, said that the sample requirements are based on population, and that the requirement was lowered because new census data showed Flint’s population had dropped below 100,000. He also cited difficulty in getting enough people to send in water sample kits for testing. “Participation has historically been a well-documented challenge in Flint,” he said.

In a report [PDF] obtained through a Freedom of Information Act request, the City of Flint said that the homes they tested had lead pipes. But when Guyette confronted officials in September 2015 about how they were able to determine that every house tested had lead service lines, which run under city streets, a utilities administrator for the City of Flint said on camera: “We’re not, really. We threw bottles out everywhere just to collect as many as we can to try to hit our number.” He was referring to bottles used to collect water samples, and the number of homes they were required to sample.

“In essence they did their testing, and they got high lead, even though they didn’t look at the homes they were supposed to,” Edwards said. “They were supposed to look at homes with lead pipes, and they just randomly sent bottles out, which would make lead look lower than it is.”

In late April of this year, LeeAnne Walters called Edwards, who said he then tested her water independently. In one sample, he said he found that she had lead levels of 13,200 parts per billion. The EPA allows a lead level of 15 parts per billion in tap water.

Along with fellow Flint resident Melissa Mays, Walters started an advocacy group called Water You Fighting For? Together with the ACLU of Michigan, Concerned Pastors for Social Action, and the Democracy Defense League, the activists helped get Edwards to come to Flint and conduct an independent analysis of the water.

Edwards said he paid for over $40,000 worth of testing out of his own pocket. He eventually got funding from the National Science Foundation to cover the cost. He said he sent water test kits to hundreds of homes, expecting to get 25 percent of the kits returned. But Water You Fighting For? and the other activist groups helped promote and organize the testing, and 90 percent came back.

"Achieving a 90 percent return rate was something I never thought possible," said Edwards.

Meanwhile, Dr. Mona Hanna-Attisha at Hurley Medical Center did her own study of blood lead levels in the children of Flint, and announced the results on Sept. 24. The study was not requested by the city or the state. Rather, Hanna-Attisha said she had heard from a friend at a dinner party that Flint had water problems. When she asked someone from Genesee County Health Department about it, she said she was told that that the department didn’t control water.

“That’s when I started my crusade,” she said.

The long-term repercussions of Flint's water problems could be devastating. The U.S. Centers for Disease Control and Prevention says that lead exposure in children is "particularly harmful to the developing brain," and is associated with decreased intelligence, among many other symptoms. Hanna-Attisha said that Flint children could have long-term problems because of early lead poisoning.

"In five years there's going to be more kids who need early intervention and special education," Hanna-Attisha said. "And in 15 to 20 years, there may be more kids that are going to be in the criminal justice system. The costs are tremendous… a whole generation of kids."

As late as Sept. 28, The Associated Press quoted MDEQ spokesman Brad Wurfel as saying, "Flint's drinking water is safe in that it's meeting state and federal standards."

In response to questions from Al Jazeera, Wurfel said that "the city, the state and the U.S. EPA are taking necessary steps to address lead concerns in Flint. Free lead filters for all Flint residents are a precautionary step to ensure public health while we look more closely at exposure concerns."

Virginia Tech water expert Edwards said he is ashamed that Flint's water situation was allowed to happen in the United States. "I shudder to think what would have happened if the residents hadn't figured this out," Edwards said. "Because the kids would still be drinking this lead water, being encouraged to drink this lead water when it was not safe."

From: Kelley, Jeff
Sent: Thursday, October 08, 2015 8:11 AM
To: Susan Hedman; Robert Kaplan (kaplan.robert@epa.gov); Hyde, Tinka
Cc: Rowan, Anne (rowan.anne@epa.gov); Cassell, Peter; Ronna Beckmann; Melissa Harrison (Harrison.Melissa@epa.gov); Abrams, Dan; Poy, Thomas
Subject: Flint clips for morning of Oct. 8

Note that Gov. Snyder is expected to make an announcement at 10 a.m. Eastern. The state will be livestreaming the announcement at http://1.usa.gov/1QapVxk

•□□□□□□□□ Gov. Snyder says he'll make announcement on Flint water Thursday (Flint Journal)

•□□□□□□□□ Governor plans 10 a.m. announcement on troubled Flint water system (Associated Press)

•□□□□□□□□ Flint Officials Are No Longer Saying the Water Is Fine (New York Times)

•□□□□□□□□ Waiting for answers, action in Flint water crisis (Detroit Free Press)

•□□□□□□□□ Flint health experts support Detroit water reconnection (Detroit News)

•□□□□□□□□ Uber, others join in efforts to pour clean water into Flint (Flint Journal)

•□□□□□□□□ Flint water crisis a bitter indictment of dysfunctional emergency manager (Michigan Chronicle)

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http://www.mlive.com/news/flint/index.ssf/2015/10/gov_snyder_says_hell_make_anno.html

Gov. Snyder says he'll make announcement on Flint water Thursday

By Ron Fonger | rfonger1@mlive.com The Flint Journal on October 07, 2015 at 9:45 PM, updated October 08, 2015 at 8:08 AM

FLINT, MI -- Gov. Rick Snyder says on Twitter that he will make an announcement about Flint water at 10 a.m. Thursday.

The planned announcement comes less than 24 hours after Flint's Technical Advisory Committee recommended the city end its use of the Flint River as its water source.

Since making the switch from using pre-treated Lake Huron water from the city of Detroit to treating river water at its own plant in April 2014, Flint officials have struggled to maintain the quality and safety of water delivered to city residents.

Snyder's Twitter message says, "Watch live tomorrow at 10 a.m. as I make an announcement regarding Flint water" at mi.gov/SnyderLive.

The state's Web site says the governor will be joined by Flint Mayor Dayne Walling, other state officials, and Ridgway White of the Charles Stewart Mott Foundation.

High levels of lead in city water and in the blood of children and infants since the city changed its water source have triggered a public health emergency here, including the mass distribution of lead-clearing faucet filters and bottled water.

Researchers from Virginia Tech university say river water has proven to be far more corrosive than water from the Detroit Water and Sewerage Department, causing lead to leach into homes that have lead service lines.

Flint City Administrator Natasha Henderson said today, Oct. 7, that she believes the position of state officials has been shifting on continued use of the Flint River, a change that was made while Flint was being run by a state-appointed emergency manager.

"We're to the point that the state believes this is a public health emergency," Henderson told the City Council. "From what I see, the state is working very well with us."

The city administrator is among officials who have advocated for a return to buying water from the DWSD since a study was released last month by Hurley Medical Center's director of pediatric residency program.

The study showed the percentage of Flint infants and children with above average lead levels has nearly doubled citywide since the switch to river water, and has nearly tripled among children in "high risk" areas of lead exposure.

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http://www.macombdaily.com/general-news/20151008/governor-plans-10-am-announcement-on-troubled-flint-water-system

Governor plans 10 a.m. announcement on troubled Flint water system

FLINT (AP) — Gov. Rick Snyder plans an announcement about the water system in Flint, which is facing a public health emergency over lead in its water.

A posting on the state's website says Snyder on Thursday morning will be joined for the announcement by officials including Flint Mayor Dayne Walling, state Department of Environmental Quality Director Dan Wyant and state Department of Health and Human Services Director Nick Lyon.

The announcement comes a day after a committee of local experts in health, water and science recommended Flint reconnect to Detroit's water system while it awaits a new pipeline to Lake Huron.

Flint has a public health emergency due to corrosive water leaching lead from old pipes. State government and nonprofit groups are distributing filters and bottled water to Flint homes and schools.

Snyder's announcement can be viewed live at 10 a.m. Thursday, Oct. 8 by visiting http://1.usa.gov/1QapVxk

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http://www.nytimes.com/2015/10/08/us/reassurances-end-in-flint-after-months-of-concern.html

Flint Officials Are No Longer Saying the Water Is Fine

By MONICA DAVEY, New York Times, OCT. 7, 2015

FLINT, Mich. — All along, through months of complaints from residents of this city about the peculiar colors and odors they said were coming from their faucets, the overriding message from the authorities here was that the water would be just fine.

Yes, there had been a boil order when fecal coliform bacteria turned up in some neighborhoods last year. And yes, the extra chlorine that was pumped in to solve that problem seemed to create another one — increased levels of a different contaminant.

Still, the guidance from Flint officials about the temporary water supply they switched to in 2014 — partly to save money — sounded assuring. In a notice sent to residents in July, city officials declared: “This is not an emergency. If a situation arises where the water is no longer safe to drink, you will be notified within 24 hours.”

The soothing talk has vanished. In recent weeks, testing has shown increased levels of lead in the blood of some Flint children — and health officials pointed to the water as a possible source.

First, the city advised residents to run their water for five minutes before using it, to use only cold water for drinking and cooking, and to install lead-removing water filters. Then county officials issued an emergency advisory recommending that people not drink Flint’s water unless it is tested for lead or filtered.

And last Friday, after corroborating that lead levels had risen in some children, state officials called for the water to be tested at all Flint public schools and for stepped-up efforts to replace lead service lines; they also promised $1 million to provide filters.

Officials met here on Wednesday afternoon, and talks were underway, officials said, for additional solutions that could come as early as Thursday. Gov. Rick Snyder said on Twitter late Wednesday that he planned to make an announcement about the situation on Thursday morning.

Private groups have raced to donate bottled water to schools, where the water fountains are now shut off, as well as filters to families who cannot afford them. Saying “we’re just in a heck of a bind,” Robert J. Pickell, the Genesee County sheriff, began serving bottled water and food that need not be cooked in water to hundreds of inmates in the county jail. Some residents have begun washing their children and pets with bottled water.

And Flint’s mayor, Dayne Walling, who had attended a 2014 event to celebrate the switch to the new water supply, called for returning to the city’s old water supply and urged state officials to provide millions of dollars to help pay for it.

The contaminated water was just the latest blow to Flint, an economically battered city that has struggled for years with factory closings, job losses and population decline.

Along Saginaw Street downtown, where at least one business had an “un-leaded” sign posted by a jug of water, residents had lingering questions: Would filters really do enough to make the water safe? What about unfiltered showers? Could they rely on the water at work and at restaurants? And why had it taken so long for leaders to figure out that there was a problem?

“I don’t think people know what’s going on at all,” said Chris Thornton, 49, who described the first blast of water from his faucets some days as looking like urine, smelling like bleach and tasting of metal. After his wife, Ronda, 50, felt sick to her stomach for months, the Thorntons began buying jugs of bottled water, though the price — on top of an already steep water bill — has been overwhelming.

“As far as my family,” Ronda Thornton said, “we’ve just given up on the city’s water.”

Flint’s water problems are tied inextricably to its fiscal woes. In 1960, nearly 200,000 people lived here. But auto plants closed, and the population has dropped by half. By 2011, Flint’s shrunken tax base and seemingly intractable budget problems prompted Mr. Snyder to appoint an emergency manager for the city. Over the next four years, the city had four managers overseeing operations. Along the way, the city switched its water supply.

For decades, the city bought water from Detroit, which treated water from Lake Huron, then piped it here, 70 miles to the northwest. But with the costs mounting, Flint’s leaders decided they could save millions by joining a new regional authority that would draw and treat its own water from Lake Huron.

There was one complication: Flint needed an alternative water supply from April 2014 until the new regional system is ready, probably next year. In the interim, Flint switched to using water from the Flint River, which state officials say had been a backup source in the past.

Ask residents about the Flint River, and many of them roll their eyes. They say it was once as a dumping ground for car parts, grocery carts and refrigerators. There have been significant improvements and intensive restoration campaigns in recent years, though a Flint River Fest set for Friday has been postponed, organizers said, given the “current drinking water crisis.”

Even now, state officials say that treated Flint River water is safe and capable of meeting state and federal standards. Officials say the problem may be that some of the aging pipes and service lines that carry water into Flint’s homes and businesses contain lead and are being corroded by water. The water Flint used to receive from Detroit was treated with chemicals intended to prevent such corrosion.

For months, questions about lead and other risks multiplied. “Everyone kept saying: ‘It’s safe! It’s safe! It’s safe!’ ” recalled Melissa Mays, a Flint resident who says she was sickened by the water and has helped organize residents over the issue.

Then in September, a researcher from Virginia Tech released findings from the water in hundreds of Flint homes showing elevated lead levels. Blood tests released by a local pediatrician — and corroborated last week by state officials analyzing their own testing — showed an increase in lead levels in children in some neighborhoods since 2014, when the city began drawing water from the river.

“We all have a concern about Flint’s drinking water in terms of what we’re seeing in terms of lead,” Mr. Snyder said last week.

Mr. Walling said that the move to river water occurred when an emergency manager controlled the city, though the City Council did vote for the city’s plans for a new, regional water system. He acknowledged supporting the move in a state of the city address, but said that he had not been given sufficient information about the safety risks.

“I had to work with what I knew at the time,” Mr. Walling, who is up for election next month, said in an interview.

But for many residents, the authorities failed the city by taking so long to react. “Anytime you have to weigh money against the health and welfare of people, it always has to be the health and welfare you go with,” said the Rev. Alfred Harris, a local pastor who has stopped conducting baptisms at his church because of concerns about the water. “We’ve been talking about this for the last 14 months, and they did not give a sincere ear to any of us. Shame on you!”

LeeAnne Walters said her son, Gavin, 4, who has immune system issues, had suffered direct consequences. After the switch to river water, which sometimes looked brown in their house, Gavin dropped to 27 pounds, far below the weight of his twin brother, she said. He sometimes seemed unable to pronounce words he knew, she said, and then test results showed an elevated lead level in his blood.

“He is going to deal with the side effects of this for the rest of his life,” Ms. Walters said. “I don’t think there’s a word angry enough to describe my anger. I trusted the city, and I helped the city poison my kid. Who thought this could happen in the United States?”

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http://www.freep.com/story/opinion/columnists/nancy-kaffer/2015/10/07/flint-water-crisis/73534078/

Waiting for answers, action in Flint water crisis

By Nancy Kaffer, Detroit Free Press Columnist 10:27 p.m. EDT October 7, 2015

They are still waiting for answers about the water in Flint.

And it's hard to say when, or if, those answers are coming.

It has been two weeks since a hospital researcher found that more Flint kids had been lead poisoned since the city switched its municipal water supply. And it has been nearly a week since the State of Michigan abruptly changed its posture, acknowledging, after months of denial and empty assurances, that Flint's water supply was compromised.

Since then, a lot of folks have worked diligently to sort out how things went so badly wrong in this small, impoverished city, and what the State of Michigan is doing to fix it.

But solutions remain elusive.

The state announced Friday that it has devoted $1 million to provide water filters for Flint residents, is expanding water testing and expediting improved water treatment. But two weeks on, Flint hasn't started adding chemicals to its water that would allow it to pass safely through the city's lead service pipes. That plan can likely be ready within a week, and can be enacted as soon as it's approved by the Michigan Department of Environmental Quality. Scientists say it would take roughly a month before those chemicals would begin to effect Flint's drinking water.

That would be the right play, unless the city opts to rejoin the Detroit Water and Sewerage Department -- as water experts have recommended -- a decision that would likely require financial assistance from the State of Michigan but could result in potable water flowing from Flint taps within two weeks. Is it likely to happen? Your guess is as good as mine.

And state officials continue to insist that the rules designed to monitor water systems, to ensure safe drinking water, worked as they're supposed to.

Kids in danger

The effects of lead on children are irreversible. Lead-poisoned kids can experience a host of behavioral and developmental problems, and in two Flint ZIP codes, the percentage of children affected by lead has doubled, reversing a long trend of improving rates.

That's because in 2014, Flint decided to pump untreated water from the Flint River, ending a decades-long relationship with the Detroit Water and Sewerage Department, while a new regional water authority it's joining is under construction. Since then, Flint's been treating its water locally, prompting a rash of problems related to coliform bacteria, a disinfectant and its byproduct, and now, elevated lead.

Both of these decisions were made while Flint was under state oversight, during the appointments of a series of emergency managers appointed by and answerable to Gov. Rick Snyder. The Michigan Department of Environmental Quality, whose director is appointed by the governor, must ensure that water systems are producing safe drinking water. Because Flint's water decisions were made under Snyder's emergency managers, the governor's decision-making authority is one step closer to Flint's water crisis.

The water Flint bought from Detroit was "finished," in other words, safe for humans to drink, but also treated to create a film inside those pipes that kept the lead out. That's called "corrosion control," and Detroit achieved this goal by adding phosphates to the water it pumps from Lake Huron.

Flint doesn't.

It took an unreasonably long time to get a solid answer to this question.

Corrosion control

Since April 2014, treatment at Flint's plant has included adding lime to the water it distributed to customers, largely to make the water less acidic, Liane Shekter Smith, chief of the MDEQ's office of drinking water and municipal assistance, said Tuesday.

"There was no corrosion control plan put forward at the time of the switch," Shekter Smith said. "There was a belief that (acidity) adjustment would provide adequate corrosion control, and that rounds of testing would confirm or refute that."

Any new water supply must be tested at six-month intervals to determine whether it meets the guidelines of the federal lead and copper rule, a standard established by the U.S. Environmental Protection Agency.

Tests of Flint's drinking water showed roughly 6 parts per billion (how the presence of lead in water is reckoned) in water sampled between June and December of 2014, said MDEQ spokesman Brad Wurfel. The U.S. Centers for Disease Control and Prevention said there is no acceptable level of lead exposure, but 6 ppb would, in some cases, fall below the EPA's actionable level of 15 ppb.

But because the community Flint serves is so large, it must meet a different threshold, 5 ppb. If a second round of testing showed that lead levels continued to exceed it, Flint would be required to improve its method of corrosion control.

Water sampled between January and June of 2015 showed an alarming increase: lead levels had risen to 11 ppb.

That kind of testing, Shekter Smith said, is the most reliable way to determine whether corrosion control is working.

"Having it in place is best way to know what is happening out in the system," she said.

Given the elevated blood-lead levels in Flint kids, the damage lead can cause, and the permanence of that damage, is that enough?

"I think that we are following the protocol," she said, "and the protocol got us to the right place, and we're making the right decisions."

“It did?" said Erik Olson, a senior strategy director for the Washington, D.C.-based Natural Resources Defense Council. "It didn’t sound like it."

Because the composition of water varies so greatly, there's no one right way to do corrosion control, Olson said. But Flint's plan to use lime only should have prompted questions before switching to Flint River water.

"They definitely should have said, 'OK, what's the basis of that decision? What's your engineering study that shows that that's optimizing your corrosion control?' " Olson said.

That Flint's river water would pass through pipes with lead components shouldn't have been surprising, Olson said -- the presence of lead in the water and sewage infrastructure is well-documented, and well-known.

So why didn't Flint's engineers account for that, when developing a treatment plan? That's just one of the questions I still can't answer.

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http://www.detroitnews.com/story/news/local/michigan/2015/10/08/flint-health-experts-support-detroit-water-reconnection/73568654/

Flint health experts support Detroit water reconnection

Detroit News Staff and wire reports 7:58 a.m. EDT October 8, 2015

Flint — A committee of local experts in health, water and science has recommended that Flint reconnect to Detroit's water system.

Flint administrator Natasha Henderson urged the committee to not think about cost and decide "what's in the best interest" for Flint, which has a water crisis due to elevated levels of lead in children.

The Technical Advisory Committee met Wednesday. It rarely meets, but state officials say it will have a role in Flint's water quality. The committee has no formal role in deciding whether Flint stops using the Flint River for water.

Flint has a public health emergency due to corrosive water leaching lead from old pipes. A Virginia Tech researcher says there would be dramatic reductions in about a month if the Detroit water system is used.

Gov. Rick Snyder's administration last week said it was considering temporarily reconnecting Flint to Detroit's water system temporarily in a bid to tackle the ongoing water quality and lead issues. The state also planned to expedite construction of a new water line to Lake Huron so a planned water authority that would service Flint could operate as soon as possible. An announcement on the Flint water plan was expected Thursday.

Sara Wurfel, a spokeswoman for Snyder, said the recommendation Wednesday "is an option we're helping thoroughly review and consider with the city, and the technical advisory committee's work is much appreciated in this matter. We're also focused on working hard in collaboration with all and implementing the key action steps outlined on Oct. 2 to help protect public health and ensure safe, accessible drinking water for Flint residents."

Since 2014, the Genesee County city has drawn its drinking water from the Flint River, which has led to major problems for residents.

Last month, the city issued an advisory about its drinking water after concerns surfaced about lead contamination.

On Tuesday, Snyder's administration made free water filters available for residents.

Meanwhile, Uber drivers began collecting donations of bottled water for Flint schools. And Mayor Dayne Walling this week said he gave to Flint Community Schools some 19 palettes Kroger grocers donated.

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http://www.mlive.com/news/flint/index.ssf/2015/10/donors_show_support_by_giving.html

Uber, others join in efforts to pour clean water into Flint

By Jiquanda Johnson | jjohns16@mlive.com The Flint Journal Follow on Twitter on October 08, 2015 at 5:00 AM, updated October 08, 2015 at 5:06 AM

FLINT, MI -- Businesses, charities and individuals have donated thousands of bottles of water to city of Flint residents and students since last year after controversy erupted over the quality of the city's water. Here is a list of some of the donors.

- □□□□□□□□ The United Way of Genesee County has actively participated in looking at ways to ease water woes in the city of Flint.

- □□□□□□□□ ZeroWater partnered with United Way and Flint Community Schools early October to bring water filters to the school district as a solution instead of having students drink bottled water.

- □□□□□□□□ Uber announced on Oct. 6 that drivers in Detroit will pick up donated bottles of water to bring to Flint throughout the week. People in Detroit just have to use their Uber link to notify drivers that water needs to be picked up. The initiative runs from 2 to 7 p.m. from Oct. 6 - 8.

- □□□□□□□□ There was another donation of more than 4,000 gallons of bottled water through the Flint Diaper Bank and United Way of Genesee County on Oct. 7.

- □□□□□□□□ Donations came in from Flint-area Home Depots and Sam's Club after Hurley Medical Center doctors revealed that lead levels in children in Flint had elevated after the city switched from Detroit's water source to the Flint River.

- □□□□□□□□ Mott Community College issued an Oct. 7 media release saying they are donating bottled water to Pierce Elementary School on the city's north side on Oct. 8.

- □□□□□□□□ Swan Valley High School in Saginaw is collecting bottled water to send to Flint Public Schools. The bottled water drive ends Oct. 9 and school officials are hoping to drop donations off to Flint Community Schools on Oct. 9.

•□□□□□□□□ Bendle High School sophomore Chase Harrison raised money to purchase bottled water for Flint Community Schools.

•□□□□□□□□ Lavish Living, a Flint-based organization, has donated at least 200 cases of water to Flint Community Schools. As of Oct. 6 the organization was still working to collect more water for students.

•□□□□□□□□ The Flint Northwestern football team delivered an estimated 40 cases of water on Oct. 5 to Flint area residents between Dupont, Clio, Carpenter and Pierson roads.

•□□□□□□□□ General Motors Foundation

•□□□□□□□□ In January, Sargent Title Co. collected about 600 cases of water to donated to Flint residents.

•□□□□□□□□ Absopure Water Corp. donated a semi-truck worth of bottled water to Flint residents in January.

•□□□□□□□□ 1st Congregational United Church of Christ in Kalamazoo donated 4,000 bottles of water in September.

•□□□□□□□□ Al Serra Auto Plaza announced Oct. 7 that they will serve as drop off location for bottled water donations. If donors give 12 or more bottles of water, the dealership is offering free tire rotation.

•□□□□□□□□ In March, members of the Michigan National Action Network provided an estimated 10,000 bottles of water to Flint residents.

•□□□□□□□□ District leaders also expect at least 1,000 cases of bottled water to arrive at the Food Bank on Wednesday, Oct. 7, from the Saginaw Chippewa Indian Tribe and Soaring Eagle Waterpark and Hotel and Soaring Eagle Casino and Resort.

The Flint Journal will do updates as more donor names are provided. If anyone has donor information make a note of it in the comments section of this post, or email The Flint Journal at flnews@mlive.com.

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http://michronicleonline.com/2015/10/07/flint-water-crisis-a-bitter-indictment-of-dysfunctional-emergency-manager/

Flint water crisis a bitter indictment of dysfunctional emergency manager

By Curt Guyette, Special to The Michigan Chronicle

Stark evidence of how terribly bad things can go when democracy is dismantled can be found in the elevated levels of lead in the children of Flint.

Because of decisions made by an appointed emergency manager, the tragically high costs of trying to balance a budget by switching to an unsafe water source will be borne by kids now forced to struggle with lower IQs, behavioral problems, learning disabilities, and a host of other ill effects.

This is what can happen when people are denied full access to representative government; they get poisoned by appointees with no connection to the community. Under Michigan's emergency manager law – PA 436 — gubernatorial appointees can leave town claiming to have successfully solved a fiscal crisis when in fact what they leave in their wake is a catastrophe of monumental proportions.

In recent days, as the lead problems in Flint have made international news, former Flint emergency manager Darnell Earley – the man in charge when the switch to the Flint River was made, and who is now overseeing the education of the children in Detroit Public Schools – has tried to deny any responsibility for the catastrophe.

According to the Detroit Free Press, Earley claimed in an e-mailed statement "that he was not involved in the decision to use river water."

The governor's office and Earley can rightfully claim that the Flint mayor and City Council initially gave their blessing to the switch made 18 months ago. But that fig leaf provides little real cover for the state officials now trying to run away from their disastrous decision.

For starters, it doesn't matter what the mayor and City Council had to say when the decision was made. The emergency manager, under the sweeping powers granted under Public Act 436, had complete authority to make the switch regardless of what Flint's elected officials wanted.

Moreover, those officials were in essence working for the emergency manager, not the people who elected them. The EM decided how much pay the mayor and council members drew, and how much power they could wield.

How do things go when appointed officials try to buck the control of an EM? As we've seen in Benton Harbor and Detroit Public Schools, the answer is that they get denuded of all power and are completely marginalized.

The message to elected officials under state control has been made perfectly clear: play ball with the EM, or else.

But there is another problem with the EM law as well, one made painfully obvious in Flint. In a normally-functioning democracy, when it came time for a city of Flint to conduct tests to show it is in compliance with federal drinking water regulations, the city would be an independent actor with the Michigan Department of Environmental Quality (MDEQ) serving as a separate check on the system, another independent actor providing oversight to make sure the job is done correctly.

Instead, with Governor Rick Snyder's man being the one in charge when the decision was made to start using river water – a decision that was almost instantly revealed to be fraught with problems – the MDEQ, instead of being a watchdog protecting the citizens of Flint, served as a collaborator, working with the city to do everything in their power to skew results so that their tests would make it appear that the water was safe when it wasn't.

How do we know it wasn't safe? Because grassroots citizen groups worked with researchers at Virginia Tech and the ACLU of Michigan to conduct an independent test of nearly 300 city homes and found that the problem was far worse than the city and state claimed.

When those results were released in mid-September, the response by the state was to try and discredit them. The same was true a week later, when a Hurley Children's Hospital study found the number of children with elevated lead levels doubled after the switch to the Flint River was made.

Those two studies, and the host of problems with the state and city's water testing, last week prompted the ACLU of Michigan, the Natural Resources Defense Council, and an array of civic groups to file a petition with the U.S. EPA, calling upon the federal government to come in and provide the oversight necessary to ensure Flint's water is clean and safe.

Finally, after the state's own data confirmed those findings, and Genesee County officials took the drastic step of declaring a public health emergency, the governor and MDEQ were forced to finally admit the truth and started taking some action.

But even if those measures are enough – and they may well not be, failing as they do to require a switch back to the much cleaner and far less corrosive Detroit system – the damage already caused by this governor and his emergency managers is irreversible for the children who will struggle for the rest of their lives because of the decisions made while Flint was under state control and democracy was suspended.

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From: Cassell, Peter
Sent: Thur 10/8/2015 8:14:25 PM
Subject: Flint clips for Afternoon of Oct. 8

•□□□□□□□□ Snyder supports switching Flint water system back to Detroit (ClickOnDetroit – Local 4)

•□□□□□□□□ Mott Foundation hoping for ‘dramatic results’ in Flint (Detroit News)

•□□□□□□□□ Snyder seeking $9.35M in state aid for Flint water crisis, and Michigan lawmakers are on board (MLive.com)

•□□□□□□□□ Switch from Flint River to Detroit water expected to take two weeks (MLive.com)

•□□□□□□□□ Flint's Lead-Contaminated Water Points To Health Effects Of Ailing Infrastructure (Forbes)

•□□□□□□□□ Flint to Revert to Detroit Water Supply After Lead Complaints (NYTimes)

•□□□□□□□□ Flint water crisis: An obscene failure of government (Detroit Free Press)

•□□□□□□□□ Snydert announces plan for Flint drinking water crisis (Local 3)

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http://www.clickondetroit.com/news/gov-snyder-to-address-flint-water-today/35718412

Snyder supports switching Flint water system back to Detroit (ClickOnDetroit – Local 4)

Author: Local 4 - ClickOnDetroit news staff, local4@clickondetroit.com

Published On: Oct 08 2015 02:02:44 AM EDT Updated 7 m

Snyder supports switching Flint water system back to Detroit

Show Transcript

FLINT, Mich. -

Flint will connect with Detroit's water system amid a public health emergency over lead in its water.

The plan was announced Thursday by Gov. Rick Snyder, Flint Mayor Dayne Walling and other state officials.

"This the fastest way to protect public health," Walling said.

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Flint advisory group supports reconnecting to Detroit water

State begins distributing water filters in Flint

Flint River Fest postponed amid drinking water problems

Snyder said he will ask state lawmakers for $6 million, half of the $12 million need to reconnect with the Great Lakes Water Authority (GLWA) through next summer. The Charles Stewart Mott Foundation will provide $4 million and the city of Flint will provide $2 million.

Then, Flint would transition next summer to the new Karegnondi Water Authority pipeline.

The announcement comes a day after a committee of local experts in health, water and science recommended Flint reconnect to Detroit's water system while it awaits the new pipeline to Lake Huron.

Flint has a public health emergency due to corrosive water leaching lead from old pipes. State government and nonprofit groups are distributing filters and bottled water to Flint homes and schools.

"The efforts to continue providing filters will continue to ensure that every home has a line of defense against the problems in the infrastructure, service lines, and older plumbing while changes continue to be made," Walling said.

Flint mayor speaks at news conference:

Read: State begins distributing water filters in Flint

Snyder said state and local authorities will continue to carry out preventative steps that include continued testing, the use of faucet filters and providing residents with accurate information about steps to eliminate lead exposure. The Michigan Departments of Environmental Quality and Health and Human Services today also committed an additional $3.5 million for water filters, free lead testing through the state laboratory for Flint water customers, and hiring additional staff to conduct health exposure monitoring for lead in drinking water.

"The Detroit Water and Sewerage Department welcomes the opportunity to work with Governor Rick Snyder and the city of Flint to provide residents with clean, safe drinking water. The Great Lakes Water Authority is committed to continue providing that service to Flint while the city implements a new drinking water system," said Sue F. McCormick, Interim CEO of the GLWA.

Snyder speaks at news conference:

School test results released; more investigation planned

The state today also released the first results from its lead screening program in schools and homes. Of 37 total samples taken at 13 buildings, four samples spread over three buildings exceeded the federal action level of 15 parts per billion.

However, this sampling provides only an initial screen, and the state is committing to further testing water and inspecting plumbing at these schools. Until testing is complete, schools are advised to continue using bottled water and filtration as a precaution to protect children.

In addition, free testing is still available for any other Flint school, including daycares and Head Starts. Free testing is also available for any Flint resident.

Additional information, including more detailed lead screening results, is available at www.michigan.gov/flintwater.

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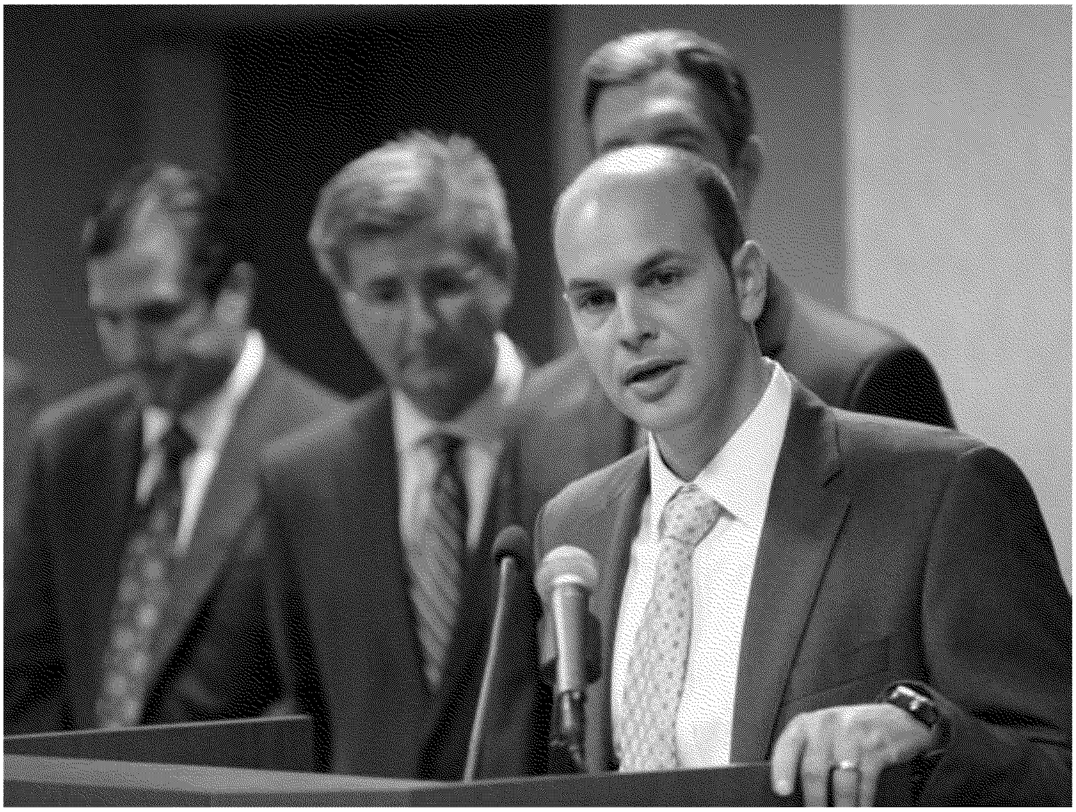
http://www.detroitnews.com/story/news/local/michigan/2015/10/08/mott-foundation-grant-flint-water/73599612/

Mott Foundation hoping for ‘dramatic results’ in Flint (Detroit News)

Jennifer Chambers, The Detroit News 3:31 p.m. EDT October 8, 2015



(Photo: Todd McInturf / The Detroit News)

There was no more watching from the sidelines, C. S. Mott Foundation president Ridgway H. White said.

Not after tests revealed that some children in Flint had elevated lead levels since the switch from Detroit’s water system in April 2014.

It was time for the Mott Foundation to step in and help in a way few organizations can: in just a matter of days, it made a $4 million grant to help defray the cost to reconnect Flint with the Detroit Water and Sewerage Department, which ultimately will cost $12 million. Gov. Rick Snyder on Thursday announced the plan, which also includes $6 million from the state and $4 million from the city of Flint..

"Flint has been dealing with water issues for the past 18 months. We've looked at it and merely monitored. It's not traditional for philanthropy to get involved in government," White said Thursday afternoon.

"But after last week when the lead levels in children study was released, we felt we couldn't sit on the sidelines and watch," he said.

So White called Snyder and Flint Mayor Dayne Walling last week to offer the assistance of the foundation, a private grant-making organization with $2.7 billion in assets that in 2014 provided 400 grants totaling more than $101 million.

"We always try to innovate as a foundation," White said. "This is moving fast ... and we hope we will see dramatic results."

Established in 1926 in Flint by its namesake automotive pioneer Charles Stewart Mott, the foundation focuses most of its time and money on civic engagement, the environment, helping low- and moderate-income children and young adults access education and the Flint community.

It is also an international foundation that makes grant to South Africa, South America, Central and Eastern Europe and Russia in its civil society and environment programs.

Much of its focus is locally. Last week the foundation awarded a $100,000 grant to the United Way of Genesee County to provide free water filters to Flint residents who are concerned about lead in their drinking water.

White said he hopes the $4 million grant will return safe, clean drinking water to Flint.

"With all the testing going on we are going to have the most tested water in the country and we hope it's the most safe water at the end of the day," he said.

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www.mlive.com/lansing-news/index.ssf/2015/10/snyder_requesting_935m_for_sta.html

Snyder seeking $9.35M in state aid for Flint water crisis, and Michigan lawmakers are on board (MLive.com)

File photo *(Jake May | MLive.com)*

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By Jonathan Oosting | joosting@mlive.com
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on October 08, 2015 at 3:25 PM, updated October 08, 2015 at 3:37 PM

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LANSING, MI — Top Michigan lawmakers appear ready and willing to send nearly $10 million to Flint in order to address a public health crisis and help the city return to Detroit water, but it's not immediately clear where the funding will come from.

"The circumstances are dire enough that we need to find the money," said Sen. Dave Robertson, R-Grand Blanc, referencing the drinking water in Flint which scientists have linked to high lead blood levels in children.

Michigan Gov. Rick Snyder on Thursday announced he will ask the Legislature to appropriate $6 million to help the city switch back to Detroit water, reversing a cost-cutting change that was made under a state-appointed emergency manager.

He'll also ask for another $3.35 million to pay for water testing at a state lab and other "agency support" services, including school inspections and follow-ups with children, according to a budget spokesman.

"All Flint residents need clean, safe drinking water," Snyder said in a statement following a morning press conference. "The technical experts helping the city on its water advisory all agree this move back to the Great Lakes Water Authority provides the best public health protection for children and families."

Harsh Flint River water has been blamed for exacerbating corrosion in aging pipes, and toxic lead levels have been detected in drinking water in three Flint schools, state officials said Thursday.

Switching back to Detroit water until the Karegnondi system comes online next summer will cost about $12 million. Snyder wants the state to pay half, the Mott Foundation has committed $4 million, leaving Flint to pay the other $2 million.

"I'm committed to taking action," House Speaker Kevin Cotter, R-Mt. Pleasant, said later Thursday. "We need to spend some more time with it to figure out exactly what that action looks like, but it's clear there's going to be a need for some money from the state, and I'm in support of that."

Senate Majority Leader Arlan Meekhof, R-West Olive said he did not know exactly where the Legislature will find the money but said "it is a public health issue, and we're going to find a way to address it.

He mentioned Healthy Michigan, the state's federally-funded expanded Medicaid program, as one potential source of financing. Cotter said lawmakers could also look to the Rainy Day Fund, but House Appropriations Chairman Al Pscholka said he did not think that would be necessary.

"This is solvable, and the state is in a good enough fiscal position to handle this," said Pscholka, R-Stevensville, indicating that he wants to act as soon as next week. "...Sometimes good government means you help people."

Senate Appropriations Chairman Dave Hildenbrand, R-Lowell, said he discussed the funding request with Snyder's budget director earlier Thursday and is open to the idea but wants "to make sure it's done right."

Senate Minority Leader Jim Ananich, D-Flint, won an amendment to a supplemental spending bill last week, inserting a placeholder that will likely serve as a vehicle for a total of $9.35 million in state aid for Flint.

Ananich, who has been calling on the state to help the city return to Detroit water, joined the governor at Thursday's press conference, saying the announcement was not "a victory" but a "fix that is unfortunately necessary."

Like the Karegnondi pipeline Flint will eventually use, Detroit water is drawn from Lake Huron, which the Snyder administration says is less prone to runoff issues that can affect shallower rivers. And the Great Lakes Water Authority has extra corrosion control protections already in place to limit lead from leaching into the water.

Still, damage was done to aging pipes in Flint, which could continue to affect drinking water. The state announced an action plan last week, with the Michigan Departments of Environmental Quality and Health and Human Services committing an initial $1 million for water filters and lead testing.

Rep. Sheldon Neely, D-Flint, said he is happy that the governor is calling for funding to help the city switch its water source, but he criticized the "anemic" response to the overall crisis.

"We have a $12 million problem, the state offered $6 million to solve it, but we already know the city of Flint and other surrounding areas are really cash strapped," he said. "At this point, no real culpability has been established for the emergency manger that made that decision."

Pscholka said he is frustrated by the situation in Flint and believes the state does bear some responsibility for the crisis, but he also noted that the Flint City Council approved early plans to move off of the Detroit water.

"Most people who are water customers don't like their water provider," Pscholka said. "They always think there's a better deal."

Asked if the state will conduct a thorough review of the water switch, Snyder said there will be continued analysis but, for the time being, he wants to "stay focused on the solutions and taking actions to solve the problems."

While lawmakers will offer various ideas on the funding source, a discussion that could go a number of ways, Robertson said he supports he governor's call for a $6 million appropriation to help the city make the switch.

"There's nothing more basic then when your tap water turns on, does water come out and is it drinkable, and does your toilet flush?" he said. "That's as basic as it gets, and I think we have an obligation to correct the situation... and then of course move as aggressively as possible to get Karegnondi done."

Jonathan Oosting is a Capitol reporter for MLive Media Group. Email him, find him on Facebook or follow him on Twitter.

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http://www.mlive.com/news/flint/index.ssf/2015/10/city_says_it_can_switch_from_f.html

Switch from Flint River to Detroit water expected to take two weeks (MLive.com)

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Flint Mayor Dayne Walling waits to speak before an announcing the city of Flint's 16 million dollar plan to switch back to Detroit water during a press conference at Mott Foundation/Commerce Center Building in Flint, Mich. on Thursday Oct. 8, 2015. (Christian Randolph/Flint Journal)

Christian Randolph | crandolp@mlive.com

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By Ron Fonger | rfonger1@mlive.com
on October 08, 2015 at 3:24 PM, updated October 08, 2015 at 3:58 PM

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FLINT, MI -- Water from Lake Huron is expected to start running through Flint's system in two weeks or less, but an expert says it will take another month for lead levels in the city to drop back to lower levels as a result.

Gov. Rick Snyder announced plans today, Oct. 8, for the state to pay most of a $12-million bill for switching the city's water source from the Flint River to Lake Huron water treated by the Detroit Water and Sewerage Department.

The Charles Stewart Mott Foundation has offered a $4-million grant toward the switch, and the city of Flint has committed $2 million more.

The switch back to the Detroit water system -- which the city abandoned in favor of treating Flint River water in April 2014 under the control of a state-appointed emergency manager -- represents a significant turnaround in the state's response to Flint's escalating water crisis.

Last week, Snyder said going back to the Detroit system was an option on the table, but was more focused on a water plan that focused on providing filters and free testing to Flint's residents.

Today's announcement followed a recommendation Wednesday by Flint's Technical Advisory Committee to change the city's drinking water source because of rising levels of lead in both water and the blood of children and infants in the city.

"We believe it will be better for the citizens of Flint ... This is the city of Flint making the decision ... We're supporting that fully," Snyder said.

Flint's move to the Detroit water system is expected to cost about $1.3 million per month until the Karegnondi Water Authority pipeline to Flint from Lake Huron is completed next summer. Flint has signed on to join the regional KWA system, and will switch to that system when it's finished.

C.S. Mott Foundation President Ridgway White said the foundation wanted to help expedite the process to bring "safe, clean water" back to Flint.

"We believe this transitional solution is the right and necessary thing to do, and we're glad we could help the state and the city make it happen," he said.

The governor plans to ask the state Legislature for a total of $10 million to address the Flint water crisis. The first $6 million is for the switch.

An additional $4 million will be requested from the state for efforts to address immediate lead issues, including further testing of children in Flint school buildings where the state this week found three buildings that tested above the federal limits for lead in the drinking water. One school tested at more than six times the limit.

Flint Mayor Dayne Walling said the city is preparing to carry out the change to lake water, and Genesee County Drain Commissioner Jeff Wright said the process must involve Detroit, Flint and the county.

"Each community has one or more valves that has to be operated," Wright said. "In Detroit's case, they have to supply the additional water, which means they have to increase water production. "In our case and Flint's, we have to flush the existing line and test for bacteria."

Detroit owns the water transmission line from its intake in Lake Huron to the area of Baxter and Potter roads in eastern Genesee County.

The county purchased a 9-mile section of pipeline from the city of Flint in June 2014 that stretches from Baxter and Potter to the area of Richfield and Genesee roads, Wright said.

From there, the city still owns a dormant section of transmission pipe that stretches through the Kearsley Creek to its treatment plant on Dort Highway.

MLive-The Flint Journal could not reach Flint Department of Public Works Director Howard Croft for comment on other preparations by the city, but Walling said work has already started to make the switch happen as soon possible.

The Rev. Alfred Harris, president of the Concerned Pastors for Social Action, said he's "happy, very happy" that the city will no longer use the Flint River as its drinking water source.

"But I wish it would have taken place months ago," Harris said.

The mayor said city officials will discuss their progress connecting to DWSD in detail Monday, Oct. 12, but said the preparation includes legal and contractual work, preparation of transmission lines for a new water source and changes in treatment at the Flint water plant.

Walling and members of Flint's Technical Advisory Committee were told Wednesday, Oct. 7, that the city's change in water source should improve lead levels after about a month.

Virginia Tech professor Marc Edwards said he expects it will take several weeks for lead levels to drop as a result of changed water.

Water test results from Flint homes show lead levels have been rising since the city began using the Flint River for water in April 2014.

The results of Flint's testing for lead since 1992, released by the state Department of Environmental Quality to The Flint Journal last month, showed 10 percent of homes sampled in the city's most recent testing contained 11 parts per billion or more of lead, with six of 69 samples exceeding the federal lead limit of 15 ppb.

Those are the highest lead levels measured in Flint by the city in more than 20 years, the state data shows.

In contrast, the city's tests of Lake Huron water from Detroit for one 10-year period -- from June 2001 until September 2011 -- resulted in just one of 155 samples registering higher than 15 ppb of lead.

Walling said he will ask the City Council and Flint's Receivership Transition Advisory Board to approve the city's $2-million contribution to switch to Detroit-supplied water.

Walling said he "could hardly sleep" once he found out the extent of the city's lead problem two weeks ago. That's when a Hurley Medical Center doctor released a study on blood lead levels in Flint's children.

The study showed the percentage of Flint infants and children with above average lead levels in their blood has nearly doubled citywide since the switch to river water, and has nearly tripled among children in "high risk" areas of lead exposure.

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http://www.forbes.com/sites/elaineschattner/2015/10/08/flints-lead-contaminated-water-points-to-health-effects-of-ailing-infrastructure/

Flint's Lead-Contaminated Water Points To Health Effects Of Ailing Infrastructure (Forbes)

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- This flare of lead toxicity reflects how a city's unchecked, decaying infrastructure can lead to serious, avoidable illness affecting children.

In Flint Michigan, there's lead in the drinking water. This is not news to residents; they've been worrying about the smell and look of tap water since the city switched water suppliers in a money-saving effort. Pediatricians in the area have been finding high levels of lead in children's blood.

This flare of lead toxicity reflects how a city's unchecked, decaying infrastructure can lead to serious, avoidable illness affecting children. Lead poisoning is nothing to snicker at. It affects adults, too. Blood specialists are familiar with lead toxicity because it commonly causes anemia. Other manifestations include neurological disease, impaired fertility, heart and kidney problems.

The Environmental Protection Agency (EPA) has an informative page on lead's toxic effects in humans. Because lead toxicity causes irreversible neurological damage, prevention is crucial, and early detection is better than late detection.

Early effects of lead poisoning can be subtle. Tiredness and impaired concentration are non-specific, but probably the most frequent symptoms of this metal-induced illness.

The Centers for Disease Control (CDC) considers a level of 5 micrograms per deciliter (5 µg/dl) of blood as acceptable in young children. This threshold – above which a pediatrician should report a lead poisoning case, and inform the parent – was lowered in 2012, for good reason.

According to the CDC's website, today: "No safe blood lead level in children has been identified. Even low levels of lead in blood have been shown to affect IQ, ability to pay attention, and academic achievement. And effects of lead exposure cannot be corrected."

The EPA suggests an "action level" for lead in water: it should be below 15 parts per billion.

I wrote about lead toxicity a few years back, after hundreds of Nigerian children died in a mining region where some people crushed lead in their homes, and metal contaminated the soil and groundwater.

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http://www.nytimes.com/2015/10/09/us/flint-michigan-detroit-water-supply-lead.html?_r=0

Flint to Revert to Detroit Water Supply After Lead Complaints (NYTimes)

By MONICA DAVEYOCT. 8, 2015

Photo

Officials in Flint, Mich., announced Friday that the city would no longer use the Flint River as its source of drinking water. Credit Laura McDermott for The New York Times

More than a year after residents of Flint, Mich., were switched onto a water supply that has since been linked to rising lead levels in the blood of some children, state and city officials abruptly reversed course, announcing on Thursday that Flint would return to its old water source.

"The realization of increased lead exposure and a rise in the number of children with elevated blood lead levels was devastating for our community," Dayne Walling, the mayor of Flint, said at a news conference where he and Gov. Rick Snyder announced plans to spend $12 million to restore the city's connection to Detroit's water system, which comes from Lake Huron. "I could hardly sleep knowing that our youngest and most vulnerable children could be at greater risk if precautionary steps were not taken," said Mr. Walling, who is seeking re-election next month.

Continue reading the main story

Residents of Flint and others lauded the decision. Some had been pressing for it for many months as complaints emerged about strange smells and colors coming from faucets, as well as unexplained rashes, ailments and worries about lead.

Photo

LeeAnne Walters, a resident who says her 4-year-old son has been found to have high lead levels in his blood, holds a water filter that shows signs of lead particles from her home in Flint. Credit Laura McDermott for The New York Times

“I’m happy that the city is finally doing what they should have done a long time ago,” said LeeAnne Walters, a resident who says her 4-year-old son was found to have high lead levels in his blood. “They should have taken it seriously back months ago when we tried to tell them, but they chose to ignore it. If they had been doing their jobs from the start, it wouldn’t have taken all this.”

Flint, an economically-troubled city 70 miles from Detroit, switched its water supply to the Flint River last year, after leaving Detroit’s costly water system. As part of efforts to cut costs that had overwhelmed the shrinking city, Flint officials planned to join a new, regional water system, which would also draw water from Lake Huron. But the new system will not be ready until mid-2016, and so the city turned in the interim to the Flint River in April 2014, leaving many residents skeptical.

In addition to the strange appearance of the water in some homes, which some residents began collecting in bottles as evidence, there were other problems. When fecal coliform bacteria turned up in the water, residents were told to boil their water. The extra chlorine that was used to solve that problem caused a new one: elevated levels of another contaminant, total trihalomethanes, which health officials say can lead to liver or kidney problems. At the time, the authorities assured residents that they were handling the issues, and that the water remained within safety guidelines.

But then came worries about lead. In early September, a researcher from Virginia Tech reported that tests of the water in nearly 300 Flint homes showed elevated lead levels in the city. A pediatrician announced that blood tests showed increased lead levels in some children since 2014, and last week state officials corroborated those findings.

In recent days, the city, county and state issued advisories — guidance to residents such as installing lead-removing filters; running water for five minutes before using it; and only using cold water for drinking, cooking and making baby formula. But by Thursday morning, there was a more significant announcement, and it was the one some residents like Ms. Walters had long sought: In about two weeks, the city will stop drawing water from the Flint River and return to Detroit's system until the new regional system is ready.

"We all care about the citizens of Flint, all the citizens in the state, in making sure we can have safe clean water for people," said Mr. Snyder, who said that he will seek $6 million from the State Legislature to help pay for Flint's temporary return to Detroit water. The city is expected to pay $2 million, and the other $4 million will come from the Charles Stewart Mott Foundation.

Health experts suspect that the water from the Flint River is particularly corrosive and may be leaching lead from some of the city's oldest pipes and service lines. They said water from Detroit's facility is treated with substances that help coat the inside of pipes, which tends to prevent such corrosion.

Yet even as officials announced their plans on Thursday, new test results were announced. Sampling of water in Flint's schools over the past week found that three schools had lead levels higher than a federal standard, state officials said. Flint schools, where water fountains have been turned off in recent days, are providing students with donated bottled water.

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http://www.freep.com/story/opinion/editorials/2015/10/08/flint-water-crisis-obscene-failure-government/73578640/

Flint water crisis: An obscene failure of government (Detroit Free Press)

By The Detroit Free Press Editorial Board 3:47 p.m. EDT October 8, 2015

Empty boxes of water filters lay in piles as Flint residents get free water filters at the Genesee County Community Action Resource Department on Lippincott in Flint on Tuesday October 6, 2015 that state of Michigan is providing to residents with partnership from the Michigan Department of Health Human Services and the Genesee County Community Action Resource Department as part of Governor Snyder's water action plan for the city since high levels of lead have been found in the drinking water that comes from the Flint River. Ryan Garza, Detroit Free Press

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(Photo: Ryan Garza, Detroit Free Press)

There's good news: The City of Flint could soon reconnect to the Detroit Water and Sewer Department, a water source that doesn't leach lead from aging pipes into the municipal water supply.

And there's bad news: Three Flint elementary schools have water with lead levels more than 15 parts per billion, in excess of U.S. Environmental Protection Agency guidelines. At one school, Freeman Elementary, water tests found lead levels of 101 ppb. Add this to months of data showing elevated lead levels in homes across Flint, and a higher percentage of children with elevated blood-lead levels.

Lead poisoning causes behavioral and developmental problems in children. It is irreversible. Pregnant women and children are most vulnerable. The U.S. Centers for Disease Control and Prevention say there is no acceptable level of lead exposure.

And in at least three Flint schools, children have been drinking lead-contaminated water for up to

16 months.

DETROIT FREE PRESS

Snyder seeks $6 million to help fix Flint water

Sixteen months, as Flint residents told the state again and again that their water wasn't right. Sixteen months, as independent researchers meticulously documented rising lead levels in water and in the blood of Flint children. Sixteen months, as the state worked to disparage and discredit the work of respected scientists, even as its own data supported those findings.

At a press conference Thursday, Gov. Rick Snyder appeared chastened.

He should.

Snyder appoints the head of the Michigan Department of Environmental Quality, the agency charged with ensuring that drinking water throughout our state is safe.

In Flint, it failed.

Flint's decisions first to join a new regional water authority, and then to pump water from the Flint River — ending a decades-long relationship with Detroit's system — were made while Flint was under state oversight, during the tenure of a Snyder-appointed emergency manager charged with balancing Flint's budget. That system is justified by the governor's constitutional responsibility to attend to the health and wellness of all Michiganders.

In Flint, he failed.

This newspaper twice endorsed Snyder for governor, albeit with grave reservations. But because of the relative weakness of his opponents, the leadership he displayed in resolving Detroit's protracted financial crisis and our hope that he would use his business acumen to ensure that government better served people, he narrowly won our endorsement.

Last year, in a detailed analysis of Snyder's record, this editorial board expressed our dissatisfaction about Snyder's first term: "The governor balanced the budget at the expense of cities and school districts. His disdain for politics is inappropriate in the state's chief politician; his deficiencies as a deal-maker have sometimes resulted in terrible consequences for Michiganders."

This, we wrote, was Snyder's most profound flaw: "He has got to see people, not sums, as the bottom line of the state balance sheet."

We wrote that he rarely exhibited strong, decisive leadership, that he must "grow into a more sure-footed, principled leader." That we were fearful of what Snyder's second term could hold.

Snyder defended the state's decisions on Thursday, saying it had followed EPA and MDEQ testing protocols. The state did the minimum required, his responses implied. Why should it have to do more?

This is what Snyder does not understand. To lead a state, accountancy is not sufficient. To lead a state, a balanced budget is not sufficient. To lead a state, doing only what is required is not sufficient.

The modern vogue for paring services and cutting budgets is an insidious misunderstanding of the foundations of government. Fiscal conservationism is correct to suggest that government should recognize the value of a dollar. But it is absolutely incorrect when it considers the value of a dollar more significant than other values. A dollar saved at the expense of public safety. A dollar saved at the expense of Flint's children. A dollar saved at the expense of the public trust. These are equations that can never balance.

At this math, Snyder has consistently failed.

DETROIT FREE PRESS

Flint water decision inexcusable

When Flint began to pump river water, it opted not to add a chemical that would have created a film inside its aging service pipes, preventing lead from entering the water. MDEQ signed off on that plan. Snyder's representatives have said both decisions were in progress before Flint's emergency managers were appointed, belying the reality of an emergency manager's broad authority in the city he or she is charged to lead.

That Flint has aging service lines with lead materials shouldn't have been a surprise. That Flint would need to treat the water it pumped to ensure it could flow safely through those lines shouldn't have been at issue.

Here is all we can surmise: Pumping Flint River water saved money. And that, as they say, was that.

Snyder says that his team will issue an "after action report," with recommendations about how things could have been done differently. This is a necessary step and should be conducted by a team with sufficient independence from Snyder's office — and the MDEQ — to reach impartial conclusions.

Snyder has asked the Michigan Legislature to contribute $6 million of the $12 million it will cost Flint to purchase its water from Detroit. The Charles Stewart Mott Foundation and the city itself will cover the remaining costs. The transition could be complete within two weeks. We applaud the Mott Foundation for its contribution and urge the Legislature to approve its portion of the funds required without delay.

Snyder and other officials have said Flint will continue to work to replace lead service lines. This is necessary work. The state has devoted $1 million to pay for water filters for Flint residents, another helpful measure.

People. Not sums.

Thus endeth the lesson. It is one our government should not forget. It is one Flint's children can't forget.

Correction: *An earlier version of this editorial incorrectly stated the number of schools that have water with high lead levels.*

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http://www.wwmt.com/news/features/state/stories/-Snyder-to-announce-plan-for-Flint-drinking-water-crisis-216188.shtml#.VhbMKCuvyHI

Snydert announces plan for Flint drinking water crisis (Local 3)

Updated: Thu, Oct 08 2015, 01:02 PM

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LANSING, Mich. (NEWSCHANNEL 3) - Tuesday morning Michigan Governor Rick Snyder called for the city of Flint to again get its water from Detroit's system.

The announcement comes as the state scrambles to address a public health emergency over lead in the Flint water supply.

The governor is asking state lawmakers for six million dollars to help the city reconnect to a safe water supply.

Right now Flint's water is leaching lead from old pipes as it flow into homes.

The water is coming from the Flint River, which is treated but still has corrosive features.

To: Fortin, Denise[Fortin.Denise@epa.gov]; Henry, Timothy[henry.timothy@epa.gov]; Davis, CatherineM[Davis.CatherineM@epa.gov]
From: Beckmann, Ronna Erin
Sent: Thur 10/8/2015 8:15:26 PM
Subject: FW: Flint clips for Afternoon of Oct. 8

Ronna Beckmann

Office of the Regional Administrator

U.S. Environmental Protection Agency, Region 5

312-886-0689

beckmann.ronna@epa.gov

From: Cassell, Peter
Sent: Thursday, October 08, 2015 3:14 PM
To: Kelley, Jeff; Hedman, Susan; Kaplan, Robert; Hyde, Tinka
Cc: Rowan, Anne; Beckmann, Ronna Erin; Harrison, Melissa; Abrams, Dan; Poy, Thomas
Subject: Flint clips for Afternoon of Oct. 8

•□□□□□□□□ Snyder supports switching Flint water system back to Detroit (ClickOnDetroit – Local 4)

•□□□□□□□□ Mott Foundation hoping for 'dramatic results' in Flint (Detroit News)

•□□□□□□□□ Snyder seeking $9.35M in state aid for Flint water crisis, and Michigan lawmakers are on board (MLive.com)

•□□□□□□□□ Switch from Flint River to Detroit water expected to take two weeks (MLive.com)

•□□□□□□□□ Flint's Lead-Contaminated Water Points To Health Effects Of Ailing Infrastructure (Forbes)

•□□□□□□□□ Flint to Revert to Detroit Water Supply After Lead Complaints (NYTimes)

•□□□□□□□□ Flint water crisis: An obscene failure of government (Detroit Free Press)

- □□□□□□□□ Snydert announces plan for Flint drinking water crisis (Local 3)

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http://www.clickondetroit.com/news/gov-snyder-to-address-flint-water-today/35718412

Snyder supports switching Flint water system back to Detroit (ClickOnDetroit – Local 4)

Author: Local 4 - ClickOnDetroit news staff, local4@clickondetroit.com

Published On: Oct 08 2015 02:02:44 AM EDT Updated 7 m

Snyder supports switching Flint water system back to Detroit

Show Transcript

FLINT, Mich. -

Flint will connect with Detroit's water system amid a public health emergency over lead in its water.

The plan was announced Thursday by Gov. Rick Snyder, Flint Mayor Dayne Walling and other state officials.

"This the fastest way to protect public health," Walling said.

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Flint advisory group supports reconnecting to Detroit water

Flint advisory group supports reconnecting to Detroit water

State begins distributing water filters in Flint

Flint River Fest postponed amid drinking water problems

Snyder said he will ask state lawmakers for $6 million, half of the $12 million need to reconnect with the Great Lakes Water Authority (GLWA) through next summer. The Charles Stewart Mott Foundation will provide $4 million and the city of Flint will provide $2 million.

Then, Flint would transition next summer to the new Karegnondi Water Authority pipeline.

The announcement comes a day after a committee of local experts in health, water and science recommended Flint reconnect to Detroit's water system while it awaits the new pipeline to Lake Huron.

Flint has a public health emergency due to corrosive water leaching lead from old pipes. State government and nonprofit groups are distributing filters and bottled water to Flint homes and schools.

"The efforts to continue providing filters will continue to ensure that every home has a line of defense against the problems in the infrastructure, service lines, and older plumbing while changes continue to be made," Walling said.

Flint mayor speaks at news conference:

Read: State begins distributing water filters in Flint

Snyder said state and local authorities will continue to carry out preventative steps that include continued testing, the use of faucet filters and providing residents with accurate information about steps to eliminate lead exposure. The Michigan Departments of Environmental Quality and Health and Human Services today also committed an additional $3.5 million for water filters, free lead testing through the state laboratory for Flint water customers, and hiring additional staff to conduct health exposure monitoring for lead in drinking water.

"The Detroit Water and Sewerage Department welcomes the opportunity to work with Governor Rick Snyder and the city of Flint to provide residents with clean, safe drinking water. The Great Lakes Water Authority is committed to continue providing that service to Flint while the city implements a new drinking water system," said Sue F. McCormick, Interim CEO of the GLWA.

Snyder speaks at news conference:

School test results released; more investigation planned

The state today also released the first results from its lead screening program in schools and homes. Of 37 total samples taken at 13 buildings, four samples spread over three buildings exceeded the federal action level of 15 parts per billion.

However, this sampling provides only an initial screen, and the state is committing to further testing water and inspecting plumbing at these schools. Until testing is complete, schools are advised to continue using bottled water and filtration as a precaution to protect children.

In addition, free testing is still available for any other Flint school, including daycares and Head Starts. Free testing is also available for any Flint resident.

Additional information, including more detailed lead screening results, is available at www.michigan.gov/flintwater.

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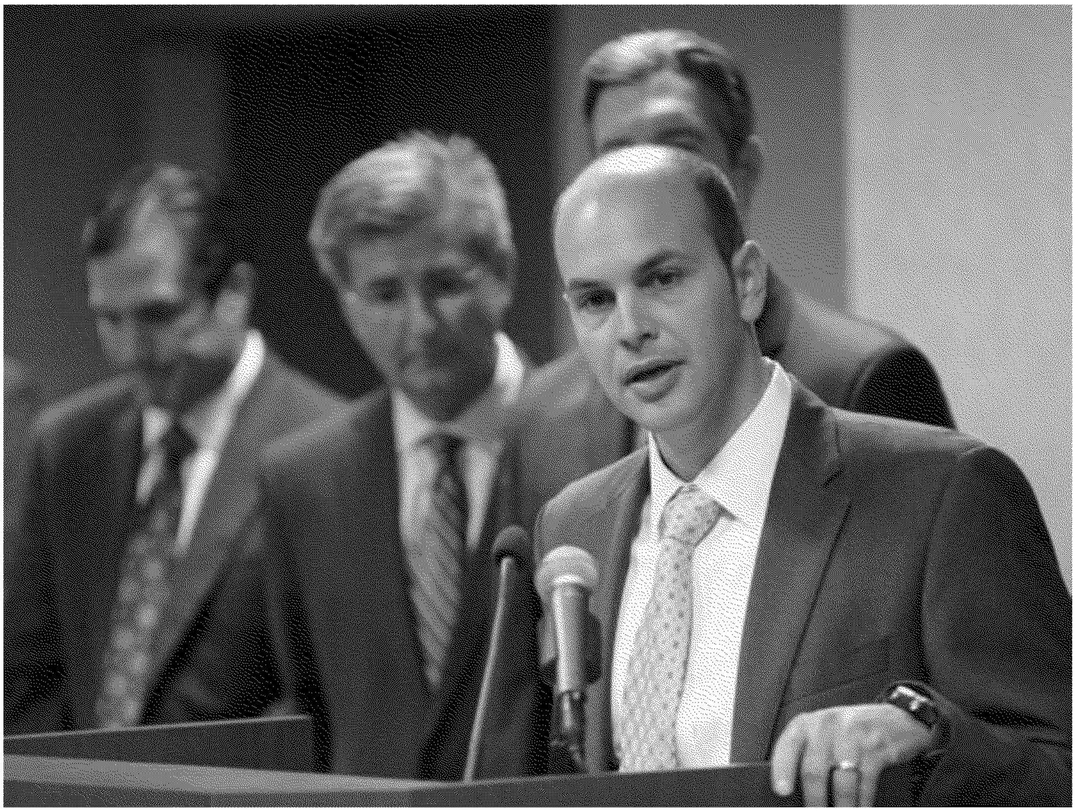
http://www.detroitnews.com/story/news/local/michigan/2015/10/08/mott-foundation-grant-flint-water/73599612/

Mott Foundation hoping for 'dramatic results' in Flint (Detroit News)

Jennifer Chambers, The Detroit News 3:31 p.m. EDT October 8, 2015



(Photo: Todd McInturf / The Detroit News)

There was no more watching from the sidelines, C. S. Mott Foundation president Ridgway H. White said.

Not after tests revealed that some children in Flint had elevated lead levels since the switch from Detroit's water system in April 2014.

It was time for the Mott Foundation to step in and help in a way few organizations can: in just a matter of days, it made a $4 million grant to help defray the cost to reconnect Flint with the Detroit Water and Sewerage Department, which ultimately will cost $12 million. Gov. Rick Snyder on Thursday announced the plan, which also includes $6 million from the state and $4 million from the city of Flint..

"Flint has been dealing with water issues for the past 18 months. We've looked at it and merely monitored. It's not traditional for philanthropy to get involved in government," White said Thursday afternoon.

"But after last week when the lead levels in children study was released, we felt we couldn't sit on the sidelines and watch," he said.

So White called Snyder and Flint Mayor Dayne Walling last week to offer the assistance of the foundation, a private grant-making organization with $2.7 billion in assets that in 2014 provided 400 grants totaling more than $101 million.

“We always try to innovate as a foundation,” White said. “This is moving fast ... and we hope we will see dramatic results.”

Established in 1926 in Flint by its namesake automotive pioneer Charles Stewart Mott, the foundation focuses most of its time and money on civic engagement, the environment, helping low- and moderate-income children and young adults access education and the Flint community.

It is also an international foundation that makes grant to South Africa, South America, Central and Eastern Europe and Russia in its civil society and environment programs.

Much of its focus is locally. Last week the foundation awarded a $100,000 grant to the United Way of Genesee County to provide free water filters to Flint residents who are concerned about lead in their drinking water.

White said he hopes the $4 million grant will return safe, clean drinking water to Flint.

“With all the testing going on we are going to have the most tested water in the country and we hope it’s the most safe water at the end of the day,” he said.

jchambers@detroitnews.com

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www.mlive.com/lansing-news/index.ssf/2015/10/snyder_requesting_935m_for_sta.html

Snyder seeking $9.35M in state aid for Flint water crisis, and Michigan lawmakers are on board (MLive.com)

File photo *(Jake May | MLive.com)*

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By Jonathan Oosting | joosting@mlive.com
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on October 08, 2015 at 3:25 PM, updated October 08, 2015 at 3:37 PM

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- Negative test for lead puts Genesee County jail back on city water
- Governor calls for $16M plan for Flint water crisis, switch to Detroit

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LANSING, MI — Top Michigan lawmakers appear ready and willing to send nearly $10 million to Flint in order to address a public health crisis and help the city return to Detroit water, but it's not immediately clear where the funding will come from.

"The circumstances are dire enough that we need to find the money," said Sen. Dave Robertson, R-Grand Blanc, referencing the drinking water in Flint which scientists have linked to high lead blood levels in children.

Michigan Gov. Rick Snyder on Thursday announced he will ask the Legislature to appropriate $6 million to help the city switch back to Detroit water, reversing a cost-cutting change that was made under a state-appointed emergency manager.

He'll also ask for another $3.35 million to pay for water testing at a state lab and other "agency support" services, including school inspections and follow-ups with children, according to a budget spokesman.

"All Flint residents need clean, safe drinking water," Snyder said in a statement following a morning press conference. "The technical experts helping the city on its water advisory all agree this move back to the Great Lakes Water Authority provides the best public health protection for children and families."

Harsh Flint River water has been blamed for exacerbating corrosion in aging pipes, and toxic lead levels have been detected in drinking water in three Flint schools, state officials said Thursday.

Switching back to Detroit water until the Karegnondi system comes online next summer will cost about $12 million. Snyder wants the state to pay half, the Mott Foundation has committed $4 million, leaving Flint to pay the other $2 million.

"I'm committed to taking action," House Speaker Kevin Cotter, R-Mt. Pleasant, said later Thursday. "We need to spend some more time with it to figure out exactly what that action looks like, but it's clear there's going to be a need for some money from the state, and I'm in support of that."

Senate Majority Leader Arlan Meekhof, R-West Olive said he did not know exactly where the Legislature will find the money but said "it is a public health issue, and we're going to find a way to address it.

He mentioned Healthy Michigan, the state's federally-funded expanded Medicaid program, as one potential source of financing. Cotter said lawmakers could also look to the Rainy Day Fund, but House Appropriations Chairman Al Pscholka said he did not think that would be necessary.

"This is solvable, and the state is in a good enough fiscal position to handle this," said Pscholka, R-Stevensville, indicating that he wants to act as soon as next week. "...Sometimes good government means you help people."

Senate Appropriations Chairman Dave Hildenbrand, R-Lowell, said he discussed the funding request with Snyder's budget director earlier Thursday and is open to the idea but wants "to make sure it's done right."

Senate Minority Leader Jim Ananich, D-Flint, won an amendment to a supplemental spending bill last week, inserting a placeholder that will likely serve as a vehicle for a total of $9.35 million in state aid for Flint.

Ananich, who has been calling on the state to help the city return to Detroit water, joined the governor at Thursday's press conference, saying the announcement was not "a victory" but a "fix that is unfortunately necessary."

Like the Karegnondi pipeline Flint will eventually use, Detroit water is drawn from Lake Huron, which the Snyder administration says is less prone to runoff issues that can affect shallower rivers. And the Great Lakes Water Authority has extra corrosion control protections already in place to limit lead from leaching into the water.

Still, damage was done to aging pipes in Flint, which could continue to affect drinking water. The state announced an action plan last week, with the Michigan Departments of Environmental Quality and Health and Human Services committing an initial $1 million for water filters and lead testing.

Rep. Sheldon Neely, D-Flint, said he is happy that the governor is calling for funding to help the city switch its water source, but he criticized the "anemic" response to the overall crisis.

"We have a $12 million problem, the state offered $6 million to solve it, but we already know the city of Flint and other surrounding areas are really cash strapped," he said. "At this point, no real culpability has been established for the emergency manger that made that decision."

Pscholka said he is frustrated by the situation in Flint and believes the state does bear some responsibility for the crisis, but he also noted that the Flint City Council approved early plans to move off of the Detroit water.

"Most people who are water customers don't like their water provider," Pscholka said. "They always think there's a better deal."

Asked if the state will conduct a thorough review of the water switch, Snyder said there will be continued analysis but, for the time being, he wants to "stay focused on the solutions and taking actions to solve the problems."

While lawmakers will offer various ideas on the funding source, a discussion that could go a number of ways, Robertson said he supports he governor's call for a $6 million appropriation to help the city make the switch.

"There's nothing more basic then when your tap water turns on, does water come out and is it drinkable, and does your toilet flush?" he said. "That's as basic as it gets, and I think we have an obligation to correct the situation... and then of course move as aggressively as possible to get Karegnondi done."

Jonathan Oosting is a Capitol reporter for MLive Media Group. Email him, find him on Facebook or follow him on Twitter.

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http://www.mlive.com/news/flint/index.ssf/2015/10/city_says_it_can_switch_from_f.html

Switch from Flint River to Detroit water expected to take two weeks (MLive.com)

1 / 73

Flint Mayor Dayne Walling waits to speak before an announcing the city of Flint's 16 million dollar plan to switch back to Detroit water during a press conference at Mott Foundation/Commerce Center Building in Flint, Mich. on Thursday Oct. 8, 2015. (Christian Randolph/Flint Journal)

Christian Randolph | crandolp@mlive.com

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By Ron Fonger | rfonger1@mlive.com
on October 08, 2015 at 3:24 PM, updated October 08, 2015 at 3:58 PM

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FLINT, MI -- Water from Lake Huron is expected to start running through Flint's system in two weeks or less, but an expert says it will take another month for lead levels in the city to drop back to lower levels as a result.

Gov. Rick Snyder announced plans today, Oct. 8, for the state to pay most of a $12-million bill for switching the city's water source from the Flint River to Lake Huron water treated by the Detroit Water and Sewerage Department.

The Charles Stewart Mott Foundation has offered a $4-million grant toward the switch, and the city of Flint has committed $2 million more.

The switch back to the Detroit water system -- which the city abandoned in favor of treating Flint River water in April 2014 under the control of a state-appointed emergency manager -- represents a significant turnaround in the state's response to Flint's escalating water crisis.

Last week, Snyder said going back to the Detroit system was an option on the table, but was more focused on a water plan that focused on providing filters and free testing to Flint's residents.

Today's announcement followed a recommendation Wednesday by Flint's Technical Advisory Committee to change the city's drinking water source because of rising levels of lead in both water and the blood of children and infants in the city.

"We believe it will be better for the citizens of Flint ... This is the city of Flint making the decision ... We're supporting that fully," Snyder said.

Flint's move to the Detroit water system is expected to cost about $1.3 million per month until the Karegnondi Water Authority pipeline to Flint from Lake Huron is completed next summer. Flint has signed on to join the regional KWA system, and will switch to that system when it's finished.

C.S. Mott Foundation President Ridgway White said the foundation wanted to help expedite the process to bring "safe, clean water" back to Flint.

"We believe this transitional solution is the right and necessary thing to do, and we're glad we could help the state and the city make it happen," he said.

The governor plans to ask the state Legislature for a total of $10 million to address the Flint water crisis. The first $6 million is for the switch.

An additional $4 million will be requested from the state for efforts to address immediate lead issues, including further testing of children in Flint school buildings where the state this week found three buildings that tested above the federal limits for lead in the drinking water. One school tested at more than six times the limit.

Flint Mayor Dayne Walling said the city is preparing to carry out the change to lake water, and Genesee County Drain Commissioner Jeff Wright said the process must involve Detroit, Flint and the county.

"Each community has one or more valves that has to be operated," Wright said. "In Detroit's case, they have to supply the additional water, which means they have to increase water production. "In our case and Flint's, we have to flush the existing line and test for bacteria."

Detroit owns the water transmission line from its intake in Lake Huron to the area of Baxter and Potter roads in eastern Genesee County.

The county purchased a 9-mile section of pipeline from the city of Flint in June 2014 that stretches from Baxter and Potter to the area of Richfield and Genesee roads, Wright said.

From there, the city still owns a dormant section of transmission pipe that stretches through the Kearsley Creek to its treatment plant on Dort Highway.

MLive-The Flint Journal could not reach Flint Department of Public Works Director Howard Croft for comment on other preparations by the city, but Walling said work has already started to make the switch happen as soon possible.

The Rev. Alfred Harris, president of the Concerned Pastors for Social Action, said he's "happy, very happy" that the city will no longer use the Flint River as its drinking water source.

"But I wish it would have taken place months ago," Harris said.

The mayor said city officials will discuss their progress connecting to DWSD in detail Monday, Oct. 12, but said the preparation includes legal and contractual work, preparation of transmission lines for a new water source and changes in treatment at the Flint water plant.

Walling and members of Flint's Technical Advisory Committee were told Wednesday, Oct. 7, that the city's change in water source should improve lead levels after about a month.

Virginia Tech professor Marc Edwards said he expects it will take several weeks for lead levels to drop as a result of changed water.

Water test results from Flint homes show lead levels have been rising since the city began using the Flint River for water in April 2014.

The results of Flint's testing for lead since 1992, released by the state Department of Environmental Quality to The Flint Journal last month, showed 10 percent of homes sampled in the city's most recent testing contained 11 parts per billion or more of lead, with six of 69 samples exceeding the federal lead limit of 15 ppb.

Those are the highest lead levels measured in Flint by the city in more than 20 years, the state data shows.

In contrast, the city's tests of Lake Huron water from Detroit for one 10-year period -- from June 2001 until September 2011 -- resulted in just one of 155 samples registering higher than 15 ppb of lead.

Walling said he will ask the City Council and Flint's Receivership Transition Advisory Board to approve the city's $2-million contribution to switch to Detroit-supplied water.

Walling said he "could hardly sleep" once he found out the extent of the city's lead problem two weeks ago. That's when a Hurley Medical Center doctor released a study on blood lead levels in Flint's children.

The study showed the percentage of Flint infants and children with above average lead levels in their blood has nearly doubled citywide since the switch to river water, and has nearly tripled among children in "high risk" areas of lead exposure.

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http://www.forbes.com/sites/elaineschattner/2015/10/08/flints-lead-contaminated-water-points-to-health-effects-of-ailing-infrastructure/

Flint's Lead-Contaminated Water Points To Health Effects Of Ailing Infrastructure (Forbes)

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- This flare of lead toxicity reflects how a city's unchecked, decaying infrastructure can lead to serious, avoidable illness affecting children.

In Flint Michigan, there's lead in the drinking water. This is not news to residents; they've been worrying about the smell and look of tap water since the city switched water suppliers in a money-saving effort. Pediatricians in the area have been finding high levels of lead in children's blood.

This flare of lead toxicity reflects how a city's unchecked, decaying infrastructure can lead to serious, avoidable illness affecting children. Lead poisoning is nothing to snicker at. It affects adults, too. Blood specialists are familiar with lead toxicity because it commonly causes anemia. Other manifestations include neurological disease, impaired fertility, heart and kidney problems.

The Environmental Protection Agency (EPA) has an informative page on lead's toxic effects in humans. Because lead toxicity causes irreversible neurological damage, prevention is crucial, and early detection is better than late detection.

Early effects of lead poisoning can be subtle. Tiredness and impaired concentration are non-specific, but probably the most frequent symptoms of this metal-induced illness.

The Centers for Disease Control (CDC) considers a level of 5 micrograms per deciliter (5 μg/dl) of blood as acceptable in young children. This threshold – above which a pediatrician should report a lead poisoning case, and inform the parent – was lowered in 2012, for good reason.

According to the CDC's website, today: "No safe blood lead level in children has been identified. Even low levels of lead in blood have been shown to affect IQ, ability to pay attention, and academic achievement. And effects of lead exposure cannot be corrected."

The EPA suggests an "action level" for lead in water: it should be below 15 parts per billion.

I wrote about lead toxicity a few years back, after hundreds of Nigerian children died in a mining region where some people crushed lead in their homes, and metal contaminated the soil and groundwater.

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http://www.nytimes.com/2015/10/09/us/flint-michigan-detroit-water-supply-lead.html?_r=0

Flint to Revert to Detroit Water Supply After Lead Complaints (NYTimes)

By MONICA DAVEYOCT. 8, 2015

Photo

Officials in Flint, Mich., announced Friday that the city would no longer use the Flint River as its source of drinking water. Credit Laura McDermott for The New York Times

More than a year after residents of Flint, Mich., were switched onto a water supply that has since been linked to rising lead levels in the blood of some children, state and city officials abruptly reversed course, announcing on Thursday that Flint would return to its old water source.

"The realization of increased lead exposure and a rise in the number of children with elevated blood lead levels was devastating for our community," Dayne Walling, the mayor of Flint, said at a news conference where he and Gov. Rick Snyder announced plans to spend $12 million to restore the city's connection to Detroit's water system, which comes from Lake Huron. "I could hardly sleep knowing that our youngest and most vulnerable children could be at greater risk if precautionary steps were not taken," said Mr. Walling, who is seeking re-election next month.

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Residents of Flint and others lauded the decision. Some had been pressing for it for many months as complaints emerged about strange smells and colors coming from faucets, as well as unexplained rashes, ailments and worries about lead.

Photo

LeeAnne Walters, a resident who says her 4-year-old son has been found to have high lead levels in his blood, holds a water filter that shows signs of lead particles from her home in Flint. Credit Laura McDermott for The New York Times

“I’m happy that the city is finally doing what they should have done a long time ago,” said LeeAnne Walters, a resident who says her 4-year-old son was found to have high lead levels in his blood. “They should have taken it seriously back months ago when we tried to tell them, but they chose to ignore it. If they had been doing their jobs from the start, it wouldn’t have taken all this.”

Flint, an economically-troubled city 70 miles from Detroit, switched its water supply to the Flint River last year, after leaving Detroit’s costly water system. As part of efforts to cut costs that had overwhelmed the shrinking city, Flint officials planned to join a new, regional water system, which would also draw water from Lake Huron. But the new system will not be ready until mid-2016, and so the city turned in the interim to the Flint River in April 2014, leaving many residents skeptical.

In addition to the strange appearance of the water in some homes, which some residents began collecting in bottles as evidence, there were other problems. When fecal coliform bacteria turned up in the water, residents were told to boil their water. The extra chlorine that was used to solve that problem caused a new one: elevated levels of another contaminant, total trihalomethanes, which health officials say can lead to liver or kidney problems. At the time, the authorities assured residents that they were handling the issues, and that the water remained within safety guidelines.

But then came worries about lead. In early September, a researcher from Virginia Tech reported that tests of the water in nearly 300 Flint homes showed elevated lead levels in the city. A pediatrician announced that blood tests showed increased lead levels in some children since 2014, and last week state officials corroborated those findings.

In recent days, the city, county and state issued advisories — guidance to residents such as installing lead-removing filters; running water for five minutes before using it; and only using cold water for drinking, cooking and making baby formula. But by Thursday morning, there was a more significant announcement, and it was the one some residents like Ms. Walters had long sought: In about two weeks, the city will stop drawing water from the Flint River and return to Detroit's system until the new regional system is ready.

"We all care about the citizens of Flint, all the citizens in the state, in making sure we can have safe clean water for people," said Mr. Snyder, who said that he will seek $6 million from the State Legislature to help pay for Flint's temporary return to Detroit water. The city is expected to pay $2 million, and the other $4 million will come from the Charles Stewart Mott Foundation.

Health experts suspect that the water from the Flint River is particularly corrosive and may be leaching lead from some of the city's oldest pipes and service lines. They said water from Detroit's facility is treated with substances that help coat the inside of pipes, which tends to prevent such corrosion.

Yet even as officials announced their plans on Thursday, new test results were announced. Sampling of water in Flint's schools over the past week found that three schools had lead levels higher than a federal standard, state officials said. Flint schools, where water fountains have been turned off in recent days, are providing students with donated bottled water.

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http://www.freep.com/story/opinion/editorials/2015/10/08/flint-water-crisis-obscene-failure-government/73578640/

Flint water crisis: An obscene failure of government (Detroit Free Press)

By The Detroit Free Press Editorial Board 3:47 p.m. EDT October 8, 2015

Empty boxes of water filters lay in piles as Flint residents get free water filters at the Genesee County Community Action Resource Department on Lippincott in Flint on Tuesday October 6, 2015 that state of Michigan is providing to residents with partnership from the Michigan Department of Health Human Services and the Genesee County Community Action Resource Department as part of Governor Snyder's water action plan for the city since high levels of lead have been found in the drinking water that comes from the Flint River. Ryan Garza, Detroit Free Press

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(Photo: Ryan Garza, Detroit Free Press)

There's good news: The City of Flint could soon reconnect to the Detroit Water and Sewer Department, a water source that doesn't leach lead from aging pipes into the municipal water supply.

And there's bad news: Three Flint elementary schools have water with lead levels more than 15 parts per billion, in excess of U.S. Environmental Protection Agency guidelines. At one school, Freeman Elementary, water tests found lead levels of 101 ppb. Add this to months of data showing elevated lead levels in homes across Flint, and a higher percentage of children with elevated blood-lead levels.

Lead poisoning causes behavioral and developmental problems in children. It is irreversible. Pregnant women and children are most vulnerable. The U.S. Centers for Disease Control and Prevention say there is no acceptable level of lead exposure.

And in at least three Flint schools, children have been drinking lead-contaminated water for up to

16 months.

DETROIT FREE PRESS

Snyder seeks $6 million to help fix Flint water

Sixteen months, as Flint residents told the state again and again that their water wasn't right. Sixteen months, as independent researchers meticulously documented rising lead levels in water and in the blood of Flint children. Sixteen months, as the state worked to disparage and discredit the work of respected scientists, even as its own data supported those findings.

At a press conference Thursday, Gov. Rick Snyder appeared chastened.

He should.

Snyder appoints the head of the Michigan Department of Environmental Quality, the agency charged with ensuring that drinking water throughout our state is safe.

In Flint, it failed.

Flint's decisions first to join a new regional water authority, and then to pump water from the Flint River — ending a decades-long relationship with Detroit's system — were made while Flint was under state oversight, during the tenure of a Snyder-appointed emergency manager charged with balancing Flint's budget. That system is justified by the governor's constitutional responsibility to attend to the health and wellness of all Michiganders.

In Flint, he failed.

This newspaper twice endorsed Snyder for governor, albeit with grave reservations. But because of the relative weakness of his opponents, the leadership he displayed in resolving Detroit's protracted financial crisis and our hope that he would use his business acumen to ensure that government better served people, he narrowly won our endorsement.

Last year, in a detailed analysis of Snyder's record, this editorial board expressed our dissatisfaction about Snyder's first term: "The governor balanced the budget at the expense of cities and school districts. His disdain for politics is inappropriate in the state's chief politician; his deficiencies as a deal-maker have sometimes resulted in terrible consequences for Michiganders."

This, we wrote, was Snyder's most profound flaw: "He has got to see people, not sums, as the bottom line of the state balance sheet."

We wrote that he rarely exhibited strong, decisive leadership, that he must "grow into a more sure-footed, principled leader." That we were fearful of what Snyder's second term could hold.

Snyder defended the state's decisions on Thursday, saying it had followed EPA and MDEQ testing protocols. The state did the minimum required, his responses implied. Why should it have to do more?

This is what Snyder does not understand. To lead a state, accountancy is not sufficient. To lead a state, a balanced budget is not sufficient. To lead a state, doing only what is required is not sufficient.

The modern vogue for paring services and cutting budgets is an insidious misunderstanding of the foundations of government. Fiscal conservationism is correct to suggest that government should recognize the value of a dollar. But it is absolutely incorrect when it considers the value of a dollar more significant than other values. A dollar saved at the expense of public safety. A dollar saved at the expense of Flint's children. A dollar saved at the expense of the public trust. These are equations that can never balance.

At this math, Snyder has consistently failed.

DETROIT FREE PRESS

Flint water decision inexcusable

When Flint began to pump river water, it opted not to add a chemical that would have created a film inside its aging service pipes, preventing lead from entering the water. MDEQ signed off on that plan. Snyder's representatives have said both decisions were in progress before Flint's emergency managers were appointed, belying the reality of an emergency manager's broad authority in the city he or she is charged to lead.

That Flint has aging service lines with lead materials shouldn't have been a surprise. That Flint would need to treat the water it pumped to ensure it could flow safely through those lines shouldn't have been at issue.

Here is all we can surmise: Pumping Flint River water saved money. And that, as they say, was that.

Snyder says that his team will issue an "after action report," with recommendations about how things could have been done differently. This is a necessary step and should be conducted by a team with sufficient independence from Snyder's office — and the MDEQ — to reach impartial conclusions.

Snyder has asked the Michigan Legislature to contribute $6 million of the $12 million it will cost Flint to purchase its water from Detroit. The Charles Stewart Mott Foundation and the city itself will cover the remaining costs. The transition could be complete within two weeks. We applaud the Mott Foundation for its contribution and urge the Legislature to approve its portion of the funds required without delay.

Snyder and other officials have said Flint will continue to work to replace lead service lines. This is necessary work. The state has devoted $1 million to pay for water filters for Flint residents, another helpful measure.

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Thus endeth the lesson. It is one our government should not forget. It is one Flint's children can't forget.

***Correction**: An earlier version of this editorial incorrectly stated the number of schools that have water with high lead levels.*

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http://www.wwmt.com/news/features/state/stories/-Snyder-to-announce-plan-for-Flint-drinking-water-crisis-216188.shtml#.VhbMKCuvyHI

Snydert announces plan for Flint drinking water crisis (Local 3)

Updated: Thu, Oct 08 2015, 01:02 PM

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LANSING, Mich. (NEWSCHANNEL 3) - Tuesday morning Michigan Governor Rick Snyder called for the city of Flint to again get its water from Detroit's system.

The announcement comes as the state scrambles to address a public health emergency over lead in the Flint water supply.

The governor is asking state lawmakers for six million dollars to help the city reconnect to a safe water supply.

Right now Flint's water is leaching lead from old pipes as it flow into homes.

The water is coming from the Flint River, which is treated but still has corrosive features.

To: Meiburg, Stan[Meiburg.Stan@epa.gov]; Fritz, Matthew[Fritz.Matthew@epa.gov]; Burke, Thomas[Burke.Thomas@epa.gov]; Grevatt, Peter[Grevatt.Peter@epa.gov]; Vaught, Laura[Vaught.Laura@epa.gov]; Purchia, Liz[Purchia.Liz@epa.gov]; Harrison, Melissa[Harrison.Melissa@epa.gov]; Rupp, Mark[Rupp.Mark@epa.gov]
From: Hedman, Susan
Sent: Thur 10/8/2015 8:27:43 PM
Subject: Flint afternoon clips -- new FREEP editorial is first

Flint water crisis: An obscene failure of government (Detroit Free Press)

By The Detroit Free Press Editorial Board 3:47 p.m. EDT October 8, 2015

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Sent from my iPhone

Begin forwarded message:

From: "Cassell, Peter" <cassell.peter@epa.gov>
Date: October 8, 2015 at 3:14:25 PM CDT
To: "Kelley, Jeff" <kelley.jeff@epa.gov>, "Hedman, Susan" <hedman.susan@epa.gov>, "Kaplan, Robert" <kaplan.robert@epa.gov>, "Hyde, Tinka" <hyde.tinka@epa.gov>
Cc: "Rowan, Anne" <rowan.anne@epa.gov>, "Beckmann, Ronna Erin" <beckmann.ronna@epa.gov>, "Harrison, Melissa" <Harrison.Melissa@epa.gov>, "Abrams, Dan" <Abrams.Dan@epa.gov>, "Poy, Thomas" <poy.thomas@epa.gov>
Subject: Flint clips for Afternoon of Oct. 8

- □□□□□□□□ Snyder supports switching Flint water system back to Detroit (ClickOnDetroit – Local 4)
- □□□□□□□□ Mott Foundation hoping for 'dramatic results' in Flint (Detroit News)
- □□□□□□□□ Snyder seeking $9.35M in state aid for Flint water crisis, and Michigan lawmakers are on board (MLive.com)
- □□□□□□□□ Switch from Flint River to Detroit water expected to take two weeks (MLive.com)
- □□□□□□□□ Flint's Lead-Contaminated Water Points To Health Effects Of Ailing Infrastructure (Forbes)
- □□□□□□□□ Flint to Revert to Detroit Water Supply After Lead Complaints (NYTimes)
- □□□□□□□□ Flint water crisis: An obscene failure of government (Detroit Free Press)
- □□□□□□□□ Snydert announces plan for Flint drinking water crisis (Local 3)

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http://www.clickondetroit.com/news/gov-snyder-to-address-flint-water-today/35718412

Snyder supports switching Flint water system back to Detroit (ClickOnDetroit – Local 4)

Author: Local 4 - ClickOnDetroit news staff, local4@clickondetroit.com

Published On: Oct 08 2015 02:02:44 AM EDT Updated 7 m

Snyder supports switching Flint water system back to Detroit

Show Transcript

FLINT, Mich. -

Flint will connect with Detroit's water system amid a public health emergency over lead in its water.

The plan was announced Thursday by Gov. Rick Snyder, Flint Mayor Dayne Walling and other state officials.

"This the fastest way to protect public health," Walling said.

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Flint advisory group supports reconnecting to Detroit water

Flint advisory group supports reconnecting to Detroit water

State begins distributing water filters in Flint

Flint River Fest postponed amid drinking water problems

Snyder said he will ask state lawmakers for $6 million, half of the $12 million need to reconnect with the Great Lakes Water Authority (GLWA) through next summer. The Charles Stewart Mott Foundation will provide $4 million and the city of Flint will provide $2 million.

Then, Flint would transition next summer to the new Karegnondi Water Authority pipeline.

The announcement comes a day after a committee of local experts in health, water and science recommended Flint reconnect to Detroit's water system while it awaits the new pipeline to Lake Huron.

Flint has a public health emergency due to corrosive water leaching lead from old pipes. State government and nonprofit groups are distributing filters and bottled water to Flint homes and schools.

"The efforts to continue providing filters will continue to ensure that every home has a line of defense against the problems in the infrastructure, service lines, and older plumbing while changes continue to be made," Walling said.

Flint mayor speaks at news conference:

Read: State begins distributing water filters in Flint

Snyder said state and local authorities will continue to carry out preventative steps that include continued testing, the use of faucet filters and providing residents with accurate information about steps to eliminate lead exposure. The Michigan Departments of Environmental Quality and Health and Human Services today also committed an additional $3.5 million for water filters, free lead testing through the state laboratory for Flint water customers, and hiring additional staff to conduct health exposure monitoring for lead in drinking water.

"The Detroit Water and Sewerage Department welcomes the opportunity to work with Governor Rick Snyder and the city of Flint to provide residents with clean, safe drinking water. The Great Lakes Water Authority is committed to continue providing that service to Flint while the city implements a new drinking water system," said Sue F. McCormick, Interim CEO of the GLWA.

Snyder speaks at news conference:

School test results released; more investigation planned

The state today also released the first results from its lead screening program in schools and homes. Of 37 total samples taken at 13 buildings, four samples spread over three buildings exceeded the federal action level of 15 parts per billion.

However, this sampling provides only an initial screen, and the state is committing to further testing water and inspecting plumbing at these schools. Until testing is complete, schools are advised to continue using bottled water and filtration as a precaution to protect children.

In addition, free testing is still available for any other Flint school, including daycares and Head Starts. Free testing is also available for any Flint resident.

Additional information, including more detailed lead screening results, is available at www.michigan.gov/flintwater.

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http://www.detroitnews.com/story/news/local/michigan/2015/10/08/mott-foundation-grant-flint-water/73599612/

Mott Foundation hoping for ‘dramatic results’ in Flint (Detroit News)

Jennifer Chambers, The Detroit News 3:31 p.m. EDT October 8, 2015

<image001.jpg>

(Photo: Todd McInturf / The Detroit News)

There was no more watching from the sidelines, C. S. Mott Foundation president Ridgway H. White said.

Not after tests revealed that some children in Flint had elevated lead levels since the switch from Detroit’s water system in April 2014.

It was time for the Mott Foundation to step in and help in a way few organizations can: in just a matter of days, it made a $4 million grant to help defray the cost to reconnect Flint with the Detroit Water and Sewerage Department, which ultimately will cost $12 million. Gov. Rick Snyder on Thursday announced the plan, which also includes $6 million from the state and $4 million from the city of Flint..

“Flint has been dealing with water issues for the past 18 months. We’ve looked at it and merely monitored. It’s not traditional for philanthropy to get involved in government,” White said Thursday afternoon.

“But after last week when the lead levels in children study was released, we felt we couldn’t sit on the sidelines and watch,” he said.

So White called Snyder and Flint Mayor Dayne Walling last week to offer the assistance of the foundation, a private grant-making organization with $2.7 billion in assets that in 2014 provided 400 grants totaling more than $101 million.

“We always try to innovate as a foundation,” White said. “This is moving fast ... and we hope we will see dramatic results.”

Established in 1926 in Flint by its namesake automotive pioneer Charles Stewart Mott, the foundation focuses most of its time and money on civic engagement, the environment, helping low- and moderate-income children and young adults access education and the Flint community.

It is also an international foundation that makes grant to South Africa, South America, Central and Eastern Europe and Russia in its civil society and environment programs.

Much of its focus is locally. Last week the foundation awarded a $100,000 grant to the United Way of Genesee County to provide free water filters to Flint residents who are concerned about lead in their drinking water.

White said he hopes the $4 million grant will return safe, clean drinking water to Flint.

“With all the testing going on we are going to have the most tested water in the country and we hope it’s the most safe water at the end of the day,” he said.

jchambers@detroitnews.com

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www.mlive.com/lansing-news/index.ssf/2015/10/snyder_requesting_935m_for_sta.html

Snyder seeking $9.35M in state aid for Flint water crisis, and Michigan lawmakers are on board (MLive.com)

<image002.jpg>

File photo *(Jake May | MLive.com)*

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<image003.png>By Jonathan Oosting | joosting@mlive.com
Follow on Twitter
on October 08, 2015 at 3:25 PM, updated October 08, 2015 at 3:37 PM

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flint water

- State should pay for its own mistakes in Flint water crisis
- Snyder seeking $9.35M in state aid for Flint water crisis, and Michigan lawmakers are on board
- Switch from Flint River to Detroit water expected to take two weeks
- Negative test for lead puts Genesee County jail back on city water
- Governor calls for $16M plan for Flint water crisis, switch to Detroit

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LANSING, MI — Top Michigan lawmakers appear ready and willing to send nearly $10 million to Flint in order to address a public health crisis and help the city return to Detroit water, but it's not immediately clear where the funding will come from.

"The circumstances are dire enough that we need to find the money," said Sen. Dave Robertson, R-Grand Blanc, referencing the drinking water in Flint which scientists have linked to high lead blood levels in children.

Michigan Gov. Rick Snyder on Thursday announced he will ask the Legislature to appropriate $6 million to help the city switch back to Detroit water, reversing a cost-cutting change that was made under a state-appointed emergency manager.

He'll also ask for another $3.35 million to pay for water testing at a state lab and other "agency support" services, including school inspections and follow-ups with children, according to a budget spokesman.

"All Flint residents need clean, safe drinking water," Snyder said in a statement following a morning press conference. "The technical experts helping the city on its water advisory all agree this move back to the Great Lakes Water Authority provides the best public health protection for children and families."

Harsh Flint River water has been blamed for exacerbating corrosion in aging pipes, and toxic lead levels have been detected in drinking water in three Flint schools, state officials said Thursday.

Switching back to Detroit water until the Karegnondi system comes online next summer will cost about $12 million. Snyder wants the state to pay half, the Mott Foundation has committed $4 million, leaving Flint to pay the other $2 million.

"I'm committed to taking action," House Speaker Kevin Cotter, R-Mt. Pleasant, said later Thursday. "We need to spend some more time with it to figure out exactly what that action looks like, but it's clear there's going to be a need for some money from the state, and I'm in support of that."

Senate Majority Leader Arlan Meekhof, R-West Olive said he did not know exactly where the Legislature will find the money but said "it is a public health issue, and we're going to find a way to address it.

He mentioned Healthy Michigan, the state's federally-funded expanded Medicaid program, as one potential source of financing. Cotter said lawmakers could also look to the Rainy Day Fund, but House Appropriations Chairman Al Pscholka said he did not think that would be necessary.

"This is solvable, and the state is in a good enough fiscal position to handle this," said Pscholka, R-Stevensville, indicating that he wants to act as soon as next week. "...Sometimes good government means you help people."

Senate Appropriations Chairman Dave Hildenbrand, R-Lowell, said he discussed the funding request with Snyder's budget director earlier Thursday and is open to the idea but wants "to make sure it's done right."

Senate Minority Leader Jim Ananich, D-Flint, won an amendment to a supplemental spending bill last week, inserting a placeholder that will likely serve as a vehicle for a total of $9.35 million in state aid for Flint.

Ananich, who has been calling on the state to help the city return to Detroit water, joined the governor at Thursday's press conference, saying the announcement was not "a victory" but a "fix that is unfortunately necessary."

Like the Karegnondi pipeline Flint will eventually use, Detroit water is drawn from Lake Huron, which the Snyder administration says is less prone to runoff issues that can affect shallower rivers. And the Great Lakes Water Authority has extra corrosion control protections already in place to limit lead from leaching into the water.

Still, damage was done to aging pipes in Flint, which could continue to affect drinking water. The state announced an action plan last week, with the Michigan Departments of Environmental Quality and Health and Human Services committing an initial $1 million for water filters and lead testing.

Rep. Sheldon Neely, D-Flint, said he is happy that the governor is calling for funding to help the city switch its water source, but he criticized the "anemic" response to the overall crisis.

"We have a $12 million problem, the state offered $6 million to solve it, but we already know the city of Flint and other surrounding areas are really cash strapped," he said. "At this point, no real culpability has been established for the emergency manger that made that decision."

Pscholka said he is frustrated by the situation in Flint and believes the state does bear some responsibility for the crisis, but he also noted that the Flint City Council approved early plans to move off of the Detroit water.

"Most people who are water customers don't like their water provider," Pscholka said. "They always think there's a better deal."

Asked if the state will conduct a thorough review of the water switch, Snyder said there will be continued analysis but, for the time being, he wants to "stay focused on the solutions and taking actions to solve the problems."

While lawmakers will offer various ideas on the funding source, a discussion that could go a number of ways, Robertson said he supports he governor's call for a $6 million appropriation to help the city make the switch.

"There's nothing more basic then when your tap water turns on, does water come out and is it drinkable, and does your toilet flush?" he said. "That's as basic as it gets, and I think we have an obligation to correct the situation... and then of course move as aggressively as possible to get Karegnondi done."

Jonathan Oosting is a Capitol reporter for MLive Media Group. Email him, find him on Facebook or follow him on Twitter.

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http://www.mlive.com/news/flint/index.ssf/2015/10/city_says_it_can_switch_from_f.html

Switch from Flint River to Detroit water expected to take two weeks (MLive.com)

1 / 73

Flint Mayor Dayne Walling waits to speak before an announcing the city of Flint's 16 million dollar plan to switch back to Detroit water during a press conference at Mott Foundation/Commerce Center Building in Flint, Mich. on Thursday Oct. 8, 2015. (Christian Randolph/Flint Journal)

Christian Randolph | crandolp@mlive.com

Print Email

<image004.png>By Ron Fonger | rfonger1@mlive.com
on October 08, 2015 at 3:24 PM, updated October 08, 2015 at 3:58 PM

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flint water

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All Stories

FLINT, MI -- Water from Lake Huron is expected to start running through Flint's system in two weeks or less, but an expert says it will take another month for lead levels in the city to drop back to lower levels as a result.

Gov. Rick Snyder announced plans today, Oct. 8, for the state to pay most of a $12-million bill for switching the city's water source from the Flint River to Lake Huron water treated by the Detroit Water and Sewerage Department.

The Charles Stewart Mott Foundation has offered a $4-million grant toward the switch, and the city of Flint has committed $2 million more.

The switch back to the Detroit water system -- which the city abandoned in favor of treating Flint River water in April 2014 under the control of a state-appointed emergency manager -- represents a significant turnaround in the state's response to Flint's escalating water crisis.

Last week, Snyder said going back to the Detroit system was an option on the table, but was more focused on a water plan that focused on providing filters and free testing to Flint's residents.

Today's announcement followed a recommendation Wednesday by Flint's Technical Advisory Committee to change the city's drinking water source because of rising levels of lead in both water and the blood of children and infants in the city.

"We believe it will be better for the citizens of Flint ... This is the city of Flint making the decision ... We're supporting that fully," Snyder said.

Flint's move to the Detroit water system is expected to cost about $1.3 million per month until the Karegnondi Water Authority pipeline to Flint from Lake Huron is completed next summer. Flint has signed on to join the regional KWA system, and will switch to that system when it's finished.

C.S. Mott Foundation President Ridgway White said the foundation wanted to help expedite the process to bring "safe, clean water" back to Flint.

"We believe this transitional solution is the right and necessary thing to do, and we're glad we could help the state and the city make it happen," he said.

The governor plans to ask the state Legislature for a total of $10 million to address the Flint water crisis. The first $6 million is for the switch.

An additional $4 million will be requested from the state for efforts to address immediate lead issues, including further testing of children in Flint school buildings where the state this week found three buildings that tested above the federal limits for lead in the drinking water. One school tested at more than six times the limit.

Flint Mayor Dayne Walling said the city is preparing to carry out the change to lake water, and Genesee County Drain Commissioner Jeff Wright said the process must involve Detroit, Flint and the county.

"Each community has one or more valves that has to be operated," Wright said. "In Detroit's case, they have to supply the additional water, which means they have to increase water production. "In our case and Flint's, we have to flush the existing line and test for bacteria."

Detroit owns the water transmission line from its intake in Lake Huron to the area of Baxter and Potter roads in eastern Genesee County.

The county purchased a 9-mile section of pipeline from the city of Flint in June 2014 that stretches from Baxter and Potter to the area of Richfield and Genesee roads, Wright said.

From there, the city still owns a dormant section of transmission pipe that stretches through the Kearsley Creek to its treatment plant on Dort Highway.

MLive-The Flint Journal could not reach Flint Department of Public Works Director Howard Croft for comment on other preparations by the city, but Walling said work has already started to make the switch happen as soon possible.

The Rev. Alfred Harris, president of the Concerned Pastors for Social Action, said he's "happy, very happy" that the city will no longer use the Flint River as its drinking water source.

"But I wish it would have taken place months ago," Harris said.

The mayor said city officials will discuss their progress connecting to DWSD in detail Monday, Oct. 12, but said the preparation includes legal and contractual work, preparation of transmission lines for a new water source and changes in treatment at the Flint water plant.

Walling and members of Flint's Technical Advisory Committee were told Wednesday, Oct. 7, that the city's change in water source should improve lead levels after about a month.

Virginia Tech professor Marc Edwards said he expects it will take several weeks for lead levels to drop as a result of changed water.

Water test results from Flint homes show lead levels have been rising since the city began using the Flint River for water in April 2014.

The results of Flint's testing for lead since 1992, released by the state Department of Environmental Quality to The Flint Journal last month, showed 10 percent of homes sampled in the city's most recent testing contained 11 parts per billion or more of lead, with six of 69 samples exceeding the federal lead limit of 15 ppb.

Those are the highest lead levels measured in Flint by the city in more than 20 years, the state data shows.

In contrast, the city's tests of Lake Huron water from Detroit for one 10-year period -- from June 2001 until September 2011 -- resulted in just one of 155 samples registering higher than 15 ppb of lead.

Walling said he will ask the City Council and Flint's Receivership Transition Advisory Board to approve the city's $2-million contribution to switch to Detroit-supplied water.

Walling said he "could hardly sleep" once he found out the extent of the city's lead problem two weeks ago. That's when a Hurley Medical Center doctor released a study on blood lead levels in Flint's children.

The study showed the percentage of Flint infants and children with above average lead levels in their blood has nearly doubled citywide since the switch to river water, and has nearly tripled among children in "high risk" areas of lead exposure.

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http://www.forbes.com/sites/elaineschattner/2015/10/08/flints-lead-contaminated-water-points-to-health-effects-of-ailing-infrastructure/

Flint's Lead-Contaminated Water Points To Health Effects Of Ailing Infrastructure (Forbes)

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Tweet This

- This flare of lead toxicity reflects how a city's unchecked, decaying infrastructure can lead to serious, avoidable illness affecting children.

In Flint Michigan, there's lead in the drinking water. This is not news to residents; they've been worrying about the smell and look of tap water since the city switched water suppliers in a money-saving effort. Pediatricians in the area have been finding high levels of lead in children's blood.

This flare of lead toxicity reflects how a city's unchecked, decaying infrastructure can lead to serious, avoidable illness affecting children. Lead poisoning is nothing to snicker at. It affects adults, too. Blood specialists are familiar with lead toxicity because it commonly causes anemia. Other manifestations include neurological disease, impaired fertility, heart and kidney problems.

The Environmental Protection Agency (EPA) has an informative page on lead's toxic effects in humans. Because lead toxicity causes irreversible neurological damage, prevention is crucial, and early detection is better than late detection.

Early effects of lead poisoning can be subtle. Tiredness and impaired concentration are non-specific, but probably the most frequent symptoms of this metal-induced illness.

The Centers for Disease Control (CDC) considers a level of 5 micrograms per deciliter (5 μg/dl) of blood as acceptable in young children. This threshold – above which a pediatrician should report a lead poisoning case, and inform the parent – was lowered in 2012, for good reason.

According to the CDC's website, today: "No safe blood lead level in children has been identified. Even low levels of lead in blood have been shown to affect IQ, ability to pay attention, and academic achievement. And effects of lead exposure cannot be corrected."

The EPA suggests an “action level” for lead in water: it should be below 15 parts per billion.

I wrote about lead toxicity a few years back, after hundreds of Nigerian children died in a mining region where some people crushed lead in their homes, and metal contaminated the soil and groundwater.

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http://www.nytimes.com/2015/10/09/us/flint-michigan-detroit-water-supply-lead.html?_r=0

Flint to Revert to Detroit Water Supply After Lead Complaints (NYTimes)

By MONICA DAVEYOCT. 8, 2015

Photo

<image005.jpg>

Officials in Flint, Mich., announced Friday that the city would no longer use the Flint River as its source of drinking water. Credit Laura McDermott for The New York Times

More than a year after residents of Flint, Mich., were switched onto a water supply that has since been linked to rising lead levels in the blood of some children, state and city officials abruptly reversed course, announcing on Thursday that Flint would return to its old water source.

“The realization of increased lead exposure and a rise in the number of children with elevated blood lead levels was devastating for our community,” Dayne Walling, the mayor of Flint, said at a news conference where he and Gov. Rick Snyder announced plans to spend $12 million to restore the city’s connection to Detroit’s water system, which comes from Lake Huron. “I could hardly sleep knowing that our youngest and most vulnerable children could be at greater risk if precautionary steps were not taken,” said Mr. Walling, who is seeking re-election next month.

Continue reading the main story

Residents of Flint and others lauded the decision. Some had been pressing for it for many months as complaints emerged about strange smells and colors coming from faucets, as well as unexplained rashes, ailments and worries about lead.

Photo

<image006.jpg>

LeeAnne Walters, a resident who says her 4-year-old son has been found to have high lead levels in his blood, holds a water filter that shows signs of lead particles from her home in Flint. Credit Laura McDermott for The New York Times

“I’m happy that the city is finally doing what they should have done a long time ago,” said LeeAnne Walters, a resident who says her 4-year-old son was found to have high lead levels in his blood. “They should have taken it seriously back months ago when we tried to tell them, but they chose to ignore it. If they had been doing their jobs from the start, it wouldn’t have taken all this.”

Flint, an economically-troubled city 70 miles from Detroit, switched its water supply to the Flint River last year, after leaving Detroit’s costly water system. As part of efforts to cut costs that had overwhelmed the shrinking city, Flint officials planned to join a new, regional water system, which would also draw water from Lake Huron. But the new system will not be ready until mid-2016, and so the city turned in the interim to the Flint River in April 2014, leaving many residents skeptical.

In addition to the strange appearance of the water in some homes, which some residents began collecting in bottles as evidence, there were other problems. When fecal coliform bacteria turned up in the water, residents were told to boil their water. The extra chlorine that was used to solve that problem caused a new one: elevated levels of another contaminant, total trihalomethanes, which health officials say can lead to liver or kidney problems. At the time, the authorities assured residents that they were handling the issues, and that the water remained within safety guidelines.

But then came worries about lead. In early September, a researcher from Virginia Tech reported that tests of the water in nearly 300 Flint homes showed elevated lead levels in the city. A pediatrician announced that blood tests showed increased lead levels in some children since 2014, and last week state officials corroborated those findings.

In recent days, the city, county and state issued advisories — guidance to residents such as installing lead-removing filters; running water for five minutes before using it; and only using cold water for drinking, cooking and making baby formula. But by Thursday morning, there was a more significant announcement, and it was the one some residents like Ms. Walters had long sought: In about two weeks, the city will stop drawing water from the Flint River and return to Detroit’s system until the new regional system is ready.

“We all care about the citizens of Flint, all the citizens in the state, in making sure we can have safe clean water for people,” said Mr. Snyder, who said that he will seek $6 million from the State Legislature to help pay for Flint's temporary return to Detroit water. The city is expected to pay $2 million, and the other $4 million will come from the Charles Stewart Mott Foundation.

Health experts suspect that the water from the Flint River is particularly corrosive and may be leaching lead from some of the city's oldest pipes and service lines. They said water from Detroit's facility is treated with substances that help coat the inside of pipes, which tends to prevent such corrosion.

Yet even as officials announced their plans on Thursday, new test results were announced. Sampling of water in Flint's schools over the past week found that three schools had lead levels higher than a federal standard, state officials said. Flint schools, where water fountains have been turned off in recent days, are providing students with donated bottled water.

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http://www.freep.com/story/opinion/editorials/2015/10/08/flint-water-crisis-obscene-failure-government/73578640/

Flint water crisis: An obscene failure of government (Detroit Free Press)

By The Detroit Free Press Editorial Board 3:47 p.m. EDT October 8, 2015

Empty boxes of water filters lay in piles as Flint residents get free water filters at the Genesee County Community Action Resource Department on Lippincott in Flint on Tuesday October 6, 2015 that state of Michigan is providing to residents with partnership from the Michigan Department of Health Human Services and the Genesee County Community Action Resource Department as part of Governor Snyder's water action plan for the city since high levels of lead have been found in the drinking water that comes from the Flint River. Ryan Garza, Detroit Free Press

<image007.jpg>Buy Photo

(Photo: Ryan Garza, Detroit Free Press)

There's good news: The City of Flint could soon reconnect to the Detroit Water and Sewer Department, a water source that doesn't leach lead from aging pipes into the municipal water supply.

And there's bad news: Three Flint elementary schools have water with lead levels more than 15 parts per billion, in excess of U.S. Environmental Protection Agency guidelines. At one school, Freeman Elementary, water tests found lead levels of 101 ppb. Add this to months of data showing elevated lead levels in homes across Flint, and a higher percentage of children with elevated blood-lead levels.

Lead poisoning causes behavioral and developmental problems in children. It is irreversible. Pregnant women and children are most vulnerable. The U.S. Centers for Disease Control and Prevention say there is no acceptable level of lead exposure.

And in at least three Flint schools, children have been drinking lead-contaminated water for up to 16 months.

DETROIT FREE PRESS

Snyder seeks $6 million to help fix Flint water

Sixteen months, as Flint residents told the state again and again that their water wasn't right. Sixteen months, as independent researchers meticulously documented rising lead levels in water and in the blood of Flint children. Sixteen months, as the state worked to disparage and discredit the work of respected scientists, even as its own data supported those findings.

At a press conference Thursday, Gov. Rick Snyder appeared chastened.

He should.

Snyder appoints the head of the Michigan Department of Environmental Quality, the agency charged with ensuring that drinking water throughout our state is safe.

In Flint, it failed.

Flint's decisions first to join a new regional water authority, and then to pump water from the Flint River — ending a decades-long relationship with Detroit's system — were made while Flint was under state oversight, during the tenure of a Snyder-appointed emergency manager charged with balancing Flint's budget. That system is justified by the governor's constitutional responsibility to attend to the health and wellness of all Michiganders.

In Flint, he failed.

This newspaper twice endorsed Snyder for governor, albeit with grave reservations. But because of the relative weakness of his opponents, the leadership he displayed in resolving Detroit’s protracted financial crisis and our hope that he would use his business acumen to ensure that government better served people, he narrowly won our endorsement.

Last year, in a detailed analysis of Snyder's record, this editorial board expressed our dissatisfaction about Snyder's first term: "The governor balanced the budget at the expense of cities and school districts. His disdain for politics is inappropriate in the state's chief politician; his deficiencies as a deal-maker have sometimes resulted in terrible consequences for Michiganders."

This, we wrote, was Snyder's most profound flaw: "He has got to see people, not sums, as the bottom line of the state balance sheet."

We wrote that he rarely exhibited strong, decisive leadership, that he must "grow into a more sure-footed, principled leader." That we were fearful of what Snyder's second term could hold.

Snyder defended the state's decisions on Thursday, saying it had followed EPA and MDEQ testing protocols. The state did the minimum required, his responses implied. Why should it have to do more?

This is what Snyder does not understand. To lead a state, accountancy is not sufficient. To lead a state, a balanced budget is not sufficient. To lead a state, doing only what is required is not sufficient.

The modern vogue for paring services and cutting budgets is an insidious misunderstanding of the foundations of government. Fiscal conservationism is correct to suggest that government should recognize the value of a dollar. But it is absolutely incorrect when it considers the value of a dollar more significant than other values. A dollar saved at the expense of public safety. A dollar saved at the expense of Flint's children. A dollar saved at the expense of the public trust. These are equations that can never balance.

At this math, Snyder has consistently failed.

DETROIT FREE PRESS

Flint water decision inexcusable

When Flint began to pump river water, it opted not to add a chemical that would have created a film inside its aging service pipes, preventing lead from entering the water. MDEQ signed off on that plan. Snyder's representatives have said both decisions were in progress before Flint's emergency managers were appointed, belying the reality of an emergency manager's broad authority in the city he or she is charged to lead.

That Flint has aging service lines with lead materials shouldn't have been a surprise. That Flint would need to treat the water it pumped to ensure it could flow safely through those lines shouldn't have been at issue.

Here is all we can surmise: Pumping Flint River water saved money. And that, as they say, was that.

Snyder says that his team will issue an "after action report," with recommendations about how things could have been done differently. This is a necessary step and should be conducted by a team with sufficient independence from Snyder's office — and the MDEQ — to reach impartial conclusions.

Snyder has asked the Michigan Legislature to contribute $6 million of the $12 million it will cost Flint to purchase its water from Detroit. The Charles Stewart Mott Foundation and the city itself will cover the remaining costs. The transition could be complete within two weeks. We applaud the Mott Foundation for its contribution and urge the Legislature to approve its portion of the funds required without delay.

Snyder and other officials have said Flint will continue to work to replace lead service lines. This is necessary work. The state has devoted $1 million to pay for water filters for Flint residents, another helpful measure.

People. Not sums.

Thus endeth the lesson. It is one our government should not forget. It is one Flint's children can't forget.

***Correction**: An earlier version of this editorial incorrectly stated the number of schools that have water with high lead levels.*

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http://www.wwmt.com/news/features/state/stories/-Snyder-to-announce-plan-for-Flint-drinking-water-crisis-216188.shtml#.VhbMKCuvyHI

Snydert announces plan for Flint drinking water crisis (Local 3)

Updated: Thu, Oct 08 2015, 01:02 PM

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LANSING, Mich. (NEWSCHANNEL 3) - Tuesday morning Michigan Governor Rick Snyder called for the city of Flint to again get its water from Detroit's system.

The announcement comes as the state scrambles to address a public health emergency over lead in the Flint water supply.

The governor is asking state lawmakers for six million dollars to help the city reconnect to a safe water supply.

Right now Flint's water is leaching lead from old pipes as it flow into homes.

The water is coming from the Flint River, which is treated but still has corrosive features.

To: Henry, Timothy[henry.timothy@epa.gov]
From: Hyde, Tinka
Sent: Thur 10/8/2015 9:24:00 PM
Subject: FW: Flint clips for Afternoon of Oct. 8

FYI

From: Cassell, Peter
Sent: Thursday, October 08, 2015 3:14 PM
To: Kelley, Jeff; Hedman, Susan; Kaplan, Robert; Hyde, Tinka
Cc: Rowan, Anne; Beckmann, Ronna Erin; Harrison, Melissa; Abrams, Dan; Poy, Thomas
Subject: Flint clips for Afternoon of Oct. 8

•□□□□□□□□ Snyder supports switching Flint water system back to Detroit (ClickOnDetroit – Local 4)

•□□□□□□□□ Mott Foundation hoping for 'dramatic results' in Flint (Detroit News)

•□□□□□□□□ Snyder seeking $9.35M in state aid for Flint water crisis, and Michigan lawmakers are on board (MLive.com)

•□□□□□□□□ Switch from Flint River to Detroit water expected to take two weeks (MLive.com)

•□□□□□□□□ Flint's Lead-Contaminated Water Points To Health Effects Of Ailing Infrastructure (Forbes)

•□□□□□□□□ Flint to Revert to Detroit Water Supply After Lead Complaints (NYTimes)

•□□□□□□□□ Flint water crisis: An obscene failure of government (Detroit Free Press)

•□□□□□□□□ Snydert announces plan for Flint drinking water crisis (Local 3)

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http://www.clickondetroit.com/news/gov-snyder-to-address-flint-water-today/35718412

Snyder supports switching Flint water system back to Detroit (ClickOnDetroit – Local 4)

Author: Local 4 - ClickOnDetroit news staff, local4@clickondetroit.com

Published On: Oct 08 2015 02:02:44 AM EDT Updated 7 m

Snyder supports switching Flint water system back to Detroit

Show Transcript

FLINT, Mich. -

Flint will connect with Detroit's water system amid a public health emergency over lead in its water.

The plan was announced Thursday by Gov. Rick Snyder, Flint Mayor Dayne Walling and other state officials.

"This the fastest way to protect public health," Walling said.

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Flint advisory group supports reconnecting to Detroit water

Flint advisory group supports reconnecting to Detroit water

State begins distributing water filters in Flint

Flint River Fest postponed amid drinking water problems

Snyder said he will ask state lawmakers for $6 million, half of the $12 million need to reconnect with the Great Lakes Water Authority (GLWA) through next summer. The Charles Stewart Mott Foundation will provide $4 million and the city of Flint will provide $2 million.

Then, Flint would transition next summer to the new Karegnondi Water Authority pipeline.

The announcement comes a day after a committee of local experts in health, water and science recommended Flint reconnect to Detroit's water system while it awaits the new pipeline to Lake

Huron.

Flint has a public health emergency due to corrosive water leaching lead from old pipes. State government and nonprofit groups are distributing filters and bottled water to Flint homes and schools.

"The efforts to continue providing filters will continue to ensure that every home has a line of defense against the problems in the infrastructure, service lines, and older plumbing while changes continue to be made," Walling said.

Flint mayor speaks at news conference:

Read: State begins distributing water filters in Flint

Snyder said state and local authorities will continue to carry out preventative steps that include continued testing, the use of faucet filters and providing residents with accurate information about steps to eliminate lead exposure. The Michigan Departments of Environmental Quality and Health and Human Services today also committed an additional $3.5 million for water filters, free lead testing through the state laboratory for Flint water customers, and hiring additional staff to conduct health exposure monitoring for lead in drinking water.

"The Detroit Water and Sewerage Department welcomes the opportunity to work with Governor Rick Snyder and the city of Flint to provide residents with clean, safe drinking water. The Great Lakes Water Authority is committed to continue providing that service to Flint while the city implements a new drinking water system," said Sue F. McCormick, Interim CEO of the GLWA.

Snyder speaks at news conference:

School test results released; more investigation planned

The state today also released the first results from its lead screening program in schools and homes. Of 37 total samples taken at 13 buildings, four samples spread over three buildings exceeded the federal action level of 15 parts per billion.

However, this sampling provides only an initial screen, and the state is committing to further testing water and inspecting plumbing at these schools. Until testing is complete, schools are advised to continue using bottled water and filtration as a precaution to protect children.

In addition, free testing is still available for any other Flint school, including daycares and Head Starts. Free testing is also available for any Flint resident.

Additional information, including more detailed lead screening results, is available at www.michigan.gov/flintwater.

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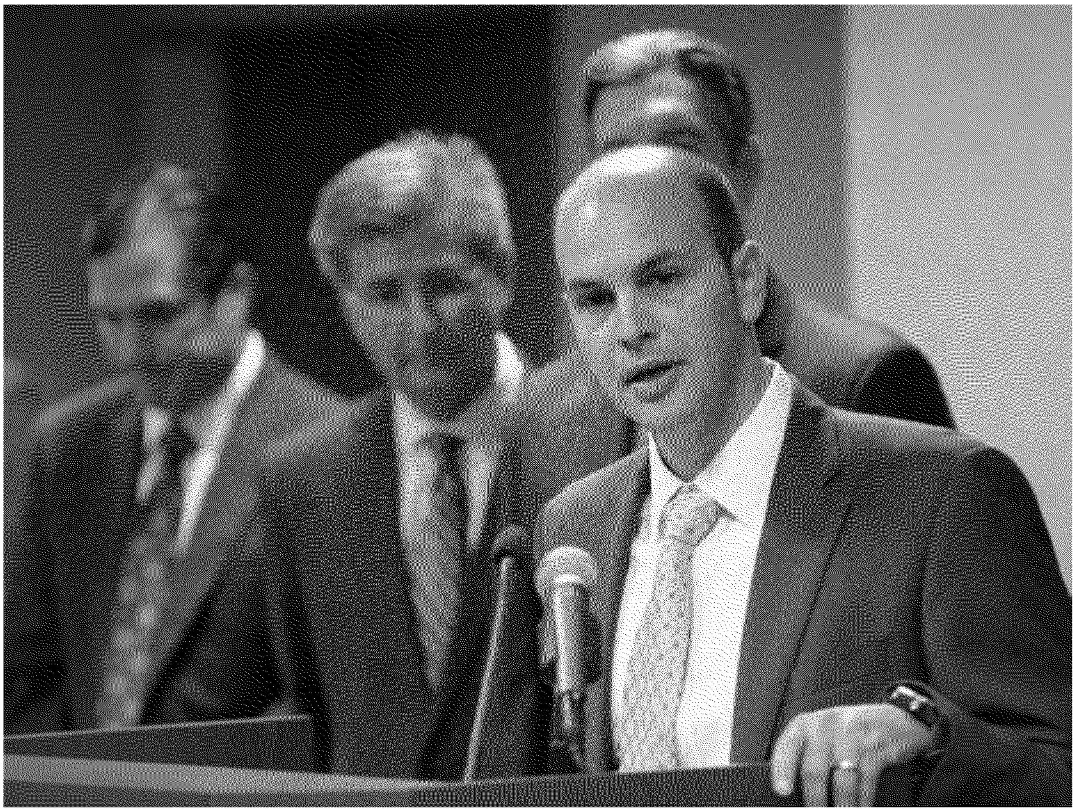
http://www.detroitnews.com/story/news/local/michigan/2015/10/08/mott-foundation-grant-flint-water/73599612/

Mott Foundation hoping for ‘dramatic results’ in Flint (Detroit News)

Jennifer Chambers, The Detroit News 3:31 p.m. EDT October 8, 2015



(Photo: Todd McInturf / The Detroit News)

There was no more watching from the sidelines, C. S. Mott Foundation president Ridgway H. White said.

Not after tests revealed that some children in Flint had elevated lead levels since the switch from Detroit's water system in April 2014.

It was time for the Mott Foundation to step in and help in a way few organizations can: in just a matter of days, it made a $4 million grant to help defray the cost to reconnect Flint with the Detroit Water and Sewerage Department, which ultimately will cost $12 million. Gov. Rick Snyder on Thursday announced the plan, which also includes $6 million from the state and $4 million from the city of Flint..

"Flint has been dealing with water issues for the past 18 months. We've looked at it and merely monitored. It's not traditional for philanthropy to get involved in government," White said Thursday afternoon.

"But after last week when the lead levels in children study was released, we felt we couldn't sit on the sidelines and watch," he said.

So White called Snyder and Flint Mayor Dayne Walling last week to offer the assistance of the foundation, a private grant-making organization with $2.7 billion in assets that in 2014 provided 400 grants totaling more than $101 million.

"We always try to innovate as a foundation," White said. "This is moving fast ... and we hope we will see dramatic results."

Established in 1926 in Flint by its namesake automotive pioneer Charles Stewart Mott, the foundation focuses most of its time and money on civic engagement, the environment, helping low- and moderate-income children and young adults access education and the Flint community.

It is also an international foundation that makes grant to South Africa, South America, Central and Eastern Europe and Russia in its civil society and environment programs.

Much of its focus is locally. Last week the foundation awarded a $100,000 grant to the United Way of Genesee County to provide free water filters to Flint residents who are concerned about lead in their drinking water.

White said he hopes the $4 million grant will return safe, clean drinking water to Flint.

"With all the testing going on we are going to have the most tested water in the country and we hope it's the most safe water at the end of the day," he said.

jchambers@detroitnews.com

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www.mlive.com/lansing-news/index.ssf/2015/10/snyder_requesting_935m_for_sta.html

Snyder seeking $9.35M in state aid for Flint water crisis, and Michigan lawmakers are on board (MLive.com)

File photo *(Jake May | MLive.com)*

Print Email

By Jonathan Oosting | joosting@mlive.com
Follow on Twitter
on October 08, 2015 at 3:25 PM, updated October 08, 2015 at 3:37 PM

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flint water

- State should pay for its own mistakes in Flint water crisis
- Snyder seeking $9.35M in state aid for Flint water crisis, and Michigan lawmakers are on board
- Switch from Flint River to Detroit water expected to take two weeks
- Negative test for lead puts Genesee County jail back on city water
- Governor calls for $16M plan for Flint water crisis, switch to Detroit

All Stories

LANSING, MI — Top Michigan lawmakers appear ready and willing to send nearly $10 million to Flint in order to address a public health crisis and help the city return to Detroit water, but it's not immediately clear where the funding will come from.

"The circumstances are dire enough that we need to find the money," said Sen. Dave Robertson, R-Grand Blanc, referencing the drinking water in Flint which scientists have linked to high lead blood levels in children.

Michigan Gov. Rick Snyder on Thursday announced he will ask the Legislature to appropriate $6 million to help the city switch back to Detroit water, reversing a cost-cutting change that was made under a state-appointed emergency manager.

He'll also ask for another $3.35 million to pay for water testing at a state lab and other "agency support" services, including school inspections and follow-ups with children, according to a budget spokesman.

"All Flint residents need clean, safe drinking water," Snyder said in a statement following a morning press conference. "The technical experts helping the city on its water advisory all agree this move back to the Great Lakes Water Authority provides the best public health protection for children and families."

Harsh Flint River water has been blamed for exacerbating corrosion in aging pipes, and toxic lead levels have been detected in drinking water in three Flint schools, state officials said Thursday.

Switching back to Detroit water until the Karegnondi system comes online next summer will cost about $12 million. Snyder wants the state to pay half, the Mott Foundation has committed $4 million, leaving Flint to pay the other $2 million.

"I'm committed to taking action," House Speaker Kevin Cotter, R-Mt. Pleasant, said later Thursday. "We need to spend some more time with it to figure out exactly what that action looks like, but it's clear there's going to be a need for some money from the state, and I'm in support of that."

Senate Majority Leader Arlan Meekhof, R-West Olive said he did not know exactly where the Legislature will find the money but said "it is a public health issue, and we're going to find a way to address it.

He mentioned Healthy Michigan, the state's federally-funded expanded Medicaid program, as one potential source of financing. Cotter said lawmakers could also look to the Rainy Day Fund, but House Appropriations Chairman Al Pscholka said he did not think that would be necessary.

"This is solvable, and the state is in a good enough fiscal position to handle this," said Pscholka, R-Stevensville, indicating that he wants to act as soon as next week. "...Sometimes good government means you help people."

Senate Appropriations Chairman Dave Hildenbrand, R-Lowell, said he discussed the funding request with Snyder's budget director earlier Thursday and is open to the idea but wants "to make sure it's done right."

Senate Minority Leader Jim Ananich, D-Flint, won an amendment to a supplemental spending bill last week, inserting a placeholder that will likely serve as a vehicle for a total of $9.35 million in state aid for Flint.

Ananich, who has been calling on the state to help the city return to Detroit water, joined the governor at Thursday's press conference, saying the announcement was not "a victory" but a "fix that is unfortunately necessary."

Like the Karegnondi pipeline Flint will eventually use, Detroit water is drawn from Lake Huron, which the Snyder administration says is less prone to runoff issues that can affect shallower rivers. And the Great Lakes Water Authority has extra corrosion control protections already in place to limit lead from leaching into the water.

Still, damage was done to aging pipes in Flint, which could continue to affect drinking water. The state announced an action plan last week, with the Michigan Departments of Environmental Quality and Health and Human Services committing an initial $1 million for water filters and lead testing.

Rep. Sheldon Neely, D-Flint, said he is happy that the governor is calling for funding to help the city switch its water source, but he criticized the "anemic" response to the overall crisis.

"We have a $12 million problem, the state offered $6 million to solve it, but we already know the city of Flint and other surrounding areas are really cash strapped," he said. "At this point, no real culpability has been established for the emergency manger that made that decision."

Pscholka said he is frustrated by the situation in Flint and believes the state does bear some responsibility for the crisis, but he also noted that the Flint City Council approved early plans to move off of the Detroit water.

"Most people who are water customers don't like their water provider," Pscholka said. "They always think there's a better deal."

Asked if the state will conduct a thorough review of the water switch, Snyder said there will be continued analysis but, for the time being, he wants to "stay focused on the solutions and taking actions to solve the problems."

While lawmakers will offer various ideas on the funding source, a discussion that could go a number of ways, Robertson said he supports he governor's call for a $6 million appropriation to help the city make the switch.

"There's nothing more basic then when your tap water turns on, does water come out and is it drinkable, and does your toilet flush?" he said. "That's as basic as it gets, and I think we have an obligation to correct the situation... and then of course move as aggressively as possible to get Karegnondi done."

Jonathan Oosting is a Capitol reporter for MLive Media Group. Email him, find him on Facebook or follow him on Twitter.

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http://www.mlive.com/news/flint/index.ssf/2015/10/city_says_it_can_switch_from_f.html

Switch from Flint River to Detroit water expected to take two weeks (MLive.com)

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Flint Mayor Dayne Walling waits to speak before an announcing the city of Flint's 16 million dollar plan to switch back to Detroit water during a press conference at Mott Foundation/Commerce Center Building in Flint, Mich. on Thursday Oct. 8, 2015. (Christian Randolph/Flint Journal)

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By Ron Fonger | rfonger1@mlive.com
on October 08, 2015 at 3:24 PM, updated October 08, 2015 at 3:58 PM

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- Snyder seeking $9.35M in state aid for Flint water crisis, and Michigan lawmakers are on board
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FLINT, MI -- Water from Lake Huron is expected to start running through Flint's system in two weeks or less, but an expert says it will take another month for lead levels in the city to drop back to lower levels as a result.

Gov. Rick Snyder announced plans today, Oct. 8, for the state to pay most of a $12-million bill for switching the city's water source from the Flint River to Lake Huron water treated by the Detroit Water and Sewerage Department.

The Charles Stewart Mott Foundation has offered a $4-million grant toward the switch, and the city of Flint has committed $2 million more.

The switch back to the Detroit water system -- which the city abandoned in favor of treating Flint River water in April 2014 under the control of a state-appointed emergency manager -- represents a significant turnaround in the state's response to Flint's escalating water crisis.

Last week, Snyder said going back to the Detroit system was an option on the table, but was more focused on a water plan that focused on providing filters and free testing to Flint's residents.

Today's announcement followed a recommendation Wednesday by Flint's Technical Advisory Committee to change the city's drinking water source because of rising levels of lead in both water and the blood of children and infants in the city.

"We believe it will be better for the citizens of Flint ... This is the city of Flint making the decision ... We're supporting that fully," Snyder said.

Flint's move to the Detroit water system is expected to cost about $1.3 million per month until the Karegnondi Water Authority pipeline to Flint from Lake Huron is completed next summer. Flint has signed on to join the regional KWA system, and will switch to that system when it's finished.

C.S. Mott Foundation President Ridgway White said the foundation wanted to help expedite the process to bring "safe, clean water" back to Flint.

"We believe this transitional solution is the right and necessary thing to do, and we're glad we could help the state and the city make it happen," he said.

The governor plans to ask the state Legislature for a total of $10 million to address the Flint water crisis. The first $6 million is for the switch.

An additional $4 million will be requested from the state for efforts to address immediate lead issues, including further testing of children in Flint school buildings where the state this week found three buildings that tested above the federal limits for lead in the drinking water. One school tested at more than six times the limit.

Flint Mayor Dayne Walling said the city is preparing to carry out the change to lake water, and Genesee County Drain Commissioner Jeff Wright said the process must involve Detroit, Flint and the county.

"Each community has one or more valves that has to be operated," Wright said. "In Detroit's case, they have to supply the additional water, which means they have to increase water production. "In our case and Flint's, we have to flush the existing line and test for bacteria."

Detroit owns the water transmission line from its intake in Lake Huron to the area of Baxter and Potter roads in eastern Genesee County.

The county purchased a 9-mile section of pipeline from the city of Flint in June 2014 that stretches from Baxter and Potter to the area of Richfield and Genesee roads, Wright said.

From there, the city still owns a dormant section of transmission pipe that stretches through the Kearsley Creek to its treatment plant on Dort Highway.

MLive-The Flint Journal could not reach Flint Department of Public Works Director Howard Croft for comment on other preparations by the city, but Walling said work has already started to make the switch happen as soon possible.

The Rev. Alfred Harris, president of the Concerned Pastors for Social Action, said he's "happy, very happy" that the city will no longer use the Flint River as its drinking water source.

"But I wish it would have taken place months ago," Harris said.

The mayor said city officials will discuss their progress connecting to DWSD in detail Monday, Oct. 12, but said the preparation includes legal and contractual work, preparation of transmission lines for a new water source and changes in treatment at the Flint water plant.

Walling and members of Flint's Technical Advisory Committee were told Wednesday, Oct. 7, that the city's change in water source should improve lead levels after about a month.

Virginia Tech professor Marc Edwards said he expects it will take several weeks for lead levels to drop as a result of changed water.

Water test results from Flint homes show lead levels have been rising since the city began using the Flint River for water in April 2014.

The results of Flint's testing for lead since 1992, released by the state Department of Environmental Quality to The Flint Journal last month, showed 10 percent of homes sampled in the city's most recent testing contained 11 parts per billion or more of lead, with six of 69 samples exceeding the federal lead limit of 15 ppb.

Those are the highest lead levels measured in Flint by the city in more than 20 years, the state data shows.

In contrast, the city's tests of Lake Huron water from Detroit for one 10-year period -- from June 2001 until September 2011 -- resulted in just one of 155 samples registering higher than 15 ppb of lead.

Walling said he will ask the City Council and Flint's Receivership Transition Advisory Board to approve the city's $2-million contribution to switch to Detroit-supplied water.

Walling said he "could hardly sleep" once he found out the extent of the city's lead problem two weeks ago. That's when a Hurley Medical Center doctor released a study on blood lead levels in Flint's children.

The study showed the percentage of Flint infants and children with above average lead levels in their blood has nearly doubled citywide since the switch to river water, and has nearly tripled among children in "high risk" areas of lead exposure.

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http://www.forbes.com/sites/elaineschattner/2015/10/08/flints-lead-contaminated-water-points-to-health-effects-of-ailing-infrastructure/

Flint's Lead-Contaminated Water Points To Health Effects Of Ailing Infrastructure (Forbes)

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- This flare of lead toxicity reflects how a city's unchecked, decaying infrastructure can lead to serious, avoidable illness affecting children.

In Flint Michigan, there's lead in the drinking water. This is not news to residents; they've been worrying about the smell and look of tap water since the city switched water suppliers in a money-saving effort. Pediatricians in the area have been finding high levels of lead in children's blood.

This flare of lead toxicity reflects how a city's unchecked, decaying infrastructure can lead to serious, avoidable illness affecting children. Lead poisoning is nothing to snicker at. It affects adults, too. Blood specialists are familiar with lead toxicity because it commonly causes anemia. Other manifestations include neurological disease, impaired fertility, heart and kidney problems.

The Environmental Protection Agency (EPA) has an informative page on lead's toxic effects in humans. Because lead toxicity causes irreversible neurological damage, prevention is crucial, and early detection is better than late detection.

Early effects of lead poisoning can be subtle. Tiredness and impaired concentration are non-specific, but probably the most frequent symptoms of this metal-induced illness.

The Centers for Disease Control (CDC) considers a level of 5 micrograms per deciliter (5 μg/dl) of blood as acceptable in young children. This threshold – above which a pediatrician should report a lead poisoning case, and inform the parent – was lowered in 2012, for good reason.

According to the CDC's website, today: "No safe blood lead level in children has been identified. Even low levels of lead in blood have been shown to affect IQ, ability to pay attention, and academic achievement. And effects of lead exposure cannot be corrected."

The EPA suggests an "action level" for lead in water: it should be below 15 parts per billion.

I wrote about lead toxicity a few years back, after hundreds of Nigerian children died in a mining region where some people crushed lead in their homes, and metal contaminated the soil and groundwater.

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http://www.nytimes.com/2015/10/09/us/flint-michigan-detroit-water-supply-lead.html?_r=0

Flint to Revert to Detroit Water Supply After Lead Complaints (NYTimes)

By MONICA DAVEYOCT. 8, 2015

Photo

Officials in Flint, Mich., announced Friday that the city would no longer use the Flint River as its source of drinking water. Credit Laura McDermott for The New York Times

More than a year after residents of Flint, Mich., were switched onto a water supply that has since been linked to rising lead levels in the blood of some children, state and city officials abruptly reversed course, announcing on Thursday that Flint would return to its old water source.

“The realization of increased lead exposure and a rise in the number of children with elevated blood lead levels was devastating for our community,” Dayne Walling, the mayor of Flint, said at a news conference where he and Gov. Rick Snyder announced plans to spend $12 million to restore the city’s connection to Detroit’s water system, which comes from Lake Huron. “I could hardly sleep knowing that our youngest and most vulnerable children could be at greater risk if precautionary steps were not taken,” said Mr. Walling, who is seeking re-election next month.

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Residents of Flint and others lauded the decision. Some had been pressing for it for many months as complaints emerged about strange smells and colors coming from faucets, as well as unexplained rashes, ailments and worries about lead.

Photo

LeeAnne Walters, a resident who says her 4-year-old son has been found to have high lead levels in his blood, holds a water filter that shows signs of lead particles from her home in Flint. Credit Laura McDermott for The New York Times

“I’m happy that the city is finally doing what they should have done a long time ago,” said LeeAnne Walters, a resident who says her 4-year-old son was found to have high lead levels in his blood. “They should have taken it seriously back months ago when we tried to tell them, but they chose to ignore it. If they had been doing their jobs from the start, it wouldn’t have taken all this.”

Flint, an economically-troubled city 70 miles from Detroit, switched its water supply to the Flint River last year, after leaving Detroit’s costly water system. As part of efforts to cut costs that had overwhelmed the shrinking city, Flint officials planned to join a new, regional water system, which would also draw water from Lake Huron. But the new system will not be ready until mid-2016, and so the city turned in the interim to the Flint River in April 2014, leaving many residents skeptical.

In addition to the strange appearance of the water in some homes, which some residents began collecting in bottles as evidence, there were other problems. When fecal coliform bacteria turned up in the water, residents were told to boil their water. The extra chlorine that was used to solve that problem caused a new one: elevated levels of another contaminant, total trihalomethanes, which health officials say can lead to liver or kidney problems. At the time, the authorities assured residents that they were handling the issues, and that the water remained within safety guidelines.

But then came worries about lead. In early September, a researcher from Virginia Tech reported that tests of the water in nearly 300 Flint homes showed elevated lead levels in the city. A pediatrician announced that blood tests showed increased lead levels in some children since 2014, and last week state officials corroborated those findings.

In recent days, the city, county and state issued advisories — guidance to residents such as installing lead-removing filters; running water for five minutes before using it; and only using cold water for drinking, cooking and making baby formula. But by Thursday morning, there was a more significant announcement, and it was the one some residents like Ms. Walters had long sought: In about two weeks, the city will stop drawing water from the Flint River and return to Detroit's system until the new regional system is ready.

"We all care about the citizens of Flint, all the citizens in the state, in making sure we can have safe clean water for people," said Mr. Snyder, who said that he will seek $6 million from the State Legislature to help pay for Flint's temporary return to Detroit water. The city is expected to pay $2 million, and the other $4 million will come from the Charles Stewart Mott Foundation.

Health experts suspect that the water from the Flint River is particularly corrosive and may be leaching lead from some of the city's oldest pipes and service lines. They said water from Detroit's facility is treated with substances that help coat the inside of pipes, which tends to prevent such corrosion.

Yet even as officials announced their plans on Thursday, new test results were announced. Sampling of water in Flint's schools over the past week found that three schools had lead levels higher than a federal standard, state officials said. Flint schools, where water fountains have been turned off in recent days, are providing students with donated bottled water.

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http://www.freep.com/story/opinion/editorials/2015/10/08/flint-water-crisis-obscene-failure-government/73578640/

Flint water crisis: An obscene failure of government (Detroit Free Press)

By The Detroit Free Press Editorial Board 3:47 p.m. EDT October 8, 2015

Empty boxes of water filters lay in piles as Flint residents get free water filters at the Genesee County Community Action Resource Department on Lippincott in Flint on Tuesday October 6, 2015 that state of Michigan is providing to residents with partnership from the Michigan Department of Health Human Services and the Genesee County Community Action Resource Department as part of Governor Snyder's water action plan for the city since high levels of lead have been found in the drinking water that comes from the Flint River. Ryan Garza, Detroit Free Press

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(Photo: Ryan Garza, Detroit Free Press)

There's good news: The City of Flint could soon reconnect to the Detroit Water and Sewer Department, a water source that doesn't leach lead from aging pipes into the municipal water supply.

And there's bad news: Three Flint elementary schools have water with lead levels more than 15 parts per billion, in excess of U.S. Environmental Protection Agency guidelines. At one school, Freeman Elementary, water tests found lead levels of 101 ppb. Add this to months of data showing elevated lead levels in homes across Flint, and a higher percentage of children with elevated blood-lead levels.

Lead poisoning causes behavioral and developmental problems in children. It is irreversible. Pregnant women and children are most vulnerable. The U.S. Centers for Disease Control and

Prevention say there is no acceptable level of lead exposure.

And in at least three Flint schools, children have been drinking lead-contaminated water for up to 16 months.

DETROIT FREE PRESS

Snyder seeks $6 million to help fix Flint water

Sixteen months, as Flint residents told the state again and again that their water wasn't right. Sixteen months, as independent researchers meticulously documented rising lead levels in water and in the blood of Flint children. Sixteen months, as the state worked to disparage and discredit the work of respected scientists, even as its own data supported those findings.

At a press conference Thursday, Gov. Rick Snyder appeared chastened.

He should.

Snyder appoints the head of the Michigan Department of Environmental Quality, the agency charged with ensuring that drinking water throughout our state is safe.

In Flint, it failed.

Flint's decisions first to join a new regional water authority, and then to pump water from the Flint River — ending a decades-long relationship with Detroit's system — were made while Flint was under state oversight, during the tenure of a Snyder-appointed emergency manager charged with balancing Flint's budget. That system is justified by the governor's constitutional responsibility to attend to the health and wellness of all Michiganders.

In Flint, he failed.

This newspaper twice endorsed Snyder for governor, albeit with grave reservations. But because of the relative weakness of his opponents, the leadership he displayed in resolving Detroit's protracted financial crisis and our hope that he would use his business acumen to ensure that government better served people, he narrowly won our endorsement.

Last year, in a detailed analysis of Snyder's record, this editorial board expressed our dissatisfaction about Snyder's first term: "The governor balanced the budget at the expense of cities and school districts. His disdain for politics is inappropriate in the state's chief politician; his deficiencies as a deal-maker have sometimes resulted in terrible consequences for Michiganders."

This, we wrote, was Snyder's most profound flaw: "He has got to see people, not sums, as the bottom line of the state balance sheet."

We wrote that he rarely exhibited strong, decisive leadership, that he must "grow into a more sure-footed, principled leader." That we were fearful of what Snyder's second term could hold.

Snyder defended the state's decisions on Thursday, saying it had followed EPA and MDEQ testing protocols. The state did the minimum required, his responses implied. Why should it have to do more?

This is what Snyder does not understand. To lead a state, accountancy is not sufficient. To lead a state, a balanced budget is not sufficient. To lead a state, doing only what is required is not sufficient.

The modern vogue for paring services and cutting budgets is an insidious misunderstanding of the foundations of government. Fiscal conservationism is correct to suggest that government should recognize the value of a dollar. But it is absolutely incorrect when it considers the value of a dollar more significant than other values. A dollar saved at the expense of public safety. A dollar saved at the expense of Flint's children. A dollar saved at the expense of the public trust. These are equations that can never balance.

At this math, Snyder has consistently failed.

DETROIT FREE PRESS

Flint water decision inexcusable

When Flint began to pump river water, it opted not to add a chemical that would have created a film inside its aging service pipes, preventing lead from entering the water. MDEQ signed off on that plan. Snyder's representatives have said both decisions were in progress before Flint's emergency managers were appointed, belying the reality of an emergency manager's broad authority in the city he or she is charged to lead.

That Flint has aging service lines with lead materials shouldn't have been a surprise. That Flint would need to treat the water it pumped to ensure it could flow safely through those lines shouldn't have been at issue.

Here is all we can surmise: Pumping Flint River water saved money. And that, as they say, was that.

Snyder says that his team will issue an "after action report," with recommendations about how things could have been done differently. This is a necessary step and should be conducted by a team with sufficient independence from Snyder's office — and the MDEQ — to reach impartial conclusions.

Snyder has asked the Michigan Legislature to contribute $6 million of the $12 million it will cost

Flint to purchase its water from Detroit. The Charles Stewart Mott Foundation and the city itself will cover the remaining costs. The transition could be complete within two weeks. We applaud the Mott Foundation for its contribution and urge the Legislature to approve its portion of the funds required without delay.

Snyder and other officials have said Flint will continue to work to replace lead service lines. This is necessary work. The state has devoted $1 million to pay for water filters for Flint residents, another helpful measure.

People. Not sums.

Thus endeth the lesson. It is one our government should not forget. It is one Flint's children can't forget.

***Correction**: An earlier version of this editorial incorrectly stated the number of schools that have water with high lead levels.*

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http://www.wwmt.com/news/features/state/stories/-Snyder-to-announce-plan-for-Flint-drinking-water-crisis-216188.shtml#.VhbMKCuvyHI

Snydert announces plan for Flint drinking water crisis (Local 3)

Updated: Thu, Oct 08 2015, 01:02 PM

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LANSING, Mich. (NEWSCHANNEL 3) - Tuesday morning Michigan Governor Rick Snyder called for the city of Flint to again get its water from Detroit's system.

The announcement comes as the state scrambles to address a public health emergency over lead in the Flint water supply.

The governor is asking state lawmakers for six million dollars to help the city reconnect to a safe water supply.

Right now Flint's water is leaching lead from old pipes as it flow into homes.

The water is coming from the Flint River, which is treated but still has corrosive features.

To: Kelley, Jeff[kelley.jeff@epa.gov]; Hedman, Susan[hedman.susan@epa.gov]; Kaplan, Robert[kaplan.robert@epa.gov]; Hyde, Tinka[hyde.tinka@epa.gov]
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From: Cassell, Peter
Sent: Fri 10/9/2015 4:21:06 PM
Subject: Flint Clips Oct. 9

Below are today's daily press clips for the Flint, Michigan, drinking water issue.

Pete Cassell
Press Officer
U.S. Environmental Protection Agency

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FLINT DRINKING WATER CLIPS

US. EPA Region 5 – as prepared by Peter Cassell *(ORA/OEC/PA)* on Oct. 9, 2015

•□□□□□□□□ When did state know about lead in Flint water? 6 takeaways from Snyder plan **(Mlive)**

•□□□□□□□□ Flint water tests suggest statewide lead issues **(Detroit News)**

•□□□□□□□□ Toxic water in Flint schools is 'mind-baffling,' says elementary school parent **(Mlive)**

•□□□□□□□□ Flint returning to Detroit water, but problems persist **(Michigan Radio)**

•□□□□□□□□ State should pay for its own mistakes in Flint water crisis **(MLIVE: OP-ED)**

•□□□□□□□□ Michigan announces action plan for lead levels in Flint's drinking water **(EPNEWSWIRE)**

•□□□□□□□□ Michigan governor calls for funding to improve Flint drinking water **(EPNEWSWIRE)**

•□□□□□□□□ Letter: Flint water crisis a disgrace **(Holland Sentinel: Op-ed)**

•□□□□□□□□ The fight for clean water in Flint, Mich. **(Al Jazeera America)**

•□□□□□□□□ Snyder supports switching Flint water system back to Detroit **(Seattle Times)**

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http://www.mlive.com/news/flint/index.ssf/2015/10/seven_key_takeaways_from_gov_s.html

Flint Mayor Dayne Walling waits to speak before an announcing the city of Flint's 16 million dollar plan to switch back to Detroit water during a press conference at Mott Foundation/Commerce Center Building in Flint, Mich. on Thursday Oct. 8, 2015. (Christian Randolph/Flint Journal)

Christian Randolph | crandolp@mlive.com

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By Ron Fonger | rfonger1@mlive.com
on October 09, 2015 at 5:03 AM, updated October 09, 2015 at 10:28 AM

When did state know about lead in Flint water? 6 takeaways from Snyder plan

Toxic water in Flint schools is 'mind-baffling,' says elementary school parent

State should pay for its own mistakes in Flint water crisis

Snyder seeking $9.35M in state aid for Flint water crisis, and Michigan lawmakers are on board

Switch from Flint River to Detroit water expected to take two weeks

All Stories

FLINT, MI -- Gov. Rick Snyder has announced a $16 million plan to reduce lead in the city's drinking water, and he and other key players in carrying it out made several key points to remember on Thursday, Oct. 8.

Among them:

1. When did the state know of Flint's lead problem?: The first indication of rising lead levels in Flint drinking water came from the city's own sampling of water inside homes in the city soon after it changed its water source from Lake Huron to the Flint River.

Results from 100 water samples collected from Flint in 2014 showed increasing lead levels with 10 percent of homes tested at 6 parts per billion of lead or more.

Those were the highest lead levels measured in Flint by the city in more than 20 years, the state data shows.

That testing was completed more than nine months ago, but because the levels did not meet the federal action limit of 15 ppb, 69 more tests were done in 2015, and lead levels continued to rise.

Michigan Department of Envronmental Quality Director Dan Wyant said the state notified the city of the need to develop a lead action plan in August 2015, but the concerns about lead levels were never publicized as a potential public health threat until researchers from Virginia Tech university pushed the issue.

2. Water in schools: In the past seven days, the state tested Flint School District buildings for lead in water, finding three buildings that tested above the federal limits.

Snyder said he is planning to spend $4 million on non-Detroit-water expenses in Flint, and the school district will get immediate attention, including a complete evaluation of the plumbing systems in all 13 city schools.

Testing for lead in water in schools could also be a broader issue moving forward, as the governor said there "probably should be" school water testing elsewhere in Michigan.

3. A change in tone: State officials, including the governor, on Thursday praised the work of a Hurley Medical Center doctor who published a study on the blood lead levels of Flint children since the city changed its water source.

"The Flint Hurley data and the confirmation (from the state Department of Health & Human Services)...just reinforces the significance of this issue," the governor said.

A spokeswoman for the state DHSS just two weeks ago dismissed the Hurley study, saying the state's more extensive data "is not in line" with the findings.

Likewise, there was no questioning Thursday of water testing by Virginia Tech, which first brought lead concerns to light.

Just one month ago, a spokesman for the state DEQ said of the testing that while the state "appreciates academic participation in this discussion, offering broad, dire public health advice based on some quick testing could be seen as fanning political flames irresponsibly."

4. Lesson learned: The governor said the state wasn't immediately on alert because of Flint's water quality because water coming out of the city's treatment plant met all state and federal guidelines for lead.

When the water interacted with lead service lines and lead solder in pipes, however, it caused significantly more leaching of lead into water than Lake Huron water did.

"That's something that you learn through this process," Snyder said.

5. No so fast: While Snyder said the immediate concern is addressing the public health emergency here rather than assigning blame, he said decisions that were made will be reviewed and changes could be recommended.

Others said more answers are still necessary or different approaches required.

"I'm heartened that the residents of Flint will soon have cleaner, safer water flowing from their taps, but I'm determined to get answers to make sure this doesn't happen in my community or other communities ever again," said state Senate Minority Leader Jim Ananich, D-Flint. "I want to be clear — this is not a victory for my community. This is a fix to a problem that never should have happened."

U.S. Rep Dan Kildee, D-Flint, said, in part, "Flint is a financially distressed city, and it should not have to empty out its bank account to pay for the state's failures.

"The decision to switch to the Flint River water source was made while the city was under state emergency management, and now it is incumbent on Gov. Snyder and the state to fix – and pay – for the problem they created."

6. What's next: Flint Mayor Dayne Walling said the City Council and Receivership Transition Advisory Board will be asked to take action to fund $2 million to help pay for Detroit water for the next nine months.

That could start as soon as Monday, Oct. 12, when the council is scheduled to meet in a committee at 4:30 p.m. and a regular meeting at 6 p.m.

The flow of Detroit water is expected to begin within the next two weeks.

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http://www.detroitnews.com/story/news/politics/2015/10/08/flint-water/73623958/

Jim Lynch, The Detroit News 11:34 p.m. EDT October 8, 2015

(Photo: David Guralnick / The Detroit News)

State and local officials hope switching Flint back to Detroit's water system, announced Thursday, will solve lead contamination issues there in the short run, but the situation exposed a health issue that may be happening in other parts of the state.

Water sampling at Flint's schools discovered a few instances of lead levels that exceed the federal safety standard. The findings raised the possibility that lead problems may exist in other parts of the state, including Metro Detroit.

Private and public schools are not covered under federal testing guidelines, said Dan Wyant, director of Michigan's Department of Environmental Quality.

State testing of four water samples from three Flint schools came back with lead levels exceeding the 15 parts per billion standard set by the federal government. A total of 37 water samples were taken from 13 Flint schools.

"This data underscores the need for a complete and thorough evaluation of the plumbing system in each school," Wyant said.

State officials plan to contact all schools in the state, urging them to assess their lead levels in drinking water. Facilities built in the last quarter-century are unlikely to have lead issues, but others built before the mid-1980s may have lead connections and could be a problem, according to the agency.

"Schools that have lead infrastructure should be testing," Wyant said.

The Michigan Association of School Boards said it "absolutely supports anything that helps to keep students safe," but added that the state needs to chip in more money for school infrastructure like water pipes.

"Michigan is one of just a handful of states that does not offer funding for some portion of school construction," said John Tramontana, spokesman for the school board group. "We should be looking at ways to help schools pay for infrastructure improvements to ensure our students are learning in a safe environment."

Lead poisoning can cause learning disabilities and, at high levels, may lead to seizures, coma and death, according to the Centers for Disease Control and Prevention.

Reconnecting to Detroit

Gov. Rick Snyder appeared in Flint Thursday to announce that the city will reconnect to the Detroit Water and Sewerage Department in two weeks. The hookup for up to a year is expected to cost $12 million since the city since April 2014 has been getting its drinking water free from the Flint River.

The city will tie into the Detroit system until it can finish construction of its own pipeline to Lake Huron, which is where Detroit also gets its water.

"I'm relieved," said Flint Councilman Kerry Nelson. "I am thrilled for this community that we reached across the aisles. We've come together."

Residents have complained of a foul smell, taste and appearance of the river water for the past year and a half, but worries heightened two weeks ago when researchers determined many Flint children were showing higher-than-expected levels of lead in their blood.

Sue McCormick, interim CEO of the Detroit water system and the regional Great Lakes Water Authority, embraced the opportunity to "provide residents with clean, safe drinking water."

Senate Minority Leader Jim Ananich, D-Flint, was more subdued.

"I view this not as a victory for our community, but as a fix that is unfortunately necessary," said Ananich, who was in Flint for the announcement.

All local schools have been using bottled water for the past two weeks, yet it's unclear how long students there may have been exposed to contamination. Eisenhower Elementary, Barnell STEM Academy and Freeman Elementary showed lead levels above the safety standards.

Since schools are not covered under federal testing guidelines, there is no baseline of previous testing information with which to compare, DEQ's Wyant said.

The Michigan Environmental Council called for even more safety measures, including testing every Flint child for lead exposure and investigating the cost and feasibility of testing all Michigan children for lead.

"Restoring the public's trust will be a long, difficult process," but the state's adoption of the group's recommendations "can begin rebuilding trust and make the best of an awful situation," Andy McGlashen, communication director of the MEC, wrote in a post on the group's website.

Snyder wants the state to cover half — $6 million — of the cost for the Detroit water. Flint will pay $2 million, and $4 million will come from the Charles Stewart Mott Foundation.

Two key legislative appropriations chairmen said Thursday that Snyder is likely to find the votes to secure the state's $6 million contribution. .

"This is a public health emergency and we need to get it done," said Rep. Al Pscholka, R-Stevensville, who chairs the House Appropriations Committee. "It probably will have to come out of two or three (state) departmental budgets, but we've got to do it."

Senate Appropriations Committee Chairman Dave Hildenbrand, R-Lowell, said fellow GOP senators have questions about whether the money would be a grant or a loan, which would be repaid. But he, too, supported the idea.

"It's in the state's best interests to ask these questions, but we have to do it quickly," Hildenbrand said. "It's a public health emergency."

$2M city payment riles rep

Flint Mayor Dayne Walling described the Detroit water reconnection as the best and fastest option to "stabilize the infrastructure system" and considered the $2 million contribution "money well spent."

But U.S. Rep. Dan Kildee, the Flint Township Democrat who represents the area, objected to the city's payment.

"Flint is a financially distressed city, and it should not have to empty out its bank account to pay for the state's failures," Kildee said.

"The decision to switch to the Flint River water source was made while the city was under state emergency management, and now it is incumbent on Gov. Snyder and the state to fix — and pay — for the problem they created."

The decision to switch to the Flint River was seen as a move to save money after years of officials and residents complaining about Detroit water rates.

Flint River water, however, has been shown to be more corrosive than the Lake Huron water provided by Detroit.

When that river water sits in lead plumbing connections, which are found in many of Flint's older houses in lower-income neighborhoods, it takes in the harmful substance.

Pressed Thursday on whether the decision to switch to the Flint River was a mistake, Snyder deflected by saying the state will put together an "after-action" report. He previously said it wasn't an error.

Detroit News Staff Writer Gary Heinlein contributed.

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http://www.mlive.com/news/flint/index.ssf/2015/10/parents_react_to_toxic_water_i.html

Flint Mayor Dayne Walling waits to speak before an announcing the city of Flint's 16 million dollar plan to switch back to Detroit water during a press conference at Mott Foundation/Commerce Center Building in Flint, Mich. on Thursday Oct. 8, 2015. (Christian Randolph/Flint Journal)

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By Dominic Adams | dadams5@mlive.com
Follow on Twitter
on October 08, 2015 at 5:16 PM, updated October 09, 2015 at 11:27 AM

When did state know about lead in Flint water? 6 takeaways from Snyder plan

Toxic water in Flint schools is 'mind-baffling,' says elementary school parent

State should pay for its own mistakes in Flint water crisis

Snyder seeking $9.35M in state aid for Flint water crisis, and Michigan lawmakers are on board

Switch from Flint River to Detroit water expected to take two weeks

All Stories

FLINT, MI — Parent Alisa Oliver was shocked to learn water tested at Freeman Elementary School had more than six times the federally allowable level of lead.

She was there Thursday, Oct. 8, to pick up one of her three children early from school.

Information that the level of lead in water far exceeded federal standards at Freeman was released earlier Thursday at a news conference in Flint, where Gov. Rick Snyder and other state and city leaders announced a plan to reconnect the city with the Detroit water supply.

"That explains the letter they sent home and why they can't drink the water," Oliver said. "It's kind of mind-baffling."

Oliver has children in first, second and fourth grades at the school.

Oliver said lead in the school's water is of extra concern for her youngest child, who had previously suffered from lead poisoning because of the lead-based paint inside a previous residence.

Oliver said she was moving to the other side of town, and her kids would be pulled from Freeman.

The school is one of three in the Flint School District that tested above 15 parts per billion for lead, the safety standard set by the federal government.

Eisenhower Elementary, along with the Brownell/Holmes STEM academies, also exceeded the limit, according to Michigan Department of Environmental Quality Director Dan Wyant.

Oliver learned from The Flint Journal that the water at Brownell/Holmes also had toxic levels of lead in its water.

"That's horrible," she said. "We really don't have a choice because where we're moving to, the closest school they already closed. We just tell them, 'Don't drink the water.'"

Flint schools stopped using city water for drinking after a study by a doctor from Hurley Medical Center showed the number of infants and children in Flint with elevated blood levels has tripled since the city started using the Flint River as its source for water.

Snyder was in Flint on Thursday, Oct. 8, along with Wyant and other state officials, to announce a plan for the city to buy nine months of water from the Detroit Water and Sewerage Department with at least $6 million coming from the state, a $4 million grant from the Charles Stewart Mott Foundation and $2 million from the city.

Water at schools was not tested for lead because federal guidelines didn't require it.

"We followed the federal requirements for water testing for the lead and copper rules," Snyder said. "There is no inclusion of schools. That'll be one of the items to talk about — should there be more testing or testing done for water quality in schools?"

The state is calling for children at the three Flint schools where lead was detected above federal guidelines to get their blood tested to see if they have elevated blood lead levels, officials said.

"Flint Community Schools believes this is a good first step; however, we urge state and local officials to act quickly," Superintendent Bilal Tawwab said in a statement. "We thank the MDEQ for making Flint Community Schools a priority."

Wyant said four of 37 water samples from 13 schools last week exceeded the 15 ppb standard.

Eisenhower had two samples, of 16 ppb and 28 ppb, while Freeman had a sample that showed 101 ppb, Wyant said. The state didn't release the lead level for Brownell/Holmes.

"The data clearly demonstrates that more detailed sampling needs to occur so that various sources of lead contamination contained within each perspective school's plumbing can be identified and addressed," Wyant said. "The data underscores the need for a complete and thorough evaluation of the plumbing in the schools to determine a corrective action plan."

The MDEQ will continue to help the Flint School District with evaluations, sampling and corrective measures, Wyant said.

"Schools should continue use of bottled water," he said.

The Michigan Department of Health and Human Services will provide eight staff toxicologists in Flint to help with data analysis of water.

There also will be free testing for any other Flint school, including day cares and Head Start facilities, state officials said.

"We are working proactively with the community and continue to ask everyone to help our students by providing bottled water and filter donations until we find a sustainable, long-term solution that can ensure our students have access to safe, clean drinking water in our schools and in their homes," Tawwab said.

Flint City Council Vice President Wantwaz Davis called on the Flint School District to close any building with water testing higher than 15 ppb of lead.

"Children's welfare is of the utmost consideration," Davis said. "I feel they should close the schools down until" more testing proves the water safe.

The Rev. Alfred Harris, president of the Concerned Pastors for Social Action, said he was shocked to hear news of the lead levels in some Flint schools.

"I'm happy, very happy" that the city will no longer use the Flint River as its drinking water source, "but I wish it would have taken place months ago," Harris said.

Melissa Mays, a founder of Water You Fighting For, a grass-roots group that has pushed for ending use of the Flint River, said the news about elementary school children drinking water with elevated levels of lead is especially troubling.

"It breaks my heart," Mays said. "That made me want to cry and throw up at the same time. Those poor kids."

Staff writer Ron Fonger contributed to this report.

Dominic Adams is a reporter for The Flint Journal. Contact him at *dadams5@mlive.com* or 810-241-8803. Follow him on *Twitter*, *Facebook* or *Google+*.

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http://michiganradio.org/post/flint-returning-detroit-water-problems-persist#stream/0

By Steve Carmody • 19 hours ago

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Flint is returning to the Detroit water system, but problems remain

Flint is going back to Detroit water.

Gov. Snyder announced the $12 million plan to hook the city of Flint back up to Detroit water

Credit Steve Carmody / Michigan Radio

The state, the city and the Charles Stewart Mott Foundation together are kicking in $12 million to shut off the tap to the Flint River.

A year and a half ago, city leaders stood in Flint's water plant and raised plastic glasses to toast the city's switch to the Flint River.

Eighteen months later, Governor Snyder has announced the end of the Flint River experiment.

"I'm in full support of a return to the Great Lakes Water Authority (formerly the DWSD)," Snyder told a mid-morning news conference in Flint, "and that we do this in a prompt and efficient fashion."

It may only take a few weeks to bring to an end what has become a failed experiment.

Since shutting off the pipeline from Detroit and tapping the Flint River for the city's drinking water, Flint residents have endured a progressively nightmarish existence every time they filled a glass from their kitchen faucet.

The cloudy water smelled and tasted bad. Then there were E. coli outbreaks. The heavy chlorination in response to those outbreaks left people with burned skin and hair falling out in clumps.

A disinfectant by-product landed the city in violation of the Safe Drinking Water Act for a year.

And then there's lead.

A Virginia Tech research team found 'serious' levels of lead in the tap water in a significant percentage of Flint homes. Other tests showed blood lead levels in Flint children have doubled since the switch.

New tests of drinking water in 13 Flint schools show 4 schools with seriously high lead levels. At one school, Freeman Elementary on the city's south side, the water tested at more than 100 parts per billion. That's more than six times the federal action level for lead.

"We are suggesting we have specialized staff go in and really track who has elevated blood levels," says Nick Lyon, the director of the Department of Health and Human Services, "You don't know the facts until you know the facts. So we're going to test these children."

Pastor Allen Overton has been a leader in the grassroots movement to return Flint to Detroit water. He listened as the governor and other officials talked about the steps being taken to quickly get Detroit water flowing to Flint again.

Overton blames Flint's mayor and other city leaders for not asking the governor for help sooner.

"If they had (brought) it to the governor before now I think he would have moved before now," says Overton, "But they were slow about getting it to the governor. So that's why I think it took so long to get to this point."

The head of Flint's public works department says it will take about two weeks to re-connect with Detroit's system.

But that doesn't end Flint's water woes.

The highly corrosive Flint River water has caused, by some estimates, tens of millions of dollars in damage to older lead and iron pipes in Flint. Lead will continue to leach into the water even after the switch to a less corrosive water source. Then there are the long-term health effects on children who have been drinking water with high levels of lead for more than a year.

Flint Mayor Dayne Walling says the city will need help repairing and replacing the city's aging and decaying water infrastructure.

He suggests other cities should pay attention to what's been happening in Flint.

"There are important lessons from Flint's experience," says Walling, "We need to take a look at federal and state policy reforms, that include expanding water safety sampling to include our most vulnerable families."

"We need to look at factors of affordability in public health and infrastructure all being assessed together," Flint's mayor adds.

The governor says he's asking the Michigan legislature for half the expected 12 million dollar cost of getting Flint hooked back up to Detroit water. That's until next year, when a new pipeline from Lake Huron is expected to be ready. The Mott Foundation is kicking in four million dollars and the city will come up with two million dollars.

This experiment that was supposed to save millions of dollars will most certainly will end up costing the city and the state dearly.

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http://www.mlive.com/opinion/flint/index.ssf/2015/10/editorial_flint_water_slap_in.html

Flint Mayor Dayne Walling waits to speak before an announcing the city of Flint's 16 million dollar plan to switch back to Detroit water during a press conference at Mott Foundation/Commerce Center Building in Flint, Mich. on Thursday Oct. 8, 2015. (Christian Randolph/Flint Journal)

Christian Randolph | crandolp@mlive.com

Print Email

By MLive/Flint Journal opinion
on October 08, 2015 at 4:00 PM, updated October 08, 2015 at 4:01 PM When did state know about lead in Flint water? 6 takeaways from Snyder plan

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Switch from Flint River to Detroit water expected to take two weeks

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The following is an opinion of The Flint Journal Editorial Board.

Another slap in the face.

Today's long overdue announcement that Flint will reconnect to the Detroit system is welcome relief in what has become a deluge of bad news when it comes to Flint water.

But rather than apologize for a public health emergency that was created on the watch of a state-appointed emergency financial manager, Gov. Rick Snyder came to Flint and told the city that it will have to help pay for his administration's mistake.

To the tune of $2 million.

Asking Flint residents to sacrifice money the city doesn't have to fix a failure by the state is an outrage.

And the bill for Flint's people would likely have been even larger if the C.S. Mott Foundation had not come to the rescue with the promise of another $4 million for the water switch.

Sorry, Governor, but you assumed responsibility for Flint two years ago when you declared the city unfit to manage itself and wrested local control from our leaders.

The city didn't ask to be taken over — you took it.

State-appointed leaders gambled with the safety of our drinking water in order to save money.

And when push came to shove, state-appointed leaders gambled with the safety of our drinking water in order to save money.

Under your latest plan, the state will contribute $6 million to a fix which everyone agrees may not even work in the end.

We have yet to hear a definitive guarantee that a move back to Detroit water will lower lead levels in the water and, given the state's track record so far, residents would be wise to reserve judgment even if such guarantees were made.

At the same time they announced the switch back to Detroit, Snyder and his administration revealed that lead problems at Flint schools may be worse than anyone thought.

Rather than make Flint pay, Snyder should find the money elsewhere and allow the city to invest that $2 million in its aging infrastructure.

Flint has already paid the price, Governor, by drinking toxic water that was forced upon the city, and the most frightening thing is we have no idea how many of the city's children will continue to pay that price in the form of long-term health problems.

Flint is done paying for your mistake, Gov. Snyder.

It's your turn to pay.

Read more Flint Journal *editorials here*.

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http://epnewswire.com/stories/510641420-michigan-announces-action-plan-for-lead-levels-in-flint-s-drinking-water

Thursday, Oct 8, 2015 @ 6:46pm By EP News Wire Reports

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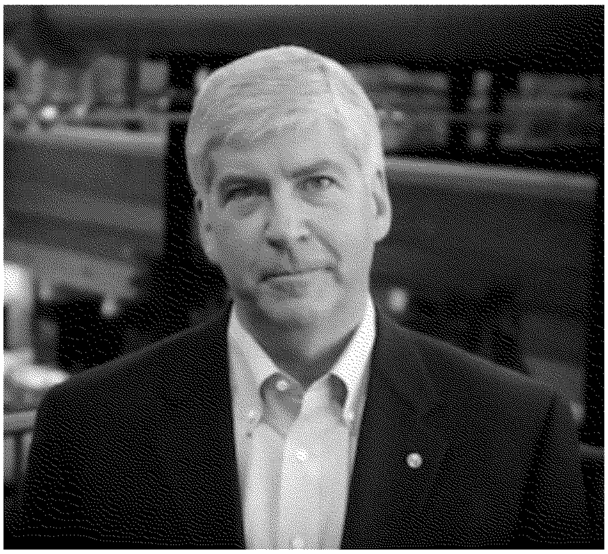

Michigan Gov. Rick Snyder announced a comprehensive action plan to address drinking water quality issues in Flint on Oct. 2.

The plan addresses issues that include excess lead in some residents' tap water due to older plumbing.

“We are focused on helping ensure safe, clean, accessible drinking water and addressing and mitigating concerns and protecting public health,” Snyder said. “Today’s action plan builds upon ongoing work with local, state and federal agencies and our partnership with city and community leaders. Together, we are working to ensure that all Flint residents have accurate information and know that help is available to address potential problems.”

The plan was developed with federal, state and city leaders and includes measures that include immediate testing of the public school drinking water and providing free water and free water filters to the city’s residents. These measures are critical, as the state has seen an increase in childhood blood lead levels in the community, according to the Michigan Department of Health and Human Services (MDHHS).

“While we cannot conclusively say that the water source change is the sole cause of the increase, this analysis supports our efforts as we take active steps to reduce all potential lead exposures in Flint,” MDHHS Director Nick Lyon said. “As part of this, we are working closely with our public and private partners to provide Flint residents on MDHHS assistance programs with free water filters and inform families about the steps they can take to reduce all lead exposures in their home."

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http://epnewswire.com/stories/510641840-michigan-governor-calls-for-funding-to-improve-flint-drinking-water

Thursday, Oct 8, 2015 @ 3:03pm By EP News Wire Reports

0 0 0 New

Michigan Gov. Rick Snyder announced Thursday that he is requesting the state legislature to contribute $6 million (USD) to the reconnection of Flint with the Great Lakes Water Authority until the Karegnondi Water Authority (KWA) pipeline is completed, with Flint and the Charles Stewart Mott Foundation providing the remaining $6 million.

"All Flint residents need clean, safe drinking water," Snyder said. "The technical experts helping the city on its water advisory all agree this move back to the Great Lakes Water Authority provides the best public health protection for children and families. This effort today is the result of people coming together to solve a problem."

Providing protection from the effects of runoff issues and already established corrosion control methods, reconnection to Detroit's water system will benefit Flint's public health, but it will not completely resolve drinking water issues, which are caused in some instances by aging infrastructure and home pipes and plumbing.

"Reconnecting to Detroit is the fastest way to deliver clean, safe water to Flint and stabilize the infrastructure system," Flint Mayor Dayne Walling said. "I appreciate the state, the Mott Foundation, Detroit and the county's participation in a solution for Flint's water problems. The health and safety of Flint's families, children and seniors is my top priority, and reconnecting to Detroit is a major step that the city could not take alone given budget constraints."

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http://www.hollandsentinel.com/article/20151009/NEWS/151009201

Holland, Mich.

This weekend I was able to attend the MEA, Michigan Education Association, Fall RA, Representative Assembly, in our state's capitol. This being my second such meeting I was much more aware of what the procedures and norms were in terms of voting. There was, however, one incident that I never, ever thought I would hear or see in my lifetime. Two teachers from the Flint area got up to the microphone and made an impassioned plea for money to buy bottled water for children living in Flint, Mich. They passed around a few envelopes to collect these funds. At the end of the day the tally was over $680 for water for Flint's children.

Our state is the "water wonderland." A very appropriate name, at that. We have the blessing of having frontage on four of the five Great Lakes. We have numerous smaller lakes. Holland water is reputedly some of the best in the Great Lakes regions. Thanks, BPW!

Our church special offering for next week goes to our missionaries in Hungary, the Ottenwesses. Their church, which primarily caters to the Roma (gypsies), is near a rail line that recently has seen the huge influx of Syrian refugees fleeing their nation's civil war. That I can understand. But having to pass the hat for clean drinking water for residents of our very own state? Incredible. Unacceptable, too.

Maybe the Mackinac Center, their minions in our state legislature and the Nerd should take a little more interest in this situation and put union busting and right to starve legislation on the back burner long enough to ensure the good people of Flint a safe, potable water supply. Apparently in this case there are many children being left behind! I am really not sure how this is supposed to help their almighty standardized testing scores. This is a disgrace to our state and our citizens. At least Mrs. Gamrat and her beau are out of the picture and these "leaders" can now get back to what they should be doing. Leading and helping their constituents.

Jeff Raywood

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http://america.aljazeera.com/articles/2015/10/8/the-fight-for-clean-water-in-flint-michigan.html

It's not the government but private citizens and researchers who have been battling to reveal dangerous lead levels

October 8, 2015 1:00PM ET

by Azure Gilman @azuregilman

Officials declared a public health emergency this month for Flint, Michigan, advising residents not to use the city’s tap water without filtering after studies showed elevated lead levels in the water — and in children’s blood.

But it was a handful of citizen activists and independent researchers who finally got the danger acknowledged, even as some officials denied there was a problem.

High levels of lead found in Flint drinking water 3:40

Al Jazeera America News | October 6, 2015

At a press conference on Thursday morning, Michigan governor Rick Snyder announced that after meeting with a technical advisory council, he was in full support of Flint returning to the Great Lakes Water Authority, from which the city previously got its water. Snyder said that the change would cost $12 million, and that he would ask the Michigan legislature to provide $6 million towards that cost. The Mott Foundation has said that they will cover $4 million, and the City of Flint will provide $2 million.

In April 2014, economically battered Flint switched its water source from Lake Huron to the less-expensive Flint River. Researchers at Virginia Tech say the new water is more corrosive and is leaching lead from pipes into the drinking water**.** After the switch, the number of children with elevated lead levels rose to 4 percent in 2015, from 2.1 percent in 2013, according to a study by a pediatrician at Hurley Medical Center in Flint. In some areas, that number rose as high as 6.3 percent from 2.5 percent.

One of the residents to raise an early alarm was LeeAnne Walters, after her 4-year-old son Gavin started breaking out in rashes in July 2014. He had to take Benadryl every time he took a bath, and Gavin was diagnosed with lead poisoning in April of 2015, Walters said.

The City of Flint, along with the Michigan Department of Environmental Quality (MDEQ), tested the water in Walters’ home and found elevated lead levels. But Walters said that the city government denied anything was wrong with Flint’s water.

“They went around and had meetings telling everyone that the problem was specific to my home due to my internal plumbing,” Walters said. "It’s infuriating. You're paying to be poisoned. And you're paying for this, and you're being called a liar and stupid by the emergency manager and the DEQ in a public meeting."

The MDEQ said Walters “had an unusually long lead service line, which appears to have contributed to her situation. However, this question is better addressed by the city.” The City of Flint had not responded to a request for comment at the time of publication.

Flint Mayor Dayne Walling drank tap water on TV in July 2015 in an attempt to ease residents’ concerns. He said that he and his family drink the city’s water every day.

The City of Flint and the MDEQ tested the water after the switch to the Flint River, and said it was fine. But there were problems with those tests, residents and researchers said.

The MDEQ lowered the number of samples required to 60 from 100, according to Marc Edwards, who lead the water testing research team at Virginia Tech, and Curt Guyette, an investigative reporter with the American Civil Liberties Union of Michigan. A spokesman for the MDEQ, Brad Wurfel, said that the sample requirements are based on population, and that the requirement was lowered because new census data showed Flint's population had dropped below 100,000. He also cited difficulty in getting enough people to send in water sample kits for testing. "Participation has historically been a well-documented challenge in Flint," he said.

In a report [PDF] obtained through a Freedom of Information Act request, the City of Flint said that the homes they tested had lead pipes. But when Guyette confronted officials in September 2015 about how they were able to determine that every house tested had lead service lines, which run under city streets, a utilities administrator for the City of Flint said on camera: "We're not, really. We threw bottles out everywhere just to collect as many as we can to try to hit our number." He was referring to bottles used to collect water samples, and the number of homes they were required to sample.

"In essence they did their testing, and they got high lead, even though they didn't look at the homes they were supposed to," Edwards said. "They were supposed to look at homes with lead pipes, and they just randomly sent bottles out, which would make lead look lower than it is."

In late April of this year, LeeAnne Walters called Edwards, who said he then tested her water independently. In one sample, he said he found that she had lead levels of 13,200 parts per billion. The EPA allows a lead level of 15 parts per billion in tap water.

Along with fellow Flint resident Melissa Mays, Walters started an advocacy group called Water You Fighting For? Together with the ACLU of Michigan, Concerned Pastors for Social Action, and the Democracy Defense League, the activists helped get Edwards to come to Flint and conduct an independent analysis of the water.

Edwards said he paid for over $40,000 worth of testing out of his own pocket. He eventually got funding from the National Science Foundation to cover the cost. He said he sent water test kits to hundreds of homes, expecting to get 25 percent of the kits returned. But Water You Fighting For? and the other activist groups helped promote and organize the testing, and 90 percent came back.

"Achieving a 90 percent return rate was something I never thought possible," said Edwards.

Meanwhile, Dr. Mona Hanna-Attisha at Hurley Medical Center did her own study of blood lead levels in the children of Flint, and announced the results on Sept. 24. The study was not requested by the city or the state. Rather, Hanna-Attisha said she had heard from a friend at a dinner party that Flint had water problems. When she asked someone from Genesee County Health Department about it, she said she was told that that the department didn't control water.

"That's when I started my crusade," she said.

The long-term repercussions of Flint's water problems could be devastating. The U.S. Centers for Disease Control and Prevention says that lead exposure in children is "particularly harmful to the developing brain," and is associated with decreased intelligence, among many other symptoms. Hanna-Attisha said that Flint children could have long-term problems because of early lead poisoning.

"In five years there's going to be more kids who need early intervention and special education," Hanna-Attisha said. "And in 15 to 20 years, there may be more kids that are going to be in the criminal justice system. The costs are tremendous… a whole generation of kids."

As late as Sept. 28, The Associated Press quoted MDEQ spokesman Brad Wurfel as saying, "Flint's drinking water is safe in that it's meeting state and federal standards."

In response to questions from Al Jazeera, Wurfel said that "the city, the state and the U.S. EPA are taking necessary steps to address lead concerns in Flint. Free lead filters for all Flint residents are a precautionary step to ensure public health while we look more closely at exposure concerns."

Virginia Tech water expert Edwards said he is ashamed that Flint's water situation was allowed to happen in the United States. "I shudder to think what would have happened if the residents hadn't figured this out," Edwards said. "Because the kids would still be drinking this lead water, being encouraged to drink this lead water when it was not safe."

With The Associated Press

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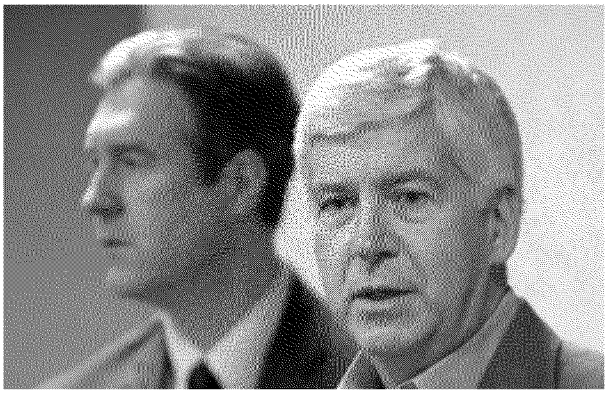
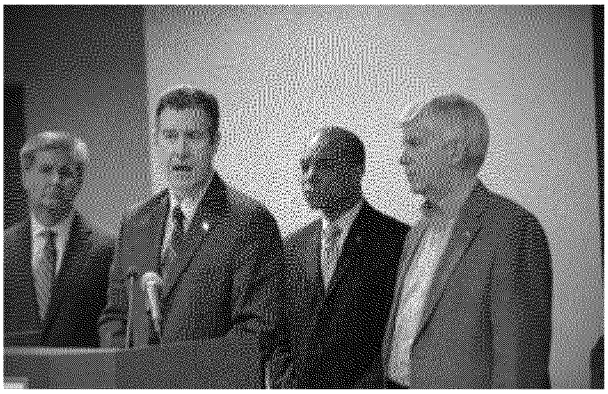
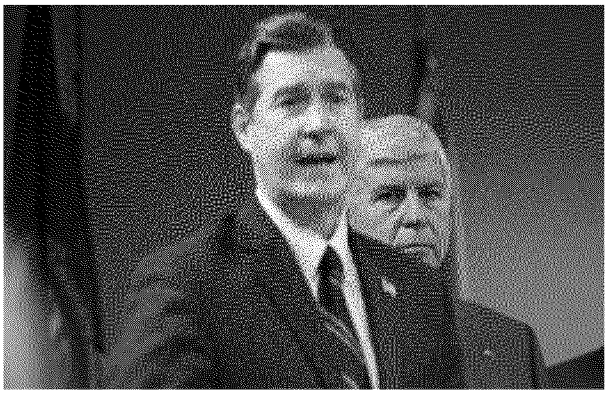
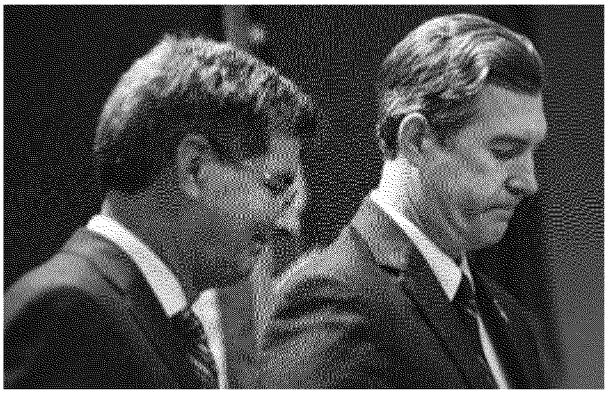
http://www.seattletimes.com/nation-world/governor-urges-switch-to-fix-flint-mich-corrosive-drinking-water/

Originally published October 8, 2015 at 11:24 am Updated October 8, 2015 at 3:31 pm









1 of 5 Mich. Gov. Rick Snyder announces support in the city of Flint’s plan to switch back to

Detroit water due to high lead levels during a news conference in Flint, Mich. on Thursday Oct. 8, 2015. Flint stopped using water from the... More

By JEFF KAROUB

DAVID EGGERT

The Associated Press

FLINT, Mich. (AP) — Michigan Gov. Rick Snyder on Thursday called for Flint to switch back to Detroit's water system to address a public health emergency over lead and grapple with broader concerns about the effects of the aging pipes distributing the city's water supply.

Flint stopped using water from the Detroit system last year as a cost-cutting measure, opting instead for a supply direct from the Flint River. But since the swap, residents have complained of the water's funky smell, taste and appearance, as well as adverse health reactions, and doctors discovered that the corrosive river water was drawing lead from aging pipes in some homes.

The governor announced he would ask state lawmakers for $9.3 million, including half of the $12 million needed to reconnect Flint to Detroit's system through next summer. Then the city would transition to a new regional water authority drawing water from Lake Huron.

Snyder said Flint would provide $2 million and the Charles Stewart Mott Foundation, which has supported local institutions and organizations for decades, has committed $4 million.

"It will be better for the citizens of Flint, in terms of public safety, which is our paramount concern," he said at a news conference at the foundation's office in Flint.

It is the "fastest way to protect public health and stabilize Flint's water system," Flint Mayor Dayne Walling said, adding that the city should be reconnected to Detroit's system within about two weeks.

Leaders in the Republican-controlled Legislature signaled a willingness to help.

"There's an immediate public threat that we have to take seriously and address. We just have to figure it out," said Senate Appropriations Committee Chairman Dave Hildenbrand, R-Lowell.

The announcement came a day after experts in health, water and science recommended that Flint reconnect to Detroit's water system while it awaits a new pipeline to Lake Huron.

The Snyder administration released results from a lead-screening program in schools and homes. Of 37 samples at 13 school buildings, four samples spread over three buildings exceeded the federal action level of 15 parts per billion. One school was flagged at more than six times the limit.

Flint is under a public health emergency due to lead in the water supply. Exposure to lead can cause behavior problems and learning disabilities in young children.

Flint, which was under state emergency management when it switched water supply, had long chafed at the Detroit Water & Sewerage Department's rising prices. Flint officials estimated the cost of buying water from Detroit this year at $16 million, and the overall annual cost of switching to the new Karegnondi Water Authority would be $12.5 million.

Snyder said switching back to Detroit is the best short-term solution, but the "long-term, real question is about lead pipes and lead service lines." He said the state is working with the U.S. Environmental Protection Agency on how to improve and expand its lead and copper testing in school water supplies — something not currently required by the federal government.

"That needs to be a broader discussion," Snyder said. "We still need to have a discussion about infrastructure."

State government and nonprofit groups have been distributing filters and bottled water to Flint homes and schools.

Snyder also said he would ask legislators for more than $3.3 million for filters, free lead testing and additional staff to conduct health exposure monitoring for lead in drinking water. His administration previously had committed nearly $1.3 million separate from the legislative spending process.

Flint Councilman Eric Mays, who has been a vocal critic of decisions related to the water system, welcomed the developments but questioned how long it took and how much more money would be needed. He credited local activists, some of whom have been raising concerns about lead for months.

"I thank a lot of people for coming out — a little late — but it's better late than never," he said.

Flint resident A.C. Dumas said he's upset with how things have been handled.

"I feel betrayed," he said. "I feel that the elderly and the children, all of us feel betrayed."

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Associated Press writer Mike Householder contributed to this story. Eggert contributed from Lansing, Michigan.

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To: Hedman, Susan[hedman.susan@epa.gov]; Hyde, Tinka[hyde.tinka@epa.gov]
Cc: Kelley, Jeff[kelley.jeff@epa.gov]
From: Rowan, Anne
Sent: Fri 10/9/2015 5:05:02 PM
Subject: Follow up questions from Detroit Freep - deadline this afternoon

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From: Wisely, John [mailto:jwisely@freepress.com]
Sent: Friday, October 09, 2015 11:27 AM
To: Cassell, Peter
Subject: RE: U.S. EPA comment on state of Michigan and city of Flint press conference on Oct. 8, 2015

Peter:

Thanks for sending. I know this is sensitive topic but I have to ask a follow up question.
In those July discussion, did EPA recommend, request, demand that additional corrosion control measures be taken?
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"EPA did not transmit the draft report to anyone on the cc list. EPA discussed the issues raised in the report with MDEQ in July."

Thanks. Let me know if you have any other questions.

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To: Rowan, Anne[rowan.anne@epa.gov]; Hyde, Tinka[hyde.tinka@epa.gov]
Cc: Kelley, Jeff[kelley.jeff@epa.gov]
From: Hedman, Susan
Sent: Fri 10/9/2015 6:06:57 PM
Subject: RE: Follow up questions from Detroit Freep - deadline this afternoon

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From: Rowan, Anne
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Subject: RE: Follow up questions from Detroit Freep - deadline this afternoon

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Cc: Kelley, Jeff[kelley.jeff@epa.gov]; Henry, Timothy[henry.timothy@epa.gov]
From: Hyde, Tinka
Sent: Fri 10/9/2015 6:45:30 PM
Subject: RE: Follow up questions from Detroit Freep - deadline this afternoon

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Sent: Friday, October 09, 2015 1:22 PM
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From: Hedman, Susan
Sent: Fri 10/9/2015 7:01:39 PM
Subject: RE: Follow up questions from Detroit Freep - deadline this afternoon

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Cc: Kelley, Jeff; Henry, Timothy
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Cc: Kelley, Jeff[kelley.jeff@epa.gov]; Henry, Timothy[henry.timothy@epa.gov]
From: Hedman, Susan
Sent: Fri 10/9/2015 7:02:17 PM
Subject: RE: Follow up questions from Detroit Freep - deadline this afternoon

Just saw Tom Poy's e-mail -- we should hold off.

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From: Hedman, Susan
Sent: Friday, October 09, 2015 2:02 PM
To: Hyde, Tinka; Rowan, Anne
Cc: Kelley, Jeff; Henry, Timothy
Subject: RE: Follow up questions from Detroit Freep - deadline this afternoon

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From: Hedman, Susan
Sent: Fri 10/9/2015 7:03:32 PM
Subject: RE: Follow up questions from Detroit Freep - deadline this afternoon

It looks like Tom Poy is addressing a different question -- please go ahead with this one.

-----Original Message-----
From: Hedman, Susan
Sent: Friday, October 09, 2015 2:02 PM
To: Hyde, Tinka; Rowan, Anne
Cc: Kelley, Jeff; Henry, Timothy
Subject: RE: Follow up questions from Detroit Freep - deadline this afternoon

Just saw Tom Poy's e-mail -- we should hold off.

-----Original Message-----
From: Hedman, Susan
Sent: Friday, October 09, 2015 2:02 PM
To: Hyde, Tinka; Rowan, Anne
Cc: Kelley, Jeff; Henry, Timothy
Subject: RE: Follow up questions from Detroit Freep - deadline this afternoon

Let's say: Yes. US EPA recommended corrosion control and MDEQ agreed with our recommendation -- and subsequently sent a letter to the City of Flint on 8/17.

-----Original Message-----
From: Hyde, Tinka
Sent: Friday, October 09, 2015 1:45 PM
To: Rowan, Anne; Hedman, Susan
Cc: Kelley, Jeff; Henry, Timothy
Subject: RE: Follow up questions from Detroit Freep - deadline this afternoon

Yes we recommended that they require corrosion control and MDEQ agreed with our recommendation and subsequently sent the letter on 8/17.

-----Original Message-----
From: Rowan, Anne
Sent: Friday, October 09, 2015 1:22 PM
To: Hedman, Susan; Hyde, Tinka
Cc: Kelley, Jeff
Subject: RE: Follow up questions from Detroit Freep - deadline this afternoon

I'll defer to Tinka. But it may be better to simply reference MDEQ's 8/17/15 letter to Flint -- and have the reporter obtain it from either the State or the City (unless EPA is cc'd on the letter?) ... I don't have it myself so we'd need to get from Water Division if we are going to attach it.

Anne Rowan, Chief
Public Affairs Section
Office of External Communications
U.S. EPA Region 5, Chicago
rowan.anne@epa.gov
312-353-9391

-----Original Message-----

From: Hedman, Susan
Sent: Friday, October 09, 2015 1:07 PM
To: Rowan, Anne; Hyde, Tinka
Cc: Kelley, Jeff
Subject: RE: Follow up questions from Detroit Freep - deadline this afternoon

Should we say: "Yes -- and as a result of those discussions MDEQ sent the attached letter to the City of Flint." OR "Yes -- and MDEQ subsequently sent the attached letter to the City of Flint." (and then attach the 8/17/15 letter)

-----Original Message-----
From: Rowan, Anne
Sent: Friday, October 09, 2015 12:05 PM
To: Hedman, Susan; Hyde, Tinka
Cc: Kelley, Jeff
Subject: Follow up questions from Detroit Freep - deadline this afternoon

---Original Message-----
From: Wisely, John [mailto:jwisely@freepress.com]
Sent: Friday, October 09, 2015 11:27 AM
To: Cassell, Peter
Subject: RE: U.S. EPA comment on state of Michigan and city of Flint press conference on Oct. 8, 2015

Peter:

Thanks for sending. I know this is sensitive topic but I have to ask a follow up question.
In those July discussion, did EPA recommend, request, demand that additional corrosion control measures be taken?
As you know, there's a lot of discussion about what happened here and we're trying to understand what was communicated, in what form, at what time.
I'm trying to wrap this up today, so I'd need an answer this afternoon.
Again, thanks.
John

-----Original Message-----
From: Cassell, Peter [mailto:cassell.peter@epa.gov]
Sent: Friday, October 09, 2015 9:58 AM
To: Wisely, John <jwisely@freepress.com>
Subject: Re: U.S. EPA comment on state of Michigan and city of Flint press conference on Oct. 8, 2015

The below statement is from the EPA. You may attribute this statement only to an EPA spokesperson or EPA.

"EPA did not transmit the draft report to anyone on the cc list. EPA discussed the issues raised in the report with MDEQ in July."

Thanks. Let me know if you have any other questions.

P

Sent from my iPhone

> On Oct 8, 2015, at 4:47 PM, Wisely, John <jwisely@freepress.com> wrote:
>
> Thanks Peter.
> One additional question, which I need for a weekend story.

> Attached is a memo from Miguel Del Toral in June. The Michigan DEQ people say they never received it, despite several of their staffer's names appearing in the cc'd line.
> Can you check and see if the memo was ever sent to them?
> They seem to be saying it was a draft that was never sent to them.
> I'd appreciate it.
>
> From: Cassell, Peter [mailto:cassell.peter@epa.gov]
> Sent: Thursday, October 08, 2015 5:44 PM
> To: Cassell, Peter <cassell.peter@epa.gov>
> Cc: Rowan, Anne <rowan.anne@epa.gov>; Kelley, Jeff <kelley.jeff@epa.gov>; Peterson, John <peterson.john@epa.gov>; Arcaute, Francisco <Arcaute.Francisco@epa.gov>; Singer, Joshua <Singer.Joshua@epa.gov>
> Subject: U.S. EPA comment on state of Michigan and city of Flint press conference on Oct. 8, 2015
>
> The statement below can be attributed to U.S. EPA Region 5 Administrator Susan Hedman:
>
> "U.S. EPA will continue to provide technical assistance to the state of Michigan and the city of Flint to support their joint effort to supply drinking water from the Great Lakes Water Authority to Flint residents. U.S. EPA will also provide technical assistance during the transition to the new Karegnondi Water Authority next year."
> Thanks!
> ____
>
> Pete Cassell
> Press Officer
> U.S. Environmental Protection Agency
> ____
>
> 77 West Jackson Blvd (P-19J)
> Chicago, IL 60604-3590
> Office (312) 886-6234<tel:%28312%29%20886-6234>
> Mobile (312) 859-9614<tel:%28312%29%20859-9614>
> ____
>
> < • EPA□ Interim Report.pdf>

To: Poy, Thomas[poy.thomas@epa.gov]; Bair, Rita[bair.rita@epa.gov]; Damato, Nicholas[damato.nicholas@epa.gov]; Glowacki, Joanna[glowacki.joanna@epa.gov]
Cc: Shoven, Heather[shoven.heather@epa.gov]; Porter, Andrea[porter.andrea@epa.gov]; Crooks, Jennifer[crooks.jennifer@epa.gov]
From: Deltoral, Miguel
Sent: Tue 10/13/2015 12:43:36 PM
Subject: New Flint Articles and Suggested Edits to OCCT letters
DRAFT Letter to MDEQ Re Flint and LCR Implementation v9-30-15 mdt.doc
DRAFT Letter to R5 States Regarding LCR OCCT Requirements v9-30-15 mdt.docx

Hi Tom,

Here are the latest articles out of Flint. Of particular note is the sentiment from residents regarding the trustworthiness of statements made by State and local elected officials in the first link below starting at 3:33. I am stressing this particular section of the podcast because one of the statements that DEQ keeps making is that according to the EPA rules the LCR requires two rounds of testing and if the results are over 5 ppb, they have to put in treatment. This is a misleading statement and I want to make sure that what we send is not inadvertently providing support for those types of statements. It should be unambiguously clear what the requirements were then and are now.

As I explained in the material that has been sent to OGWDW, that criteria only applied way back in 1991 when the requirements first kicked in. Flint did not meet the 5 ppb criteria back then and the city was required to complete the installation of treatment by January 1, 1997. At that point, that criteria is no longer applicable. The requirements that became applicable to Flint after the installation of treatment (i.e., starting in 1998) were:

- Flint must continue to operate and maintain the treatment;
- MDEQ must designate optimal water quality parameters; and
- Flint must operate in compliance with the state-designated OWQPs.

Since DEQ keeps making incorrect statements on this point, I recommend that we make some changes to the letters we are sending to MDEQ and the R5 States to clarify the timeline (see attached).

Recent Flint Articles

Oct 12: Living through the Flint water crisis http://michiganradio.org/post/living-through-flint-water-crisis#stream/0

Oct 12: Lawmaker's lawsuit claims Flint, state withheld documents on water safety

http://www.mlive.com/news/flint/index.ssf/2015/10/lawmakers_lawsuit_claims_flint.html

Oct 12: Sorry seems to be the hardest word for the state to say to Flint

http://www.mlive.com/news/flint/index.ssf/2015/10/sorry_seems_to_be_the_hardest.html#incart_story_

Oct. 12: Flint doctor makes state see light about lead in water

http://www.freep.com/story/news/local/michigan/2015/10/10/hanna-attisha-profile/73600120/

Oct 12: Flint City Council OKs $2 million for reconnection to Detroit water

http://www.mlive.com/news/flint/index.ssf/2015/10/flint_city_council_oks_2_milli.html

Oct 12: General Motors plant won't use Flint water until KWA pipeline complete

http://www.mlive.com/news/flint/index.ssf/2015/10/gm.html#incart_story_package

Oct 10: Why are lead levels in children higher in 2 Flint ZIP codes?

http://www.freep.com/story/news/local/michigan/2015/10/10/lead-danger-basics/73683934/

Miguel A. Del Toral
Regulations Manager
U.S. EPA R5 GWDWB

77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

WG-15J

#1: Draft letter to be sent to EACH R5 state individually with OGWDW Memo. This is a draft example to MDEQ.

Ms. Liane Shekter Smith
Chief, Office of Drinking Water and Municipal Assistance
Michigan Department of Environmental Quality
525 West Allegan Street
P.O. Box 30473
Lansing, Michigan 48909-7973

Re: Optimal Corrosion Control Treatment Requirements for Large Systems

Dear Ms. Shekter Smith:

We are writing to transmit the enclosed U.S. Environmental Protection Agency memorandum, which was issued by EPA's Office of Ground Water and Drinking Water to Region 5. This information is being sent to each Region 5 State Director.

DRAFT

Attorney Client / Ex. 5

Attorney Client / Ex. 5

Should you have any questions regarding OCCT requirements for large PWSs, please feel free to contact me at (312) 886-5991, or poy.thomas@epa.gov.

Sincerely,

Thomas Poy
Chief, Ground Water and Drinking Water Branch

Enclosure

DRAFT

cc: (Via email)
State LCR Contact?
SPM?

bcc: Nick Damato
Rita Bair
Heather Shoven
Tom Murphy
Joanna Glowacki
Carol DeMarco King

DRAFT

To: Kelley, Jeff[kelley.jeff@epa.gov]; Hedman, Susan[hedman.susan@epa.gov]; Kaplan, Robert[kaplan.robert@epa.gov]; Hyde, Tinka[hyde.tinka@epa.gov]
Cc: Rowan, Anne[rowan.anne@epa.gov]; Beckmann, Ronna Erin[beckmann.ronna@epa.gov]; Harrison, Melissa[Harrison.Melissa@epa.gov]; Abrams, Dan[Abrams.Dan@epa.gov]; Poy, Thomas[poy.thomas@epa.gov]; Fortin, Denise[Fortin.Denise@epa.gov]; Deamer, Eileen[deamer.eileen@epa.gov]; Singer, Joshua[Singer.Joshua@epa.gov]; Arcaute, Francisco[Arcaute.Francisco@epa.gov]; Peterson, John[peterson.john@epa.gov]; Loop, Travis[Loop.Travis@epa.gov]
From: Cassell, Peter
Sent: Tue 10/13/2015 4:43:39 PM
Subject: Flint Clips Weekend and Oct. 13

FLINT DRINKING WATER CLIPS

US. EPA REGION 5 – AS PREPARED BY PETER CASSELL *(ORA/OEC/PA)* ON OCT. 13, 2015

- Flint: The Cheapskate City That Poisoned Its Children (Newsweek)
- Michael Moore says governor took over Flint, made citizens drink sewage (MLive)
- Flint City Council OKs $2 million for reconnection to Detroit water (MLive)
- Flint, MI: The Making of A U.S. Sacrifice Zone (Opednews.com)
- Accountability needed in Flint water crisis (Detroit Free Press Op-ed)
- Chemical testing could have predicted Flint's water crisis (Detroit Free Press)
- Q & A on Flint's water troubles (Detroit Free Press)
- Flint doctor makes state see light about lead in water (Detroit Free Press)
- Trust needed for Flint to rebound from water crisis, say those who know (MLive)
- State under mounting scrutiny for Flint's water crisis (Detroit News)
- Residents, ACLU ask EPA to Take Action on Flint Water (Dispatch Times)
- Lawmaker's lawsuit claims Flint, state withheld documents on water safety (MLive)

Flint: The Cheapskate City That Poisoned Its Children (Newsweek)

http://www.newsweek.com/flint-cheapskate-city-poisoned-its-children-381717

BY ROBERT D. MORRIS 10/12/15 AT 5:46 PM

In the winter of 2014, the city of Flint, Michigan, decided to change its water source to the Flint River. Almost two years later, Flint has discovered that, by saving money, its was poisoning the city"s children. EDUARDO MUNOZ/REUTERS

FILED UNDER: Opinion, Water, Michigan

The city of Flint, Michigan, has just learned a hard and tragic lesson about the value of clean water.

In the winter of 2014, after years of escalating prices for the water it was purchasing from the Detroit drinking water system, Flint decided to change its water source to the Flint River.

It made this decision despite the fact that the Michigan Department of Environmental Quality had classified the Flint River source water intake as having “a very high susceptibility to potential contaminant sources”, its worst rating.

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Almost two years later, Flint has discovered that, by saving money, it was poisoning the city"s children.

The roots of this crisis are as old as plumbing itself. Over 2,000 years ago, the*plumberii* (literally, lead workers) of the Roman Empire began to lay pipes of lead to carry water because this soft metal doesn"t rust and is easy to work.

Until 1986 when it was finally banned, lead pipes and lead solder could be found routinely in every major city in the United States connecting homes to drinking water mains, particularly in older cities, such as Flint.

The problem begins when corrosive water enters these pipes and dissolves the lead. One of the most important contributors to this corrosion is simple salt and, every winter, immense quantities of salt are spread on the Michigan roads, some of which finds its way into the Flint River.

After switching to the Flint River for its drinking water, the city tested for lead, taking over a hundred samples throughout the city. Oddly, it chose to test only in the summer and fall, not a time of year likely to reveal the impact of road salt.

These tests did not show elevations in lead levels in water. Subsequent tests have found lead in drinking water at up to six times the allowable levels.

When lead enters children''s bodies, it poisons their brains, bones and kidneys. Unlike road salt, lead and its effects do not go away in the summer.

As a result, the city ultimately used its children''s blood to test for lead in their drinking water. When recent tests revealed a doubling in the number of children with dangerous levels of lead in their blood, the city finally stopped using the Flint River.

According to a model developed by the world''s top lead researchers in 2005, the observed rise in lead levels would, on average, shave a point off the IQ of every child in Flint. The lifetime loss of income alone for the approximately 25,000 children living in Flint would be roughly half a billion dollars. This number does not account for neurologic disorders, adult hypertension, heart disease, stroke, kidney malfunction, elevated blood pressure and osteoporosis—all of which are also associated with lead.

As a society, we have forgotten what it means not to have clean water. Nothing is more essential to life and nothing is more undervalued in a modern society. As Flint struggles to deal with the nightmare of a city with no access to clean water, as its people scramble to find bottled water and to install filters in their homes to remove the lead, it is relearning this painful and costly lesson.

Like Flint, cities around the world, faced with growing populations, contaminated watersheds and water supplies made increasingly unpredictable by climate change, are searching for new sources of drinking water.

They would all be wise to study the disaster unfolding in Flint.

Robert D. Morris is an environmental epidemiologist and the senior medical adviser to the Environmental Health Trust and a leading researcher in the field of drinking water and health. He has taught at Tufts University School of Medicine, Harvard University School of Public Health and the Medical College of Wisconsin and has served as an adviser to the Environmental Protection Agency, Centers for Disease Control and Prevention, National Institutes of Health and the President's Cancer Panel. He is also the author of the book, The Blue Death *(HarperCollins), that depicts natural and man-made hazards present in the water we drink.*

Michael Moore says governor took over Flint, made citizens drink sewage (MLive)

http://www.mlive.com/news/flint/index.ssf/2015/10/michael_mo

Flint Mayor Dayne Walling thinks before speaking as he addresses media questions about the two-week target for switching Flint's water source back to Detroit during a press conference on Monday, Oct. 12, 2015 at City Hall in Flint. Jake May | MLive.com

Jake May | jmay2@mlive.com

PrintEmail

By **Ron Fong | rfong** on Oct 12, 201 at 2:11 PM, upd 12, 2015 at 7:02 PM

Michael Moore

FLINT, MI -- Filmmaker Michael Moore hasn't said much about Flint's water crisis but he made it clear where he thinks the blames lies in a **Twitter message** Sunday, Oct. 11.

"Republican governor took over the city and then made its citizens drink their own sewage from the Flint River ..., " Moore said in his tweet.

The Flint native posted his message in response to a **Detroit News story** about Flint's problem drinking water. The story quotes a Flint resident as saying her water looked "like urine," smelled "like the sewer."

Last week, Gov. Rick Snyder announced a plan to reconnect Flint to the Detroit water system after testing by Virginia Tech university showed a serious problem with lead in water here.

A Hurley Medical Center doctor's study also showed rising levels of lead in the blood of children and infants since the city began using the Flint River as its water source in April 2014.

Flint was run by a series of state-appointed emergency managers as key decisions were made to end the use of Lake Huron water, purchased from the Detroit water system, and to use the Flint River instead.

Flint City Council OKs $2 million for reconnection to Detroit water (MLive)

http://www.mlive.com/news/flint/index.ssf/2015/10/flint_city_co

By Ron Fonger | rfonger1@mlive.com
on October 12, 2015 at 8:23 PM, updated October 13, 2015 at 10:46 AM

FLINT, MI -- The City Council has approved spending $2 million to pay part of the **bill for buying Lake Huron water** from the Detroit water system for the next nine months.

Council voted unanimously Monday, Oct. 12, to make the move, clearing the way for Flint's Receivership Transition Advisory Board to consider the same move when it meets Wednesday, Oct. 14.

The $2 million is the city's part of a $12 million spending plan for returning Flint to Detroit Water and Sewerage Department water and ending the use of the Flint River as a drinking water source.

Flint is in the midst of a public health emergency because of elevated levels of lead in water and lead in the blood of infants and children.

Researchers from Virginia Tech university have said the high level of corrosivity of Flint River water, which the city began to use in April 2014, has caused lead pipes and lead solder to leach into tap water here.

The council's action comes in the week following **Gov. Rick Snyder's announcement** of the shared-responsibility plan for financing the reconnection of Flint to the Detroit Water and Sewerage Department.

Ninth Ward Councilman Scott Kincaid voted for the deal after his unsuccessful attempt to change it to force the state to pay more.

Sixth Ward Councilman Herbert Winfrey was not at the meeting.

Kincaid said the state should pay more because Flint was under the control of a state-appointed emergency manager when the decision was made to use the Flint River.

"I think we ought to hold the governor's feet to the fire ... for what the governor has put this community through," Kincaid said. "We're going to have water turned on from DWSD whether (the city approves) the contract or not.

"I guarantee the governor will step in if (we don't) negotiate a contract. If you can't," he told City Administrator Natasha Henderson, "someone out of his office will."

Mayor Dayne Walling and other council members said the state should pay more, but said the city shouldn't gamble with an arrangement that assures an end to the use of the river.

"After months of protesting ... I don't want nobody grandstanding ... We don't want no wrench in this," said Councilman Eric Mays. "It was like pulling hen's teeth to get here."

The DWSD water, pre-treated and from Lake Huron, is expected to be paid for with $6 million coming from the state, a $4 million grant from the Charles Stewart Mott Foundation and $2 million from the city.

Snyder's announcement of the plan came after a **recommendation** by Flint's Technical Advisory Committee on Oct. 8 to change the city's drinking water source and the declaration of a public health emergency last week because of **rising levels of lead** in both water and the blood of children and infants here.

Henderson said earlier Monday that she expected council to support spending $2 million from the available fund balance in the city's water and sewer funds.

"I do not see we will have any obstacles at all with the council," she said in advance of the meeting.

Henderson said she expects the conversion to DWSD water to take place within **two weeks**, and Department of Public Works Director Howard Croft said Flint River water should be flushed out of the drinking water transmission system within three weeks.

Flint resident Claire McClinton, a representative of the Democracy Defense League, said the recent moves to get the city to end its use of the river came later than they should have.

"You told us the water was safe ... A year ago, **General Motors** said this Flint River water is rusting our parts ... You didn't tell GM the water was safe," McClinton said.

"It didn't have to (drag on) this long. You could have made this happen sooner," she said.

Flint, MI: The Making of A U.S. Sacrifice Zone (Opednews.com)

http://www.opednews.com/articles/Flint-MI-The-Making-of-A-by-Pamela-Pugh-Budget_Children_Children_Children-151009-605.html

By *Pamela Pugh* *(about the author)* Permalink (Page 1 of 1 pages)
OpEdNews Op Eds 10/9/2015 at 16:37:35

Related Topic(s): Budget; Children; Contamination; Education; Government; Health; Schools, **Add** Tags **Add** to My Group(s)

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"No community, rich or poor, urban or suburban, black, brown, red, white, or yellow should be allowed to become an environmental sacrifice zone." ~ Dr. Robert Bullard

God Help Us Save Flint
(image by media.photobucket.com/user/onthamash/media/image-4229483-2.jpg.html?filters[term]=god help us save flint&filters[primary]=images) DMCA

For the past 18 months, Flint residents have complained about the quality of their water and suspected health effects. They complained of hair loss, skin rashes, and even vomiting after drinking the water. Although their concerns were mainly disregarded by state and city officials, a study by researchers at Flint's Hurley Medical Center substantiated their escalating fears and gave their plight national attention. This study along with water analysis by a Virginia Tech professor, and a petition to the U.S. Environmental Protection Agency (EPA), provided empirical evidence of rising child blood lead levels and revealed overlooked records of high lead levels in the City's drinking water.

A wealth of research shows that even a small amount of lead in a child's body can cause serious health problems. Studies have demonstrated lead's compromising effects on the immune system and association with impairments in neurobehavioral factors such as a child's learning skills, hearing, and self-regulatory ability resulting in delinquent behavior.

According to the filed petition, Flint's drinking water also tested positive for total coliform, an indicator of possible sewage and fecal contamination. It is further noted that the City's treatment of the water to address the coliform resulted in elevated levels of total trihalomethanes (TTHM), a byproduct of disinfection associated with liver, kidney, central nervous system problems, and increased risk of cancer.

The assertions contained within the petition tell of Flint's water issues beginning after residents were moved from their water source of over fifty years, Detroit Water and Sewerage Department, to an inadequately examined water source and delivery system from the Flint River. This decision was at the helm of numerous and differing emergency managers, appointed by Governor Rick Snyder to fix Flint's budget problems, and done so while neighboring areas remained on the treated and safe water source.

The "budget fix" tactics that have forced Flint's young children to drink lead-laced water can contribute to their lower academic performance. Academic performance is a primary measure used to initiate "state school districts" or state takeover of MI schools. Additionally, recent news reports state that parents are pulling their children from Flint Public Schools at a loss of 300 more students than initially projected. This decline in enrollment would lead to a loss in school revenue and a greater budget deficit making it easier for a state takeover of Flint Public Schools.

- Advertisement -

While Flint's poisonous water has shed light on callous decisions that continue to risk the health and well-being of our most vulnerable Michigan citizens, other low-income children are also casualties of such policies. After more than six years of a failed state-takeover style of governance, Detroit Public Schools' finances and academic outcomes have worsened, with a destabilized education system, decreased academic outcomes, and increased deficit, upward of $335 million.

Governor Snyder, through executive orders and proposed legislation, continues an attempt to extend policies and an autocratic form of governance that usurps local control and power from Michigan residents. This is a formula for the making of a U.S. sacrifice zone, where costs are cut, budgets are balanced, and profits are made at the expense of the health and well being of our children, especially our children living in low-income families.

Accountability needed in Flint water crisis (Detroit Free Press Op-ed)

http://www.freep.com/story/opinion/readers/2015/10/09/feedback-flint-water/73677984/

Free Press readers4:15 p.m. EDT October 10, 2015

(Photo: Ryan Garza Detroit Free Press)

5CONNECT 3TWEETLINKEDIN 8COMMENTEMAILMORE

Gov. Rick Snyder announced plans Thursday to reconnect Flint to Detroit's water system, two weeks after a researcher in the area revealed that more children in Flint have elevated levels of lead in their blood.Flint switched its water source in 2014 from Detroit's system to Flint River water through its own treatment system, which had, at best, nominal controls to keep lead from Flint's aging infrastructure from leaching into the water. Here's what readers had to say about Flint's water crisis:

I can't believe the level of incompetence in handling this by Gov. Rick Snyder and the Michigan Department of Environmental Quality. Complaints started well over a year ago and Gov. Snyder is just now finally reacting? Instead of blanket denials by everybody involved, maybe someone should have done some investigating before it got to this point. Any action taken now cannot reverse the damage already caused to the residents affected by this tragedy. Maybe Snyder should do some research and look up the events of the PBB disaster that occurred in the 1970s under then Gov. Milliken's watch. Do we never learn from our previous mistakes?

Chuck Macioce

Eastpointe

In response to the EPA mandate and under the scrutiny of MDEQ, DWSD studied the problem of corrosion and field-tested processes for their effectiveness for over a year before coming up with its solution of treatment with phosphoric acid which causes a phosphate coating to build up on the pipes blocking the water from leaching lead and copper. All reports were submitted to MDEQ for their approval and files. The similarities between Flint and Detroit couldn't be more obvious, so why would MDEQ approve recommissioning the antiquated Flint treatment plant when it lacks the processes it mandated at DWSD? The problem is what's not in the water leaving the Flint plant that allows it to leach lead out of the old pipes through which it flows. Snyder is locking the barn temporarily sending them back to DWSD, but the horse is gone and can't come back. Where is the accountability for the irreversible harm done to the children of Flint?

Dennis L. Green

DWSD Head Water Systems Engineer (Retired)

This is a reminder that it is important to elect people who are good managers with a mind-set for long-term planning. Why does the City of Flint have no money despite nearly a century of prosperity? Does no one realize the pipes and plants will eventually need to be replaced?

Esteban Curtis

Via Freep.com

This is exactly why government *cannot* be run just like a business with the bottom line being most important. Sometimes decisions have to be made that are not in the best interest of the bottom line. Sometimes people's health and safety are more important than money. We won't even know the cost and damage this caused and at the moment is still causing. This is completely unjust and children's minds and bodies are forever damaged.

Jonathan Ziebol

Via Freep.com

This situation is so sad on so many levels. Even very low levels of lead in children and pregnant women can cause substantial problems with learning and other intellectual functions. As children fail to learn, they act out in frustration. This sometimes leads to criminal behavior that we, as a society, blame on the individual or the parents. In this case, nothing could be further from the truth. Our leaders from both major parties need to balance short-term savings with long-term benefits/risks and understand how lead in children's drinking water leads to criminal behavior down the line. All the criminal justice reform the state can muster can not undo the damage caused by poisoning these children.

Robert Kahle

Chemical testing could have predicted Flint's water crisis (Detroit Free Press)

http://www.freep.com/story/news/local/michigan/2015/10/10/missed-opportunities-flint-water-crisis/73688428/

By John Wisely and By Robin Erb, Detroit Free Press *7:14 a.m. EDT October 11, 2015*

Buy Photo

(Photo: Ryan Garza, Detroit Free Press)

STORY HIGHLIGHTS

Experts say tests could have predicted Flint's problems.

Flint didn't add chemicals to water that Detroit had used successfully.

790CONNECT 88TWEETLINKEDIN 33COMMENTEMAILMORE

Chemical tests could have predicted the corrosion in the pipes that is now being blamed for endangering the health of thousands of vulnerable Flint residents by elevating lead levels in their water supply, experts say.

As the city scrambles to reconnect to the Detroit water system, the absence of such testing on the Flint River water is one of many missed opportunities that might have lessened or avoided the crisis, they say.

“Any competent person should have seen this water will eat up iron and eat up lead,” Marc Edwards, a Virginia Tech professor and national expert on pipe corrosion, told the Free Press. Edwards said his own research shows that Flint River water, without additional controls, corrodes the lead inside pipes at 19 times the rate of water piped from Detroit.

-

DETROIT FREE PRESS

Why are lead levels in children higher in 2 Flint ZIP codes?

Among red flags that popped up over the last 18 months:

- General Motors announced in October 2014 that it was pulling its engine plant off Flint water after workers there began noticing rust spots on newly machined parts. The city approved letting GM switch to water from Flint Township, but didn't change its own water treatment procedures.

- The University of Michigan-Flint alerted city officials that it found elevated lead levels in its water in January, prompting the school to shut off some some drinking fountains and add water filters to others.

- Testing in the fall of 2014 found E. coli in the city's water system, prompting "boil water" notices. The city's procedures for killing the E. coli produced chemical by-products known as trihalomethanes, which can cause cancer with long-term exposure. The city had to adopt additional measures to reduce them.

“Common sense tells you that the Flint River is not your first choice of drinking water,” said Shawn McElmurry, who teaches civil and environmental engineering at Wayne State University and has followed Flint closely.

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DETROIT FREE PRESS

Q & A on Flint's water troubles

Experts say the testing could have been done before the switch from the Detroit system. But officials from the Michigan Department of Environmental Quality note that that kind of testing isn’t required under federal drinking-water rules and has never been done in Michigan. What’s more, they said, the Flint River water, treated in the city’s plant, was already approved as a backup supply in case of interrupted service from Detroit.

Other experts said the testing is more nuanced, part art and part science. Still, they acknowledge that by examining things such as the acidity of water and other factors, engineers could have estimated how much corrosion to expect once water from the Flint River was pumped into homes and businesses across the city.

“Not every engineer in our field could do it, it's a pretty specialized area," said David Cornwell, a Virginia-based engineering consultant and a technical adviser to the National Drinking Water Advisory Council, a group of experts that works with the Environmental Protection Agency on drinking water issues.

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DETROIT FREE PRESS

Flint doctor makes state see light about lead in water

The fix now will cost $12 million — a combination of money from the state, the city and the Flint-based non-profit C.S. Mott Foundation, which has pledged $4 million to help pay Detroit for the water while Flint waits to connect to a new water authority in partnership with Genesee County.

Water woes began shortly after switch from Detroit

Flint began using Flint River water as its main supply in April 2014. Before that, it bought Lake Huron water that was treated and delivered by the Detroit Water and Sewerage Department. Detroit ended that deal one day after Flint voted to join Genesee County in forming the Karegnondi Water Authority, which plans to build its own Lake Huron intake and pipe the water to the Flint Water Plant.

Flint officials wanted to remain on Detroit's system, but the two sides couldn't agree on a price and a contract length.

Once the switch to river water was made, the city, which was operating under a state-appointed emergency financial manager, faced one problem after another. Residents packed city council meetings and held protest marches to voice their anger about water quality.

Experts say Flint's lead problems could have been held in check if the city had added phosphates to the water, as Detroit has done for years. The treatment doesn't eliminate lead entirely, but it does form a film over the pipes themselves, effectively sealing in the lead and reducing the amount in the water to acceptable levels.

But when Flint switched to river water, it didn't add phosphates. Instead it added lime to soften the water.

“The lime softening process has the added benefit of some corrosion control,” said Liane Smith, chief of Michigan’s Office of Drinking Water and Municipal Assistance.

Smith said that once the switch was made, the state began testing for lead and copper, as is required by the federal Environmental Protection Agency.

“Any new supply that comes along has to do two six-month rounds of monitoring for lead and copper out in their distribution system,” Smith said. If those tests show corrosion, additional steps, such as perhaps adding phosphates, are supposed to be followed.

The first round of testing completed in December 2014 showed lead levels of 6 parts per billion. The second round, completed in June of this year, showed they had almost doubled to 11 parts per billion. The EPA requires a remediation plan when levels reach 15 parts per billion and can demand action even below that mark on systems that serve more than 50,000 people.

Cornwell said phosphates are considered more effective than lime softening and they don't raise treatment costs substantially. But they have side effects, he said.

“The negative is that nobody really likes phosphates out in the environment,” he said, noting they can find their way into rivers and lakes, fueling algae blooms such as the ones in Lake Erie.

“There is more to it than saying we're just going to pump phosphates,” Cornwell said. “You may have to make other adjustments.”

Buy Photo

A man crosses a bridge over the Flint River near the Hamilton Dam in downtown Flint on Thursday, Oct. 8, 2015. Flint has been getting its drinking water from the river since last year. *(Photo: Ryan Garza, Detroit Free Press)*

Flint River water a challenge to clean up

Flint River water was always going to pose more treatment challenges than the cold, clear water that comes from the bottom of Lake Huron, experts said.

The river has been marked by decades of industrial pollution. Its tributaries channel farmland run-off into it and its temperature varies by season. Warmer water can promote bacteria growth. All of those factors make treating it to drinking-water standards more difficult.

"The city was doing the best it could” to clean up pollutants, Edwards said, but added that corrosivity was inevitable.

He blamed the problems on a lack of expertise rather than intentional wrongdoing.

“I think it started relatively innocently. They didn’t understand testing and they didn’t understand corrosivity,” he said.

Last month, Edwards' research group released results of corrosion tests it conducted on Flint's water. For the test, researchers used copper pipe with lead solder, which is common in older homes.

The tests showed Flint River water without added phosphates corroded the lead at 19 times the rate of Detroit water. Even when phosphates were added, it corroded at 16 times the rate of the Detroit water.

“From the second it was switched, it was doomed from the lead problem," Edwards said.

When residents began complaining about the water, the city and state should have begun to rethink their testing, Edwards said.

Problems were evident soon after the switch.

In August last year, E. coli was found in the water and residents were urged to boil it before drinking it. The city treated it with disinfectant, but that produced by-products in the water known as trihalomethanes. Long-term exposure to them can cause cancer, so the city began making treatment adjustments.

Then as summer turned to fall, workers at Flint’s GM engine plant began seeing rust on newly machined engine parts. GM's lab tests found high levels of chloride in the water used to wash down metal shavings and cool parts heated from the rapid machining action inside the plant, GM spokesman Tom Wickham said.

GM tried to treat the water in the plant. It had drinking water delivered and tankers brought water for operations, Wickham said.

But it eventually sought to connect to Flint Township's water system, which is supplied by Detroit. In December the connection was finalized and Detroit water began flowing to the plant, via Flint Township.

In January 2015, lead was showing up at the University of Michigan's Flint campus. School leaders become concerned about the water supply after the city issued "boil water" advisories to kill E. coli and realized they'd never done routine, thorough water testing.

Tests in January and February showed elevated levels of lead and other problems in isolated areas — specifically in two infrequently used drinking fountains in two older buildings.

Follow-up testing found other elevated levels of lead, and those sinks and fountains then were either fitted with filters or removed, said Mike Lane, director of the environment, health and safety department

He said officials suspected the problem was in their pipes but notified the city anyway.

In June, Miguel Del Toral of the Environmental Protection Agency drafted an internal memo noting the problems Flint had experienced with E. coli and the by-products of the chemicals used to treat it.

"A major concern from a public health standpoint is lack of corrosion control treatment in the city of Flint for mitigating lead and copper levels in the drinking water," Del Toral wrote.

The memo caused a stir when the American Civil Liberties Union exposed it. But the EPA told the Free Press on Friday that the memo was a draft that was never delivered to MDEQ officials, including Smith, whose names appear on it.

The EPA did say it discussed the concerns raised in the memo with MDEQ officials in July, but the agency did not respond immediately to a request for details.

Leaching lead not unique to Flint

The problem of lead leaching into drinking water isn't unique to Flint. Across Michigan and around the country, pipes that carry water from the mains under the street into homes, businesses and schools often contain lead. Inside homes and business, many older plumbing fixtures and soldered pipes also contain it.

Cornwell said officials from across the nation have formed a working group to review the lead and copper rules and look for ways to improve them. Among the things being considered is a national effort to remove lead pipes from water systems.

But even if a national consensus formed around that idea, the process would take years, Cornwell said. A funding source for such a massive project also would be needed.

Still, he said, removing the pipes is the only surefire way to eliminate lead from the system.

"We can only do so much with water chemistry," he said. "We can only turn the knob so much."

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Contact Robin Erb: 313-222-2708 or rerb@freepress.com.

TIME LINE

April 16, 2013: Flint signs agreement to join the Karegnondi Water Authority.

April 17, 2013: Detroit terminates contract with Flint, giving it one year to find a new water source.

April 24, 2014: Flint switches from Detroit water to Flint River water.

April 30, 2014: Flint closes all valves connecting to Detroit water supply.

June-Sept. 2014: Flint residents complain about smell, taste and discoloration of water.

Dec. 16, 2014: Michigan Department of Environment Quality cites Flint for exceeding limits on disinfection by-products.

Dec. 27, 2014: Flint's General Motors engine plant, citing high chloride levels in the water, switches off its hook-up to Flint, drawing water instead from neighboring Flint Township.

Jan. 9, 2015: Concerned about Flint's water warnings, University of Michigan's Flint campus begins testing its water, detecting lead in isolated, infrequently used areas.

June 24, 2015: Environmental Protection Agency drafts a report raising concerns about lead in Flint's water system as a result of corrosion. It doesn't send the report, but discusses its concerns with MDEQ officials in July.

Sept. 24, 2015: Dr. Mona Hanna-Attisha releases data showing spike in blood-lead levels in Flint children.

Oct. 2, 2015: State officials tell room packed with reporters that there's a problem with Flint's water.

Q & A on Flint's water troubles (Detroit Free Press)

http://www.freep.com/story/news/local/michigan/2015/10/10/flint-water-qa/73693500/

By John Wisely and By Robin Erb, Detroit Free Press *11:13 p.m. EDT October 10, 2015*

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(Photo: Ryan Garza, Detroit Free Press)

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Here's a glance at Flint's water crisis:

QUESTION: Why is Flint experiencing lead in its drinking water?

ANSWER: Experts say the chemistry of the water drawn from the Flint River is interacting with metal in the pipes leading to homes and businesses, leaching lead into the system.

DETROIT FREE PRESS

Chemical testing could have predicted Flint's water crisis

Q: Is all water in Flint unsafe?

A: Yes. Experts recommend all Flint residents install water filters to protect themselves from lead exposure. Free filters are being made available throughout the city.

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DETROIT FREE PRESS

Why are lead levels in children higher in 2 Flint ZIP codes?

Q. What led to Flint's decision this past week to seek to reconnect to Detroit's water system?

A. An analysis by Dr. Mona Hanna-Attisha, a pediatrician at Hurley Children's Hospital, found that the number of Flint children with elevated blood-lead levels — 5 micrograms per deciliter or more — jumped from 2.1% in the 20 months prior to Sept. 15, 2013, to 4.0% between Jan. 1 and Sept. 15 this year. In certain ZIP codes, the change was even more severe — jumping from 2.5% of the children tested to 6.3%. Flint started drawing water from the Flint River last year. Hanna-Attisha's research prompted state health officials to look more closely at their own data.

Q: Why is Flint using the river water?

A: In 2013, the city voted to join the Karegnondi Water Authority, a new group that is building an intake from Lake Huron and a pipeline to Flint. That does not become operational until the middle of next year. Meantime, Flint's former supplier, the Detroit Water and Sewerage Department, terminated its contract with the city after the vote and discontinued providing water one year later.

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DETROIT FREE PRESS

Flint doctor makes state see light about lead in water

Q: Why did Detroit end its contract with Flint?

A: The two cities couldn't agree on terms of a contract to keep Flint on the system so Detroit exercised an option in their 1965 contract to terminate service with one year notice.

Flint doctor makes state see light about lead in water (Detroit Free Press)

http://www.freep.com/story/news/local/michigan/2015/10/10/har
attisha-profile/73600120/

By Robin Erb, Detroit Free Press*9:58 a.m. EDT October 12, 2015*

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(Photo: Ryan Garza, Detroit Free Press)

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Under the steady gaze of a watercolor giraffe and tissue paper butterflies, a Flint pediatrician and mother of two last month forced the state of Michigan to snap to attention.

But getting the state to concede the probability that Flint's water is poisoning its children with lead — after months of assurances from both city and state officials that the water is safe — was far from easy.

It required Dr. Mona Hanna-Attisha, 38, to sidestep bureaucracy. It meant awkward conversations and putting her hospital — city-owned Hurley Medical Center — smack-dab in a political minefield.

And it meant checking her data "a zillion times," she said, then second-guessing herself to the point of being physically ill when a state spokesman questioned her credibility.

Just hours after state officials acknowledged her data, Hanna-Attisha felt equal parts exhausted and vindicated — at one moment laughing at congratulatory e-mails and comments from colleagues ("Maybe they'll give you a lead key to the city," one had quipped), at another reciting sobering statistics about the life-long damage from lead poisoning: irreversible brain damage, development delays, speech problems, a boosted risk for behavioral issues, serious chronic conditions, to name a few.

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DETROIT FREE PRESS

Q & A on Flint's water troubles

"It has been such a physiologic response," she said of her look at the numbers and the state's reaction. She sat in her office, where children's artwork hangs haphazardly on the walls. A pink-lettered sign on her door — "This is my fight song," it reads —pays homage to Hurley's youngest cancer patients.

"At times I want to cry and then I'm so happy," she said.

But then Hanna-Attisha, a pediatrician for many of Flint's poorest families whose training and experience has focused on environmental toxins and health disparities, shook her head.

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DETROIT FREE PRESS

Why are lead levels in children higher in 2 Flint ZIP codes?

“But then I’m tearful because how could this have happened in 2015 when all these regulations are in place (to ensure clean water)? For a population that has every burden in the world already, this is the last thing they needed,” she said.

In retrospect, Hanna-Attisha served as the canary in the coal mine in this latest public health crisis — the doctor who spotted a problem and wouldn’t let it go until others paid attention, said Dr. Eden Wells, the state’s chief medical executive.

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DETROIT FREE PRESS

Chemical testing could have predicted Flint's water crisis

“She was a doc on the front lines who knows to pick up the phone ... rattle some cages and say ‘Hey, come here, we’ve got a problem,’ ” Wells said.

It began over a dinner party with high school friends Aug. 26.

Among Hanna-Attisha’s guests was a friend who played piano at her wedding and also is a water-quality expert. The conversation turned to the issue of the drinking water.

“Have you looked at kids’ blood-lead levels?” the friend asked.

Hanna-Attisha was not only intrigued, but also perfectly positioned for such a data dive.

She heads the pediatric residents program at Hurley and is a pediatrics and human development professor at the Michigan State University College of Human Medicine. She sits on the Michigan Chapter of the American Academy of Pediatrics, too.

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Mona Hanna-Attisha, MD, MPH program director for the pediatric residency at the Hurley Children's Hospital at Hurley Medical Center in Flint. *(Photo: Ryan Garza, Detroit Free Press)*

In short, she lives as much on the research side of medicine as she does the clinical side.

So she knew that routinely drawn blood-lead level data existed for thousands of Flint-area children, especially those on Medicaid or who live in high-risk areas for lead exposure. The following week, she turned to the Genesee County Health Department for its blood-lead level data.

She was disappointed. Test results are kept in individual patient files and could not be easily analyzed, Genesee County health officer Mark Valacak told Hanna-Attisha.

Undaunted, she asked the state for its analysis of the same blood-level data for Flint.

In the meantime, local and state officials were facing mounting pressure from residents who had already complained that the water smelled and tasted funny.

In mid-September, a Virginia Tech researcher and lead expert, Marc Edwards, concluded from his testing of Flint water that it was 19 times more corrosive than Detroit water. And even though repeated testing at Flint's water treatment plant had detected no lead and testing in homes had registered lead at acceptable levels, according to the state, Edwards wrote on his website, www.flintwaterstudy.org, that his own test results suggested an undeniable presence of lead in water drawn from Flint homes.

While she waited for state data, Hanna-Attisha began sorting through Hurley's own records — a total of 1,746 test results from Flint children to compare against 1,640 results from elsewhere in Genesee County. The results were sobering: The number of Flint children with elevated blood-lead levels — 5 micrograms per deciliter or more — jumped from 2.1% in the 20 months prior to Sept. 15, 2013, to 4% between Jan. 1 and Sept. 15 this year. In certain ZIP codes, the change was even more troubling, she said — jumping from 2.5% of the children tested to 6.3%.

The change correlated roughly to the timing of the city's switch from using Detroit water to water that would be temporarily drawn from the Flint River.

She and her research assistant kept rechecking the numbers — often late into the evening.

One night, "her baby is crying and I'm like 'Can you run that p-value one more time?' " she said, chuckling.

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Mona Hanna-Attisha, MD, MPH program director for the pediatric residency at the Hurley Children's Hospital at Hurley Medical Center in Flint is seen in her office at Hurley Medical Center in Flint on Friday Oct. 2, 2015. *(Photo: Ryan Garza, Detroit Free Press)*

By the time Hanna-Attisha went to Hurley's CEO, Melany Gavulic, public panic was high. Community organizations were handing out filters and bottled water. Community leaders blamed a state-appointed emergency manager for changing water systems. It's an election year, too, for the city.

It was a "politically messy situation," Hanna-Attisha told her boss. Gavulic was clear, Hanna-Attisha said: Kids' health comes first.

On Sept. 24, Hanna-Attisha went public with her results.

The response from the state, she said, was startling. Her research was dismissed and her comments called "unfortunate."

Brad Wurfel, spokesman for the Michigan Department of Environmental Quality, repeated a familiar refrain: Repeated testing indicated the water tested within acceptable levels.

Hanna-Attisha said she crawled into bed that night, physically ill.

“We checked our data a bazillion times ... but when you hear (the state’s dismissal) on national news, how can you not doubt yourself?” she said.

She wasn’t the only one surprised. Valacak, the Genesee County health executive, said he “took offense ... in part because I know how dedicated she is and I know the quality of her character.”

That Monday, Valacak e-mailed state health officials. Among his questions: Why would the state’s analysis include non-Flint residents? On Tuesday, he pushed again for an answer. On Wednesday: “Any update?”

He got no answers, he said: “It was frustrating.”

At the same time, Hanna-Attisha had stepped up conversations with Wells, who had taken her post as the state’s chief medical executive in May. The two women knew of each other and had even stood together earlier this year to promote immunizations.

Wells, who leads the preventive medicine residency program at the University of Michigan’s School of Public Health, said she’d heard media reports about Flint’s water. She balanced those against water-quality tests indicating the water was safe. Moreover, a look at county-wide data didn’t trigger any alarms.

Now, she was alarmed by a closer look at Hanna-Attisha’s findings.

In several conversations, Wells and Hanna-Attisha compared the pediatrician’s analysis against that of the state epidemiologists. Among the differences: The state’s number included kids from outside Flint — those who wouldn’t normally drink Flint water. Some had Flint addresses but lived outside city limits.

As September drew to a close, state health epidemiologists reanalyzed their data, eventually confirming Hanna-Attisha’s results.

Wells saw a yellow Post-it note from her staff on her keyboard when she walked in at 7:30 a.m. Oct. 1. Her own data analysts had confirmed Hanna-Attisha’s findings. She walked down the hallway to find Nick Lyon, director of the Michigan Department of Health and Human Services. They’d have to let the public know — and fast, the two decided.

That same day, Valacak and Genesee County commissioners declared a public health emergency. Commission Chairman Jamie Curtis said he’d simply had enough. Hanna-Attisha’s data couldn’t be ignored, no matter what state authorities said water testing indicated.

“In six years I don’t want 5- and 6-year-olds going to school with lead poisoning,” he said.

Valacak said he got a call the next day — Friday, shortly before the state news conference. Hanna-Attisha’s numbers had been confirmed, he was told.

At 1:30 p.m. Oct. 2, Flint Mayor Dayne Walling joined state officials — environmental, health and public relations — at the microphone in front of a packed room of reporters.

“We understand many have lost confidence in the drinking water. We need to build that back. We need to do that more,” Dan Wyant, of the Michigan Department of Environmental Quality, said in front of a line of cameras. Reporters tapped away on keyboards. Outside were protesters.

Quietly in the back of the room stood Hanna-Attisha. She leaned over to Brad Wurfel, the state spokesman who a week earlier had called her work “unfortunate” in a time of “near hysteria.”

“You called me irresponsible,” Hanna-Attisha recalled saying to him. Wurfel said he was sorry.

“I had the opportunity to apologize ... I was grateful for the opportunity to do it,” Wurfel told the Free Press later. “I will be the first to say, I came on a little strong on this because I believed the numbers we had in the moment.”

Hanna-Attisha, whom Gavulic called “definitely one of our superstars” even before her recent spotlight, said she and other researchers aren’t done. They want to specifically map blood-lead levels throughout the city’s neighborhoods, and they want to test for blood levels in cord blood from Flint’s newest babies.

Exhausting? Yes. Ready to stop? Never, she said: “Because this is what matters. This is what we do ... This is why we’re here.”

Contact Robin Erb: rerb@freepress.com or 313-222-2708. Follow her on Twitter@Freephealth. Staff writer John Wisely contributed to this report.

Trust needed for Flint to rebound from water crisis, say those who know (MLive)

http://www.mlive.com/news/flint/index.ssf/2015/10/trust_neede

By Gary Ridley | gridley@mlive.com
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on October 11, 2015 at 5:30 AM, updated October 11, 2015 at 5:33 AM

FLINT WATER

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All Stories

FLINT, MI -- Life has mostly returned to normal nearly two years after a disastrous chemical spill thrust Charleston, W.V., into the national spotlight.

Leaders of the small town nestled in the Appalachian Mountains say the same will eventually be true of Flint as it heals from a water crisis that was reported nationwide -- as long as leaders and residents face the truth of their problem.

National news trucks descended on the West Virginia capital in January 2014 after a storage tank at a nearby chemical plant began leaking multiple chemicals into the Elk River, nearly a mile upstream of the area's drinking water intake.

Soon, the entire area, roughly 300,000 people, was without safe drinking water.

"You just couldn't imagine how bad it was," Charleston Mayor Danny Jones said.

RELATED: How the Flint water crisis emerged

For days, residents were told not to drink, cook or bathe with the town's water as the little-known coal-washing agent was being sucked up into the region's water supply.

A fear that the city's water supply had been poisoned swept through the town.

Trucks of bottled water were brought in to sustain the residents. Restaurants and hotels -- a major segment of the region's economy -- shut down.

"It really cut the city at its knees," said Charleston Convention and Visitor Bureau President Alisa Bailey.

In Flint, a savior succumbs

In Flint, it was billed as the future; a salvation for a city reeling from the loss of residents and businesses. It was a chance to save money, which for a city facing staggering legacy costs and toiling through state receivership was too good to pass up.

But, unlike Charleston, Flint's calamity didn't start with nefarious dealings from an industrial polluter. It began with a push of a button and a celebration.

"Here's to Flint," Mayor Dayne Walling exclaimed in April 2014 as he, state-appointed emergency manager Darnell Earley and more than a dozen others drank glasses of freshly-treated Flint River water as the city cut ties from the Detroit municipal water supply.

Leaders at the time thought closing the valve to Detroit was actually opening the city's financial future, giving the Vehicle City's water budget a respite from increasing prices as they waited for a new pipeline to be built from Lake Huron.

But, in reality, they were unleashing what would become a public health emergency that would eventually shake people's trust in what flowed from its taps and who they elected to office.

Broken trust

Complaints poured in almost immediately after the change. Protests soon followed.

Residents said they were receiving discolored, stinking water that was causing them health problems. But city leaders continued to tell residents the water was safe.

"It's a quality, safe product," Walling said in June 2014. "I think people are wasting their precious money buying bottled water."

However, weeks before Walling's reassurance, the city discovered some portions of its water supply had high levels of trihalomethanes -- or TTHM -- a group of four chemicals that are formed as a byproduct of disinfecting water.

Prolonged exposure to the chemicals can cause liver, kidney or central nervous system problems and an increased risk of cancer.

City residents weren't notified of the chemical by the city until January 2015 -- when it officially violated the Safe Drinking Water Act and was required by law to tell water customers of the problem.

Officials again dragged their feet in warning residents about rising lead levels due to the more-corrosive river water.

Results from 100 water samples collected from Flint in 2014 showed increasing lead levels, with 10 percent of homes tested at 6 parts per billion of lead or more. They were the highest lead levels measured in Flint by the city in more than 20 years, the state data shows.

That testing was completed more than nine months ago, but because the levels did not meet the federal action limit of 15 ppb, 69 more tests were done in 2015, and lead levels continued to rise.

Michigan Department of Environmental Quality Director Dan Wyant said the state notified the city of the need to develop a lead action plan in August 2015, but the concerns about lead levels were never publicized as a potential public health threat until researchers from Virginia Tech pushed the issue.

Even then, state officials were dismissive of the Virginia Tech study and disputed a separate study conducted by a Hurley Medical Center doctor that showed some Flint children had elevated blood-lead levels since the switch.

The state's and city's tone changed as protests continued and data continued to reveal the full scope of the problem. Eventually, Flint Mayor Dayne Walling and Gov. Rick Snyder decided it was time to make a change. They announced Thursday, Oct. 8, that Flint would reconnect to Detroit water.

"Reconnecting to Detroit is the fastest way to deliver clean, safe water to Flint and stabilize the infrastructure system," Walling said in a prepared statement. "I appreciate the state, the Mott Foundation, Detroit, and the county's participation in a solution for Flint's water problems. The health and safety of Flint's families, children and seniors is my top priority and reconnecting to Detroit is a major step that the city could not take alone given budget constraints."

Melissa Mays, founder of water activist organization Water You Fighting For, said she understands that the city wasn't required to tell residents of the water problems until it officially violated water safety standards, but officials should have been more open in communicating with residents and addressing their concerns.

"They didn't have to legally, but morally they should have told people," Mays said. "I think they felt the citizens wouldn't be understanding, but when your health is at risk you have to tell the truth."

The truth

It was the truth that helped Charleston residents outlast the tragedy, its leaders said.

Charleston Mayor Danny Jones said there was never any public mistrust in his city's leadership as they worked to return safe drinking water to the region's residents.

The city was in front of the issue, telling residents what was happening and how it would be fixed. They didn't try to hide the problems, and its leaders left politics aside.

Jones, a Republican, joked that he even cried when MSNBC's Rachel Maddow, a liberal pundit, profiled the town's issues.

"The quality of water is not negotiable," Jones said.

It was the truth that also helped Charleston rebuild.

Charleston, a state capital, survives in part thanks to a strong tourism and hospitality industry. So, a possibly poisoned water supply could be an obvious setback to attracting outside vacationers and conferences.

"I think it hits you right in the gut at the time," said Charleston Convention and Visitor Bureau's Bailey. "We did experience an economic disruption at the time."

But, tourism officials didn't try to hide the issue. Instead, they addressed the issue head on, and told people of everything they were doing to rectify the problem.

The truth worked. The travelers returned and Bailey said the industry has shown continued revenue grow for the past eight months.

"You can't B.S. people about it," Bailey said. "All you can do is be honest."

While Gov. Rick Snyder has pushed a plan that would reconnect Flint to Detroit water until the completion of the new Lake Huron pipeline, there's still work to be done to bring the crisis to an end.

Flint still needs to finalize the $12 million reconnection to the Detroit system, and it's still unknown how much damage the more-corrosive river water did to the city's infrastructure. Testing still needs to be conducted to determine just how pervasive the lead problem has become.

But the decisions made over the last 18 months leave some skeptical that the problem will ever truly be fixed.

Flint resident John Hinton said he wouldn't be surprised if money set aside to fix the problem is eventually misused. It's a feeling shared by many Flint residents as they continue to receive the highest water bills in the county for a product they are nervous to use.

"I just don't think they've got their thinking together," Hinton observed. "They got to get their heads together and do the right thing."

Snyder's representatives said they are dedicated to finding a collaborative solution that protects the public's health and ensuring residents safe, accessible water.

"We're focused on helping address this challenging issue for the residents of Flint, partnering with the city and collaborating across local, state and federal levels to bring all resources and ideas to bear," said Snyder spokeswoman Sara Wurfel.

Mays said her group will also continue working toward a safe, viable drinking water solution for Flint. But, the powers in charge of the project will need to be honest and forthright to ensure continued public trust in the city's water supply and elected officials.

"I don't know what it will take to get the trust back except for 100 percent transparency," Mays said.

State under mounting scrutiny for Flint’s water crisis (Detroit News)

David Eggert, Associated Press *11:53 a.m. EDT October 11, 2015*

(Photo: Todd McInturf / The Detroit News)

64CONNECT 13TWEETLINKEDIN 10COMMENTEMAILMORE

Lansing — Gov. Rick Snyder and his administration face mounting scrutiny for Flint’s drinking water crisis, which began when a state emergency manager switched the supply source to save money and has culminated with high lead levels in some children.

Flint’s switch back to a Detroit-area system after more than 17 months is vindication for residents and others who complained for months about the safety, smell, taste and appearance of water from the city’s river. The about-face — which came after the state corroborated outside findings of elevated lead levels in children despite initially doubting the results — raises questions about the state’s role.

What was supposed to be a cost-cutting move for a 99,000-resident city in financial crisis turned into a health emergency and could end up costing state government at least $10.6 million.

What galls those who helped expose the fiasco is not only the initial decision to pump corrosive, less stable Flint River water without adequate treatment, which let the water pick up lead from more than 15,000 aging pipes that connect water mains to houses. It also is the response since, both from city officials and state environmental regulators who assured the public the water was safe.

As far back as February, a Michigan Department of Environmental Quality water supervisor told the U.S. Environmental Protection Agency that Flint had an optimized corrosion control plan in place. But by April, an EPA official confirmed through another DEQ official that was untrue, according to emails obtained through a public records request by the American Civil Liberties Union.

The ACLU began investigating after residents continually raised concerns about the water.

Snyder endorsed a return to Detroit's system — which treats water from Lake Huron — and is asking lawmakers to help foot the extra cost until Flint joins the new Thumb-area Karegnondi Water Authority next year. He acted at the behest of a committee of water experts but said it also was clear the public had lost confidence in the water supply.

"The protocols were being followed as established by the U.S. EPA, in terms of the testing that needed to be done," the Republican governor said. "What apparently is true is there needed to be more work. … Those are kind of the learning experiences."

The state initially downplayed lead concerns, saying city-provided samples showed fewer than 10 percent had levels above the federal action level. In August, after a year of testing, it told Flint to start corrosion treatment, now a moot point given the impending change in water source.

"What we knew in the summer vs. what we know now is distinctly different," said DEQ spokesman Brad Wurfel. He said the agency did things "by the book" but is talking with the EPA and internally about whether "some editing needs to happen to the book."

There could be statewide, even national implications that extend beyond Flint.

For instance, the state instructs drinking water systems to collect samples by asking residents to flush the tap the night before. Miguel Del Toral, an EPA official, has raised concerns that while the practice is not specifically prohibited by federal rules designed to find "worst-case" conditions, it minimizes true lead levels and gives residents a false sense of security.

Separately, DEQ Director Dan Wyant said the state will proactively address potential lead in all schools' water, especially in older buildings, after screening showed elevated levels in three Flint schools.

Lead — a metal that can cause developmental delays and learning disabilities — is just the latest issue since Flint changed its water supply in April 2014.

There have been high levels of a disinfectant byproduct. Increased bacteria levels forced boil-water advisories.

ACLU of Michigan Executive Director Kary Moss said the Flint "disaster" stems from "short-sighted" budgetary decisions made by an emergency manager, which were defended by his successor. Those responsible must be held accountable, she said.

Flint was under state-run emergency management from 2011 through this past April, and a transition board still oversees budgets and contracts.

Critics have questions about how adequately Flint River water was studied before the move, why lead pipes were not protected from corrosion and if the water caused long-lasting damage to the city's already-decaying infrastructure.

Senate Minority Leader Jim Ananich, D-Flint, said mistakes were made.

"It's important to look back and say, 'How were these things missed? Who missed them? And what steps can be put in place to make sure they don't get missed in the future, in my community or anywhere else?'" he said.

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Residents, ACLU ask EPA to Take Action on Flint Water (Dispatch Times)

http://www.dispatchtimes.com/residents-aclu-ask-epa-to-take-action-on-flint-water/126015/

BY NEWSMEDIAON **OCTOBER 11, 2015**

Officials have declared a public health emergency over the city of Flint's water after tests showed children with elevated levels of lead.

Highly corrosive water in the Flint River, the source of the City's drinking water, has been flowing through lead service lines in Flint's water system for more than a year.

Bob Mabbitt, 39, said distributing filters is a "Band-Aid" fix because "not everybody's going to get a filter who really needs one".

"There's a few misunderstanding that the water coming out of the *Flint*system has lead in it, the non-detect has been consistent since the time it switched over", said Dan Wyant, the director of the DEQ.

The governor didn't rule out possibly reconnecting Flint to Detroit's water system, saying it is an "active topic". "There is a real concern and issue (once water) ends up in people's homes", Snyder said.

State and city officials are expected to outline the next plans to deal with the city's water crisis as soon as tomorrow.

But others were skeptical of the decision.

By June a year ago, residents began to complain that their tap water was the wrong color, that it had a troubling odor and taste.

But residents did notice a change. Thus, delaying corrosion control treatment will only delay improving the water quality.

On Thursday, General Motors announced it also was donating $50,000 to a private and public community fund providing filters for at least 5,000 Flint residents.

The city's water is treated and the state says it meets federal safety guidelines, but tests have found that the water is too corrosive and is releasing lead from old plumbing in and near thousands of homes. That's when the city, in a dispute with Detroit, quit buying its water and instead signed on with a new system that will draw water from Lake Huron. Facebook pages have been forums for complaints and concerns… It urges those using the city's water to not consume it unless it's treated.

Filters will be distributed at the University of Michigan-Flint for Flint homes affected by high levels of lead in their water. After, that figure jumped to 4%.

Considering the serious effects that lead poisoning has on children in particular, the question is completely reasonable. "But that's, you know, the thing that has happened". One study of Flint children under age five found that the proportion of children living in Flint with elevated blood levels has doubled since the City changed its drinking water source.

While it may have killed the bacteria, it left the water with high levels of trihalomethane (TTHM), which is thought to increase the chances of developing cancer.

In September, Virginia Tech researchers released a report saying Flint's water was creating a health threat in old homes that have lead pipes or pipes fused with lead solder.

Individuals shouldnt notice any difference, said Steve Busch, Lansing and Jackson district supervisor in the DEQs office of drinking water and municipal assistance.

Flint officials say they know which homes have risky pipes but that the information is on about 45,000 index cards and hard to retrieve.

"As a father, I want every family and household in the city of Flint to be safe and secure", Mayor Dayne Walling said at a press conference to announce the advisory.

The discovery of heightened lead levels has ratcheted up the pressure on Snyder's administration this week, with many blaming the governor since the switch to river water was implemented under his appointed emergency manager.

Flint-based Coalition for Clean Water, the American Civil Liberties Union of Michigan, and the Natural Resources Defense Council joined the petition to trigger the EPA to launch a comprehensive federal response to the ongoing crisis.

Lawmaker's lawsuit claims Flint, state withheld documents on water safety (MLive)

http://www.mlive.com/news/flint/index.ssf/2015/10/lawmakers_l

By Gary Ridley | gridley@mlive.com
Follow on Twitter
on October 12, 2015 at 1:58 PM, updated October 12, 2015 at 10:10 PM

FLINT WATER

- **Nonprofit, beverage distributor join effort to bring clean water to Flint**
- **Flint City Council OKs $2 million for reconnection to Detroit water**
- **Sorry seems to be the hardest word for the state to say to Flint**
- **Michael Moore says governor took over Flint, made citizens drink sewage**
- **Lawmaker's lawsuit claims Flint, state withheld documents on water safety**

All Stories

Phil Phelps*Sarah Schuch | sschuch@mlive.com*

FLINT, MI — A Flint-area lawmaker says he is filing a lawsuit claiming the state and city of Flint refuse to hand over documents related to the city's water system switch to use the Flint River.

State Rep. Phil Phelps, D-Flushing, announced Monday, Oct. 12, that he is filing the lawsuit to force the city and state to turn over documents he sought under the state's Freedom of Information Act.

RELATED: How the Flint water crisis emerged

Phelps claims that on Sept. 4 he requested the city and state turn over all documents and emails regarding a permit and application the city was required to submit to the state's Department of Environmental Quality before it began using the Flint River as its source of drinking water.

Last month, the state and city both denied the request by claiming the documents did not exist, according to Phelps.

"It's an absolute shame that I have to file suit to force our government to comply with the law," Phelps said. "I was shocked at their response, because prior to receiving the denials, officials from both the city and state had told me that not only did documents exist, but they would be happy to share them with me."

Phelps pointed to quotations from city and state officials in March and April 2014 stories on MLive.com that referred to the permit application process.

"I want to know what these officials knew about the safety and quality of the river water before the switch was made. Judging by their response and recent actions, it almost seems they knew a lot more than they are letting on to," Phelps said. "Flint residents deserve better than this. They deserve to know the truth about the decisions that were made, and if I have to fight this in court to get the truth, so be it."

City and state officials could not be immediately reached for comment on the allegations.

Gov. Rick Snyder announced a plan Thursday, Oct. 8, that would seek Flint's return to the Detroit water system after high lead levels were discovered in some residents' water since the switch to the river. City and state officials **first learned of possible lead problems** in late 2014.

###

To: Deltoral, Miguel[deltoral.miguel@epa.gov]
Cc: Porter, Andrea[porter.andrea@epa.gov]
From: Crooks, Jennifer
Sent: Tue 10/13/2015 8:21:58 PM
Subject: Question: OCCT Designations for Detroit and Chicago Groups

Question below in red.

From: Deltoral, Miguel
Sent: Monday, October 05, 2015 1:42 PM
To: Poy, Thomas; Bair, Rita; Damato, Nicholas; Glowacki, Joanna; Porter, Andrea; Crooks, Jennifer; Schock, Michael; Lytle, Darren
Subject: OCCT Designations for Detroit and Chicago Groups

Hi all,

Attached are the OCCT designations for the Chicago interconnected systems and the Detroit interconnected systems.I asked Andrea to pull the SDWIS data for these two groups of systems (thank you kindly, Andrea!)

All large consecutive systems in the Chicago interconnection are appropriately designated as "system deemed optimized without OCCT" with a reason code of WQP (meaning OWQPs have been designated for them). Chicago's OCCT designation is incorrect (system designated optimized without treatment) and should be updated. So what is the proper OCCT designation for Chicago? And thus for Detroit? The reason code is WQP, as stated above, right?

All of the large systems in the Detroit interconnection are also designated as "system deemed optimized without OCCT" but they all have a reason code of '(b)(3)'. DEQ has acknowledged that the Detroit reason code of '(b)(3) is incorrect. It should be WQP and they will fix that in the next update. For whatever reason, Flint does not have anything reported for either the designation code or reason code.

Miguel A. Del Toral

Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

To: Crooks, Jennifer[crooks.jennifer@epa.gov]
Cc: Porter, Andrea[porter.andrea@epa.gov]
From: Deltoral, Miguel
Sent: Tue 10/13/2015 8:24:27 PM
Subject: Re: Question: OCCT Designations for Detroit and Chicago Groups

Yes. Detroit and Flint should have been designated as WQP by July 1998.

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To: Deltoral, Miguel[deltoral.miguel@epa.gov]
Cc: Porter, Andrea[porter.andrea@epa.gov]
From: Crooks, Jennifer
Sent: Tue 10/13/2015 8:48:46 PM
Subject: RE: Question: OCCT Designations for Detroit and Chicago Groups

So what is the proper OCCT designation for Chicago, since they installed treatment?

From: Deltoral, Miguel
Sent: Tuesday, October 13, 2015 3:24 PM
To: Crooks, Jennifer
Cc: Porter, Andrea
Subject: Re: Question: OCCT Designations for Detroit and Chicago Groups

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Phone: (312) 886-5253

To: Crooks, Jennifer[crooks.jennifer@epa.gov]
From: Schock, Michael
Sent: Tue 10/13/2015 9:31:18 PM
Subject: RE: no Flint schematic yet

Thank you, we did finally get one, as you know. But of course, changes were made and hopefully at some point they can update it. That's important because we'll need something like it for the post-Detroit Lake Huron water switch, again.

Studies should have been already underway to anticipate the treatment changes at the plant and doses/coagulants/filter media/disinfection/phosphate dose that will be needed when the new source is ready. Our research (which we've presented at many conferences) clearly shows that many, if not most, water systems adding phosphate chemicals for corrosion, have protection mechanisms on the lead pipe surfaces that are not simple Pb(II) orthophosphate minerals. Back in the late 80s when the LCR was developed, the theory (which is also behind the WQP idea) was that simple minerals were formed. But we know now that it's not the case in many, if not most, systems. So, doing studies to anticipate effective target pH, calcium, alkalinity, orthophosphate, etc. is about the only way to optimize the corrosion control. That's just the same idea as doing jar tests to figure out proper coagulation parameters, which nobody objects to. The corrosion tests are more complicated, more expensive, and take longer, to be sure, but to get the treatment right without exposing the public to full-scale experimentation on the real distribution systems, it is simply the best engineering practice.

I do appreciate your help in digging out the background information. I'm sure we'll have more questions as time goes on.

Mike

From: Crooks, Jennifer
Sent: Thursday, October 01, 2015 6:02 PM
To: Schock, Michael; Lytle, Darren
Cc: Poy, Thomas; Deltoral, Miguel; Porter, Andrea
Subject: no Flint schematic yet

I think MI DEQ has been hit hard this week with public inquiries, congressional inquiries, etc., so I have not heard back from them today. Tomorrow is a press release with MI DEQ and EPA. I did send them an email just now to say if they have the schematic, they should email it to you directly Nonresponsive Discussion of Personal Matters / Ex. 6, so I'll continue to follow up with them.

Jennifer

To: Burke, Thomas[Burke.Thomas@epa.gov]; Kopocis, Ken[Kopocis.Ken@epa.gov]; Grevatt, Peter[Grevatt.Peter@epa.gov]; Distefano, Nichole[DiStefano.Nichole@epa.gov]; Harrison, Melissa[Harrison.Melissa@epa.gov]
Cc: Meiburg, Stan[Meiburg.Stan@epa.gov]
From: Hedman, Susan
Sent: Wed 10/14/2015 12:11:46 AM
Subject: Flint Task Force

This afternoon I spoke with Stan and the Administrator -- after her call with Rep. Kildee. She asked me to revise the Task Force description to give it more of a regional flavor -- to make it clear that the Task Force is not a bunch of EPA HQ folks swooping in from DC to take over. I thought that the easiest way to accomplish this might be to say that the Regional Administrator is appointing the Task Force and to remove one of the HQ people from the Task Force. Please take a look at the revised version below -- and let me know if you are OK with this approach and if I removed the right HQ person (my thinking was that a technical lead would be in the best position to provide technical assistance.)

FLINT SAFE DRINKING WATER TASK FORCE

US EPA is committed to working with our state and local partners to ensure a safe and reliable water supply for the residents of Flint, Michigan. To achieve this, the EPA Region 5 Administrator will establish a Task Force to provide the Agency's technical expertise through regular, but no less than weekly, conversations with designated officials* from MDEQ and the City of Flint to assist with developing and implementing a plan to secure water quality, including measures to optimize corrosion control. Task Force members will be available to consult with MDEQ and the City of Flint on site in Flint as needed. The Task Force will also coordinate as necessary with federal, state and local public health agencies to assist with protection of public health.

Specifically, the Task Force will provide technical assistance to the MDEQ and the City of Flint to reconnect the Flint system to a new source of drinking water (to be supplied by the Great Lakes Water Authority) and to optimize corrosion control for the Flint system, starting in October 2015. The Task Force will also provide technical assistance to the MDEQ and the City of Flint, as needed, in advance of and following connection of the Flint water system to a new source of drinking water (to be supplied by the Karegnondi Water Authority) and to optimize corrosion control for the Flint system, starting in 2016.

Composition of the Task Force

Region 5 Deputy Administrator Bob Kaplan, Chair

Office of Research and Development Scientist Darren Lytle

Office of Research and Development Scientist Michael Schock

Office of Water Lead and Copper Rule Technical Lead Jeff Kempic

Region 5 Water Division Deputy Director Tim Henry

Region 5 Water Division Drinking Water Section Chief Tom Poy

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* The Governor will be asked to designate the MDEQ official; The Mayor will be asked to designate the Flint official.

Sent from my iPhone

To: Hedman, Susan[hedman.susan@epa.gov]
Cc: Burke, Thomas[Burke.Thomas@epa.gov]; Kopocis, Ken[Kopocis.Ken@epa.gov]; Distefano, Nichole[DiStefano.Nichole@epa.gov]; Harrison, Melissa[Harrison.Melissa@epa.gov]; Meiburg, Stan[Meiburg.Stan@epa.gov]
From: Grevatt, Peter
Sent: Wed 10/14/2015 1:32:32 AM
Subject: Re: Flint Task Force

Looks good to me in OGWDW.

Sent from my iPhone

On Oct 13, 2015, at 8:11 PM, Hedman, Susan <hedman.susan@epa.gov> wrote:

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From: Burke, Thomas
Sent: Wed 10/14/2015 1:54:54 AM
Subject: Re: Flint Task Force

This looks good to me and the ORD team. Of course others will also be available to assist as needed.

Tom

Thomas A. Burke, PhD, MPH
Deputy Assistant Administrator
EPA Science Advisor
Office of Research and Development
202-564-6620
burke.thomas@epa.gov

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From: Distefano, Nichole
Sent: Wed 10/14/2015 2:09:58 AM
Subject: Re: Flint Task Force

Thanks Susan. Once this is final let's discuss how we circle back with Kildee's folks.

Sent from my iPhone

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From: Kopocis, Ken
Sent: Wed 10/14/2015 11:25:26 AM
Subject: RE: Flint Task Force

Per Peter's note, we're good.

Thanks.

From: Distefano, Nichole
Sent: Tuesday, October 13, 2015 10:10 PM
To: Hedman, Susan
Cc: Burke, Thomas; Kopocis, Ken; Grevatt, Peter; Harrison, Melissa; Meiburg, Stan
Subject: Re: Flint Task Force

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Sent from my iPhone

On Oct 13, 2015, at 8:11 PM, Hedman, Susan <hedman.susan@epa.gov> wrote:

> This afternoon I spoke with Stan and the Administrator -- after her call with Rep. Kildee. She asked me to revise the Task Force description to give it more of a regional flavor -- to make it clear that the Task Force is not a bunch of EPA HQ folks swooping in from DC to take over. I thought that the easiest way to accomplish this might be to say that the Regional Administrator is appointing the Task Force and to remove one of the HQ people from the Task Force. Please take a look at the revised version below -- and let me know if you are OK with this approach and if I removed the right HQ person (my thinking was that a technical lead would be in the best position to provide technical assistance.)
>
> **FLINT SAFE DRINKING WATER TASK FORCE**
>
> US EPA is committed to working with our state and local partners to ensure a safe and reliable water supply for the residents of Flint, Michigan. To achieve this, the EPA Region 5 Administrator will establish a Task Force to provide the Agency's technical expertise

through regular, but no less than weekly, conversations with designated officials* from MDEQ and the City of Flint to assist with developing and implementing a plan to secure water quality, including measures to optimize corrosion control. Task Force members will be available to consult with MDEQ and the City of Flint on site in Flint as needed. The Task Force will also coordinate as necessary with federal, state and local public health agencies to assist with protection of public health.

Specifically, the Task Force will provide technical assistance to the MDEQ and the City of Flint to reconnect the Flint system to a new source of drinking water (to be supplied by the Great Lakes Water Authority) and to optimize corrosion control for the Flint system, starting in October 2015. The Task Force will also provide technical assistance to the MDEQ and the City of Flint, as needed, in advance of and following connection of the Flint water system to a new source of drinking water (to be supplied by the Karegnondi Water Authority) and to optimize corrosion control for the Flint system, starting in 2016.

Composition of the Task Force

Region 5 Deputy Administrator Bob Kaplan, Chair

Office of Research and Development Scientist Darren Lytle

Office of Research and Development Scientist Michael Schock

Office of Water Lead and Copper Rule Technical Lead Jeff Kempic

Region 5 Water Division Deputy Director Tim Henry

Region 5 Water Division Drinking Water Section Chief Tom Poy

---

* The Governor will be asked to designate the MDEQ official; The Mayor will be asked to designate the Flint official.

Sent from my iPhone

To: Kopocis, Ken[Kopocis.Ken@epa.gov]
Cc: Distefano, Nichole[DiStefano.Nichole@epa.gov]; Burke, Thomas[Burke.Thomas@epa.gov]; Grevatt, Peter[Grevatt.Peter@epa.gov]; Harrison, Melissa[Harrison.Melissa@epa.gov]; Meiburg, Stan[Meiburg.Stan@epa.gov]
From: Hedman, Susan
Sent: Wed 10/14/2015 12:55:45 PM
Subject: Re: Flint Task Force

Thanks everybody -- I am checking with the Administrator to see if this works for her and will let you know what she thinks.

Sent from my iPhone

On Oct 14, 2015, at 6:25 AM, Kopocis, Ken <Kopocis.Ken@epa.gov> wrote:

> Per Peter's note, we're good.
>
> Thanks.
>
> **From:** Distefano, Nichole
> **Sent:** Tuesday, October 13, 2015 10:10 PM
> **To:** Hedman, Susan
> **Cc:** Burke, Thomas; Kopocis, Ken; Grevatt, Peter; Harrison, Melissa; Meiburg, Stan
> **Subject:** Re: Flint Task Force
>
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Sent from my iPhone

To: Crooks, Jennifer[crooks.jennifer@epa.gov]
Cc: Porter, Andrea[porter.andrea@epa.gov]
From: Deltoral, Miguel
Sent: Wed 10/14/2015 1:14:45 PM
Subject: RE: Question: OCCT Designations for Detroit and Chicago Groups

The same – WQP.

Miguel A. Del Toral

Regulations Manager

Ground Water and Drinking Water Branch

77 West Jackson Blvd (WG-15J)

Chicago, IL 60604

Phone: (312) 886-5253

From: Crooks, Jennifer
Sent: Tuesday, October 13, 2015 3:49 PM
To: Deltoral, Miguel
Cc: Porter, Andrea
Subject: RE: Question: OCCT Designations for Detroit and Chicago Groups

So what is the proper OCCT designation for Chicago, since they installed treatment?

From: Deltoral, Miguel
Sent: Tuesday, October 13, 2015 3:24 PM
To: Crooks, Jennifer
Cc: Porter, Andrea
Subject: Re: Question: OCCT Designations for Detroit and Chicago Groups

Yes. Detroit and Flint should have been designated as WQP by July 1998.

Miguel A. Del Toral

Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

From: Crooks, Jennifer
Sent: Tuesday, October 13, 2015 03:21 PM
To: Deltoral, Miguel
Cc: Porter, Andrea
Subject: Question: OCCT Designations for Detroit and Chicago Groups

Question below in red.

From: Deltoral, Miguel
Sent: Monday, October 05, 2015 1:42 PM
To: Poy, Thomas; Bair, Rita; Damato, Nicholas; Glowacki, Joanna; Porter, Andrea; Crooks, Jennifer; Schock, Michael; Lytle, Darren
Subject: OCCT Designations for Detroit and Chicago Groups

Hi all,

Attached are the OCCT designations for the Chicago interconnected systems and the Detroit interconnected systems.I asked Andrea to pull the SDWIS data for these two groups of systems (thank you kindly, Andrea!)

All large consecutive systems in the Chicago interconnection are appropriately designated as "system deemed optimized without OCCT" with a reason code of WQP (meaning OWQPs have been designated for them). Chicago's OCCT designation is incorrect (system designated optimized without treatment) and should be updated. So what is the proper OCCT designation for Chicago? And thus for Detroit? The reason code is WQP, as stated above, right?

All of the large systems in the Detroit interconnection are also designated as "system deemed optimized without OCCT" but they all have a reason code of '(b)(3)'. DEQ has acknowledged that the Detroit reason code of '(b)(3) is incorrect. It should be WQP and they will fix that in the next update. For whatever reason, Flint does not have anything reported for either the designation code or reason code.

Miguel A. Del Toral

Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

To: Deltoral, Miguel[deltoral.miguel@epa.gov]
Cc: Porter, Andrea[porter.andrea@epa.gov]
From: Crooks, Jennifer
Sent: Wed 10/14/2015 1:46:38 PM
Subject: RE: Question: OCCT Designations for Detroit and Chicago Groups

Sorry I'm not explaining myself very well. I understand that "WQP" is the reason code.

In your email below, you said,

"Chicago's OCCT designation is incorrect (system designated optimized without treatment) and should be updated."

So my question is, if it's not "system designated optimized without treatment", then what is it?

From: Deltoral, Miguel
Sent: Wednesday, October 14, 2015 8:15 AM
To: Crooks, Jennifer
Cc: Porter, Andrea
Subject: RE: Question: OCCT Designations for Detroit and Chicago Groups

The same – WQP.

Miguel A. Del Toral

Regulations Manager

Ground Water and Drinking Water Branch

77 West Jackson Blvd (WG-15J)

Chicago, IL 60604

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77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

To: Kelley, Jeff[kelley.jeff@epa.gov]; Hedman, Susan[hedman.susan@epa.gov]; Kaplan, Robert[kaplan.robert@epa.gov]; Hyde, Tinka[hyde.tinka@epa.gov]
Cc: Rowan, Anne[rowan.anne@epa.gov]; Beckmann, Ronna Erin[beckmann.ronna@epa.gov]; Harrison, Melissa[Harrison.Melissa@epa.gov]; Abrams, Dan[Abrams.Dan@epa.gov]; Poy, Thomas[poy.thomas@epa.gov]; Fortin, Denise[Fortin.Denise@epa.gov]; Deamer, Eileen[deamer.eileen@epa.gov]; Singer, Joshua[Singer.Joshua@epa.gov]; Arcaute, Francisco[Arcaute.Francisco@epa.gov]; Peterson, John[peterson.john@epa.gov]; Loop, Travis[Loop.Travis@epa.gov]
From: Cassell, Peter
Sent: Wed 10/14/2015 3:06:24 PM
Subject: Flint Drinking Water Clips 10/14

Below are the Flint Clips for 10/14. I apologize for the formatting of yesterday's clips – the outlook web app did not like my source formatting.

Thanks!

Pete Cassell
Press Officer
U.S. Environmental Protection Agency

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77 West Jackson Blvd (P-19J)
Chicago, IL 60604-3590
Office (312) 886-6234
Mobile (312) 859-9614

FLINT DRINKING WATER CLIPS

US. EPA Region 5 – as prepared by Peter Cassell *(ORA/OEC/PA)* on Oct. 14, 2015.

•□□□□□□□□ Water at center of Flint mayoral candidates forum with Walling, Weaver (MLive)

•□□□□□□□□ Bucks water company to aid Michigan community (Philly.com)

•□□□□□□□□ Grand Rapids Public Schools to test drinking water for lead (Michigan Radio)

•□□□□□□□□ A roundup of recent Michigan newspaper editorials (Dailypress.net)

•□□□□□□□□ DEQ Chief Wyant: "Wrongdoing of staff" not an issue in Flint water crisis (Michigan Public Radio – MSU)

•□□□□□□□□ Ex-emergency manager says he's not to blame for Flint River water switch (MLive)

•□□□□□□□□ Where are the records? Lawmaker wants answers on Flint water switch (Michigan Radio)

•□□□□□□□□ WILL GLWA TAKEOVER OF DWSD MAKE RESIDENTS OF 6 COUNTIES "DRINK THEIR OWN SEWAGE," AS IN FLINT? (Voiceofdetroit.net)

•□□□□□□□□ Politics & Prejudices: Poisoning Flint and other atrocities (Detroit Metro Times)

•□□□□□□□□ Flint mayoral debate turns on water and other issues (Michigan Radio)

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http://www.mlive.com/news/flint/index.ssf/2015/10/declare_flint_a_federal_disast.html

FLINT, MI -- Right out of the gate, Flint's two mayoral candidates tackled the subject plaguing most residents -- the water.

In the first mayoral forum since residents learned Flint's drinking water has a lead problem, Flint mayoral candidate Karen Weaver said the best way to resolve the water issues is to have the federal government declare the city a disaster area.

Weaver and incumbent Mayor Dayne Walling faced off Tuesday, Oct. 14 at St. Michael's Catholic Church in Flint. The pair covered questions on the city's water crisis, public safety, the economy, and education.

Walling said he has a plan to improve the water by fighting for the state to provide resources. He said he also plans to look to partners to help provide funding for the reconnection to Detroit.

"We all recognize that Flint has to have safe water," Walling said. "I've made the recommendation for us to reconnect to Detroit because that's the fastest way that we can bring the additional corrosion control into our system and stabilize our water. We also have to address the long term challenges with lead. This has been devastating for our community. The cost to reconnect to Detroit is $12 million."

Weaver said she thinks it is time for federal intervention.

"We need to have Flint declared as a federal disaster area, because we need some federal funds to help us fix this mess that we're in," Weaver said. "Right now we're faced with the largest public health and infrastructure crisis that Flint has ever witnessed – that we've ever seen."

Three buildings within the Flint School District have tested above the federal limits for lead in the drinking water.

Water at Eisenhower and Freeman elementary schools, along with Brownell/Holmes STEM academies tested above 15 parts per billion for lead -- the safety standard set by the federal government.

One of the schools tested at more than six times the federal limit.

The other big issue the candidates tackled was crime in Flint.

Walling said a plan is in place to reduce gun violence in the community. He said the violent crime rate is on the decline over the past three years.

"We have seen a rise in homicides this year, but we do still see a long term downward trend in that, and that's important," Walling said.

While there has been a call for more police on the streets, Walling said the important thing is getting them in areas where they are needed.

"The reality is we don't have an officer to put in every neighborhood, but we're putting them in places where they can save lives and make a difference," Walling said.

Weaver said the city needs more police, but also needs active citizens.

"One of the things I've always talked about was community policing," Weaver said. "We need to bring community policemen back to the city of Flint."

Another way to reverse the trend of escalating homicides and crime, Weaver said, is to prioritize complaints made by residents to police. She said taking the unresolved complaints seriously will help reduce crime.

"In order to reverse the trend of escalating homicide in the city of Flint, one thing that we're gonna have to do is take more seriously the complaints our residents make," Weaver said. "We got to take those seriously."

The election will be held on Nov. 3.

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http://www.philly.com/philly/news/20151014_Bucks_water_company_to_aid_Michigan_community.html#AeqXKYq8iC0sm

Last updated: Wednesday, October 14, 2015, 1:08 AM

BUCKS COUNTY

Water company to aid Michigan community

BENSALEM ZeroWater, a Bensalem-based water company, said Tuesday that it is providing water filters and support to the people of Flint, Mich., during that city's water crisis.

After long-standing issues with the smell and taste of its water, a public health emergency was declared for Flint this month after doctors at a children's hospital found that students had been drinking lead-poisoned water from the Flint River.

Even small amounts of lead can cause a variety of ailments in children and adults, experts say.

"We believe we can really help the community by providing as many filters . . . as quickly as possible," Doug Kellam, CEO of ZeroWater, said in a statement. "The team is working around the clock with United Way and others to help make this happen."

ZeroWater, working with the Flint School District and local United Way, said it would donate 5,000 portable water filters to students at Flint schools, and redistribute filters from around the country to retail stores that are affected.

ZeroWater said it produces filters that use gravity to remove a majority of the chemicals from water. Flint is reconnecting its water supply to Detroit's water system, which comes from Lake Huron. **- Khalil Williams**

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http://michiganradio.org/post/grand-rapids-public-schools-test-drinking-water-lead#stream/0

By: Tracy Samilton 10/14/15

Grand Rapids Public Schools plans to test the drinking water in its schools for lead.

The district will start with older buildings first. They are more likely to have lead pipes.

John Helmholdt is Communications Director for Grand Rapids Public Schools. He says the district had already planned to do the testing before high lead levels were found in some Flint homes and school buildings.

"This is all the more reason we should be doing it, having seen what our friends in Flint have gone through," says Helmholdt.

A Detroit Public Schools spokeswoman says the district plans to continue testing for lead on a case-by-case basis, and when water quality is questioned.

The Michigan Department of Environmental Quality is urging all school districts with older buildings to test the tap water for lead.

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http://www.dailypress.net/page/content.detail/id/946902/A-roundup-of-recent-Michigan-newspaper-editorials.html?isap=1&nav=5046

The Detroit Free Press. Oct. 8, 2015

Flint water crisis: An obscene failure of government.

There's good news: The City of Flint could soon reconnect to the Detroit Water and Sewer Department, a water source that doesn't leach lead from aging pipes into the municipal water supply.

And there's bad news: Three Flint elementary schools have water with lead levels more than 15 parts per billion, which is the limit according to U.S. Environmental Protection Agency guidelines. At one school, Freeman Elementary, water tests found lead levels of 101 ppb. Add this to months of data showing elevated lead levels in homes across Flint, and a higher percentage of children with elevated blood-lead levels.

Lead poisoning causes behavioral and developmental problems in children. It is irreversible. Pregnant women and children are most vulnerable. The U.S. Centers for Disease Control and Prevention say there is no acceptable level of lead exposure.

And in at least three Flint schools, children have been drinking lead-contaminated water for up to 16 months.

Sixteen months, as Flint residents told the state again and again that their water wasn't right. Sixteen months, as independent researchers meticulously documented rising lead levels in water and in the blood of Flint children. Sixteen months, as the state worked to disparage and discredit the work of respected scientists, even as its own data supported those findings.

At a press conference Thursday, Gov. Rick Snyder appeared chastened.

He should.

Snyder appoints the head of the Michigan Department of Environmental Quality, the agency charged with ensuring that drinking water throughout our state is safe.

In Flint, it failed.

Flint's decisions first to join a new regional water authority, and then to pump water from the Flint River — ending a decades-long relationship with Detroit's system — were made while Flint was under state oversight, during the tenure of a Snyder-appointed emergency manager charged with balancing Flint's budget. That system is justified by the governor's constitutional responsibility to attend to the health and wellness of all Michiganders.

In Flint, he failed.

This newspaper twice endorsed Snyder for governor, albeit with grave reservations. But because of the relative weakness of his opponents, the leadership he displayed in resolving Detroit's protracted financial crisis and our hope that he would use his business acumen to ensure that government better served people, he narrowly won our endorsement.

Last year, in a detailed analysis of Snyder's record, this editorial board expressed our dissatisfaction about Snyder's first term: "The governor balanced the budget at the expense of cities and school districts. His disdain for politics is inappropriate in the state's chief politician; his deficiencies as a deal-maker have sometimes resulted in terrible consequences for Michiganders."

This, we wrote, was Snyder's most profound flaw: "He has got to see people, not sums, as the bottom line of the state balance sheet."

We wrote that he rarely exhibited strong, decisive leadership, that he must "grow into a more sure-footed, principled leader." That we were fearful of what Snyder's second term could hold.

Snyder defended the state's decisions on Thursday, saying it had followed EPA and MDEQ testing protocols. The state did the minimum required, his responses implied. Why should it have to do more?

This is what Snyder does not understand. To lead a state, accountancy is not sufficient. To lead a state, a balanced budget is not sufficient. To lead a state, doing only what is required is not sufficient.

The modern vogue for paring services and cutting budgets is an insidious misunderstanding of the foundations of government. Fiscal conservationism is correct to suggest that government should recognize the value of a dollar. But it is absolutely incorrect when it considers the value of a dollar more significant than other values. A dollar saved at the expense of public safety. A dollar saved at the expense of Flint's children. A dollar saved at the expense of the public trust. These are equations that can never balance.

At this math, Snyder has consistently failed.

When Flint began to pump river water, it opted not to add a chemical that would have created a film inside its aging service pipes, preventing lead from entering the water. MDEQ signed off on that plan. Snyder's representatives have said both decisions were in progress before Flint's emergency managers were appointed, belying the reality of an emergency manager's broad authority in the city he or she is charged to lead.

That Flint has aging service lines with lead materials shouldn't have been a surprise. That Flint would need to treat the water it pumped to ensure it could flow safely through those lines shouldn't have been at issue.

Here is all we can surmise: Pumping Flint River water saved money. And that, as they say, was that.

Snyder says that his team will issue an "after action report," with recommendations about how things could have been done differently. This is a necessary step and should be conducted by a team with sufficient independence from Snyder's office — and the MDEQ — to reach impartial conclusions.

Snyder has asked the Michigan Legislature to contribute $6 million of the $12 million it will cost Flint to purchase its water from Detroit. The Charles Stewart Mott Foundation and the city itself will cover the remaining costs. The transition could be complete within two weeks. We applaud the Mott Foundation for its contribution and urge the Legislature to approve its portion of the funds required without delay.

Snyder and other officials have said Flint will continue to work to replace lead service lines. This is necessary work. The state has devoted $1 million to pay for water filters for Flint residents, another helpful measure.

People. Not sums.

Thus endeth the lesson. It is one our government should not forget. It is one Flint's children can't forget.

The Lansing State Journal. Oct. 6, 2015

No rest for BWL, Peffley.

The door on the J. Peter Lark era at Lansing's Board of Water & Light is finally closed. On Sept. 22, longtime BWL employee Dick Peffley, who had been serving as interim general manager since Lark was fired in January, was named permanent general manager of the state's largest municipally owned utility.

Is Dick Peffley the right person to lead BWL into a future that requires rebuilding public trust damaged by poor response to the December 2013 ice storm and replacing the Eckert Power Station, set to go offline by 2020?

BWL commissioners clearly think so; the decision to hire him was unanimous. Peffley is a known commodity at BWL after nearly four decades. And he knows the challenges he faces.

. The culture must change at BWL. That was a resounding conclusion from the Community Review Team commissioned by Lansing's mayor to review the utility's response to the ice storm. By many accounts, progress is happening. In one move that shows Peffley recognizes the need for change, he canceled $75,000 worth of art the previous executive team had ordered for a new customer service center this spring. He instead had the walls decorated with historic photos and posters. The move saved about $60,000 of ratepayer money. The changes must go far beyond the cosmetic. Is the utility ready for the next disaster? Is there accountability at every level?

. The power being generated at the Eckert Power Station must be replaced. The coal-fired power station, which contributes the iconic smokestacks to the Lansing skyline, generates one-third of the utility's power. As it reaches the end of its operational life, options are building a new plant, buying power elsewhere or investing in alternative or renewable energy sources. A Citizens Advisory Committee has been appointed and public meetings have been set. What comes next will depend on leadership from both Peffley and the board.

. BWL's future as a municipally owned utility is in question. Mayor Virg Bernero has said he plans to study whether assets such as BWL and City Hall should be sold as part of a comprehensive review of the city's assets and liabilities. It's not surprising that Peffley and the BWL board would oppose such an idea. Self-preservation is a strong motivator.

Yet Peffley — and his team — can't get caught up in fray. Leading BWL in the present and future is a huge job. Peffley has the institutional and industry experience to do it well. The best thing he can do is stay focused and lead with transparency and accountability.

The Traverse City Record-Eagle. Oct. 6, 2015.

Federal money nothing short of dams' bailout.

It's an offer they shouldn't refuse.

Local officials should keep eight well-known words in mind when federal officials offer to shoulder the lion's share of costs associated with the Boardman dam removal project: Don't look a gift horse in the mouth.

It's a proverb with roots about 1,600 years old and constitutes some pretty tried-and-true advice for the group of officials who learned this week that they will be asked to make a relatively minimal commitment to the future of the Boardman River dams removal project in exchange for the cash infusion.

There's no such thing as free money, but an offer U.S. Army Corps of Engineers officials will float to local officials Wednesday night is as close to free as federal cash gets. The deal — as explained by Carl Platz, a project manager for the Corps — would supply an $8 million infusion to foot the bill for most, if not all, of the Boardman dam deconstruction project.

"We went from dead in the water to essentially having a vast majority of the funding commitment from federal sources," Traverse City Mayor Michael Estes said Monday.

The cash would alleviate concerns that the overall plan to deconstruct three dams and modify a forth along the Boardman River, returning the stream to its natural state, could be derailed by either fundraising difficulties or owners reluctant to chip in for the next phase of the project — Grand Traverse County in the case of the Boardman dam.

The funding provided by the Corps and the Environmental Protection Agency waives a standard requirement that federal funding for such projects be matched in a 65 to 35 percent split — the latter paid by local funding sources, Platz said.

But that's where the strings come in.

Platz explained to Record-Eagle staff in a meeting Monday that the Corps wants officials from the City of Traverse City, Grand Traverse County and the Grand Traverse Band of Ottawa and Chippewa Indians all to put in writing their commitment to completing the final two phases of the project — the Sabin dam deconstruction and modification of the Union Street dam.

The county owns both the Boardman and Sabin dams.

At least one Grand Traverse County commissioner, Alisa Kroupa, balked at the offer and voiced concerns about committing the county to a "financial liability" for the future Sabin dam removal project.

Those are concerns easily are boiled down to dollars and cents. Officials estimate deconstruction of the Boardman dam will cost about $8 million, a bill covered by a combination of the federal cash and grants already secured by local project managers. The federal agencies also committed to spend $2.7 million on the two remaining phases of the dam removal project.

The future financial liability the county would face for its 35 percent split of Sabin dam deconstruction — an estimated $2.7 million total project cost — amounts to about $950,000 barring any local grants or donations that would minimize the bill. And there's no stipulation that the county foot the entire match alone.

Holding back a $10.7 million gift to save $950,000 simply doesn't make sense.

___

The Port Huron Times Herald. Oct. 8, 2015.

McMorran decision is best for city and college.

We apologize for the cliché, but sometimes we need reminding that doing the same thing over and over again and expecting different results is not a healthy sign.

So it is with McMorran Place in downtown Port Huron.

Throughout recent memory, city administrators and City Council have searched for ways to make complex less of a millstone around the neck of city finances. Taxpayers have fumed about the "three M's" — museums, marinas and McMorran — while taxes and utility bills increased.

The city and the McMorran Authority hired consultants and paid for studies. And the advice was the obvious. What you're doing isn't working. If you want McMorran to work, and if you want it to last, you need to do things differently.

Presciently, some of that advice — from consultants Brailsford and Dunlavey — recommended turning the junior arena into a field house. In that role, the junior arena — or pavilion as it is also known — could be used to attract a wider variety of activities to the complex during a larger part of the calendar.

That is precisely what St. Clair County Community College proposes to do with the building. And that is part of the reason that the McMorran Authority board voted Wednesday to recommend to the Port Huron City Council that it sell the junior arena to the college.

The larger part of the decision has to do with finances. Getting out from under the pavilion's operating costs and capital needs will save the city and its taxpayers hundreds of thousands of dollars over the near term and millions over a few years.

Probably more significant is what it means for the college, for downtown and the community. What SC4 proposes would mean significant new traffic in downtown Port Huron for the benefit of stores, restaurants and other businesses. It would allow the college room to build its proposed medical education center, which is a huge investment in both the college and in high-demand career fields.

The Port Huron Minor Hockey Association's proposal might do the first thing — cut city costs. In all other regards, it is doing the same thing over and over again and expecting a different result.

City Council should follow the McMorran board's recommendation and make the junior arena part of SC4.

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http://wkar.org/post/deq-chief-wyant-wrongdoing-staff-not-issue-flint-water-crisis

By: Mark Bashore 10/13/15

The Michigan Department of Environmental Quality has been feeling the heat not just over high levels of lead in Flint's drinking water, but for denying there was a problem in the face of evidence. Current State speaks with DEQ Director Dan Wyant.

State and other officials face important challenges trying to correct Flint's alarming water situation. Among the challenges: getting to the bottom of dangerously high readings of lead in several Flint schools. Among the questions: why were months of complaints of unsatisfactory water countered with assurances that it was safe?

In the meantime, at risk Flint residents have been getting bottled water and free lead filters. Plans are also moving forward to reconnect the city to Detroit water. Those measures are part of 10-point plan put forth by Gov. Rick Snyder.

One agency at the center of the Flint drinking water crisis is the Michigan Department of Environmental Quality. Current State talks with DEQ Director Dan Wyant.

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http://www.mlive.com/news/flint/index.ssf/2015/10/ex_emergency_manager_earley_sa.html

By Ron Fonger | rfonger1@mlive.com
on October 13, 2015 at 3:00 PM, updated October 13, 2015 at 4:24 PM

FLINT, MI — Former emergency manager Darnell Earley says he's not to blame for the decision to use the Flint River as the city's source of drinking water.

Earley, who served as Flint's emergency manager from September 2013 until January 2015, said in an email to The Flint Journal-MLive on Tuesday, Oct. 13, that the water source decision was made months before he was appointed to run the city by Gov. Rick Snyder.

The Michigan Democratic Party called Tuesday on Snyder to fire Earley from his current position as emergency manager of Detroit Public Schools based on his position in charge in Flint when the switch in water source was made.

Earley said he had no reason at the time to second-guess what appeared to have been a consensus decision.

"The decision to separate from (the Detroit Water and Sewerage Department) and go with the Karegnondi Water Authority, including the decision to pump Flint River water in the interim, were both a part of a long-term plan that was approved by Flint's mayor, and confirmed by a City Council vote of 7-1 in March of 2013 — a full seven months before I began my term as emergency manager," Earley's email says.

Although the Flint City Council voted in March 2013 in support of moving to the KWA pipeline — a new pipeline that would serve the region with Lake Huron water — there is no record that the council voted to use the Flint River as a short-term drinking water source.

Earley, who toasted the switch to the river with city leaders in a ceremony in April 2014, said it was his "responsibility to implement the previously accepted and approved plan" since the city's contract with the Detroit water system expired during his term as emergency manager.

"It did not fall to me to second guess or to invalidate the actions that were taken prior to my appointment," his statement says.

The state Democrats said in a news release that Earley was in charge of Flint "when the decision was made to switch the city to unsafe drinking water."

While Earley oversaw the switch, the decision to switch was signed by Flint's previous state-appointed emergency manager, Ed Kurtz.

Sara Wurfel, a spokeswoman for Snyder, said in a statement Tuesday, Oct. 13, the decision to use the Flint River "was pushed or supported by the city and community" and said the city had no choice but to find another source of water after the Detroit Water and Sewerage Department terminated Flint's contract to continue purchasing water under the terms of its expired contract.

"We also know Darnell cares deeply about the kids and communities he serves," Wurfel's email said. "We're focused on solving this challenging infrastructure issue, moving forward quickly and doing everything we can to ensure Flint has safe drinking water. ..."

The Democrats' statement said in part, "If poisoning children wasn't bad enough, after Earley failed the citizens of Flint, the governor inexplicably rewarded him with another appointment — emergency manager for Detroit Public Schools — where he is now responsible for the education of nearly 50,000 students."

Flint Mayor Dayne Walling said Tuesday that the vote to become a partner in the KWA, a new regional water authority, should not be confused with a vote to use the Flint River as a temporary source of drinking water — a vote that never happened.

In contrast to using the river, the city also could have negotiated a short-term contract to continue buying water from DWSD, for example.

"No resolution brought before myself or the City Council by any emergency manager (made) the Flint River the temporary source," Walling said.

Kurtz signed an order March 29, 2013, for Flint to eventually purchase water from the KWA pipeline after it was finished, but that order says nothing about the city's use of the river.

In June 2013, Kurtz signed another order — this one to enter into a contract with Lockwood, Andrews & Newnam Inc. for professional engineering services to put the Flint water treatment plant into operation "using the Flint River as a primary drinking water source for approximately two years and then converting to KWA delivered lake water when available. ..."

In September 2013, a new emergency manager — Michael Brown — also approved an order for a contract among Flint, Genesee County and the KWA.

Flint began using the Flint River in late April 2014.

Last week, after warnings from researchers and doctors of elevated lead levels in drinking water and the blood of children since the switch, Snyder announced a plan to finance the purchase of nine months of water from the Detroit water system for Flint.

The city remains a partner in the KWA pipeline plan and expects to use water from that pipeline, which is under construction and expected to serve the region with water from Lake Huron after it is completed in 2016.

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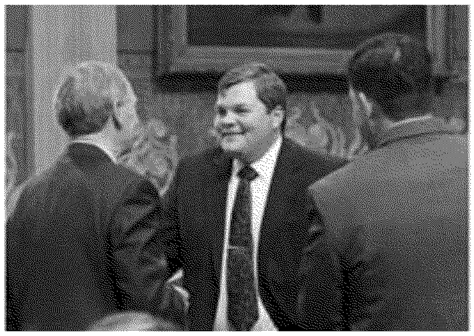
http://michiganradio.org/post/where-are-records-lawmaker-wants-answers-flint-water-switch#stream/0

By: Steve Carmody 10/13/15

A state lawmaker is heading to court to force the city of Flint and a state agency to release documents related to the decision to make the Flint River the city's drinking water source.



State Rep. Phil Phelps, D-Flushing.

Credit Courtesy of the office of State Rep. Phil Phelps

A year and a half ago, the city switched from the Detroit Water and Sewerage Department to the Flint River.

Initially, there were complaints about the smell, taste, and appearance of the city's drinking water. More problems, including high levels of lead in the water in many homes, led Gov. Rick Snyder to address a $12 million plan to return the city to Detroit water, until a new pipeline from Lake Huron is completed next year.

But State Rep. Phil Phelps, D-Flushing, wants to know more about the decision-making process that took place before the switch. He's filed Freedom of Information Act requests with both the city and the Michigan Department of Environmental Quality.

Specifically, Phelps wants to see the permits granted to make the switch possible.

However, the city and the MDEQ have rejected Phelps FOIA requests. They say the documents he requested don't exist.

"For them to say there's other documents I simply didn't reference by name is disingenuous," says Phelps.

Phelps is asking two courts to weigh in.

By the end of this week, he plans to file a lawsuit in the Court of Claims against the MDEQ and in circuit court against the city of Flint.

Flint City Administrator Natasha Henderson issued a statement:

"The City of Flint is operating as permitted by the MDEQ, however the specific documents requested by Rep. Phelps do not exist. As the City's full-time back up water source during the previous contract with DWSD, the Flint River was already an approved drinking water source. This issue could be as simple as a miscommunication on what was sought by Rep. Phelps and the City is willing to meet with his office to clarify and provide more information."

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http://voiceofdetroit.net/2015/10/13/will-glwa-takeover-of-dwsd-make-residents-of-6-counties-drink-their-own-sewage-as-in-flint/

Posted on 10/13/2015 by Diane Bukowski

"Republican governor took over the city and then made its citizens drink their own sewage from the Flint River … –Michael Moore, Flint native, filmmaker

EM Darnell Earley disconnected Flint's water system, is now EM over the Detroit Public Schools; both Rep. and Dem. leaders have destroyed DPS

GLWA won't take over Detroit six-county system until Jan. 1, 2016; meanwhile petitions circulate to mandate Detroit referendum on contract

Flint Water Makes us Sick
WHERE'S THE ...al ...ERnment

Flint water protest Oct. 12, 2015/Photo: Record-Eagle

By Diane Bukowski

October 13, 2015

(VOD; there is a news story below this from weather.com which summarizes

events with Flint water.)

DETROIT — Michigan Governor Rick Snyder announced Oct. 8 that he will "allow" the city of Flint to reconnect its water supply "with the Great Lakes Water Authority (GLWA);" city officials said the move could take place in two weeks.

Studies have shown that not only has Flint's separated system resulted in water contaminated with fecal bacteria, but also with lead. Dr. Mona Hanna-Atisha of Hurley Medical Center in Flint (in video above) said her study showed lead levels in the blood of Flint's majority-Black children jumped from 2.5 percent to 6.3 percent beginning in Jan. 1, 2015 to Sept. 15 this year, in certain zip codes.

"I'm in full support of the return to the Great Lakes Water Authority," Snyder said during a press conference. "We all care about the citizens of Flint."

Snyder neglected to acknowledge that the contract between the City of Detroit and the GLWA is not in effect yet, as GLWA chair Robert Daddow repeatedly says when confronted with difficult questions.

On Sept. 29, he responded to a DWSD engineer's complaint regarding the lay-off of licensed engineers there by saying, ". . .as you may not be aware, the GLWA is not yet responsible for the operations of the regional water and sewer operations at this point in time; the DWSD BOWC [Board of Water Commissioners] is responsible. While the lease was signed in June 2015, it had a number of 'conditions precedent' that must be satisfied prior to the lease becoming effective and the operations transferring from DWSD to GLWA."

OUR WATER!
OUR VOTE!
Water is a
Human Right.

The "drop-dead" date for the takeover is Jan. 1, 2016. Meanwhile, the Coalition to Save the Detroit Water and Sewerage Department is circulating state-mandated petitions demanding that a referendum be placed on Detroit's ballot to allow Detroiters to vote on the takeover of their system. If they vote “NO,” the contract would be invalidated under provisions of PA 233 of 1955. (See links below story for more information on the “Our Water Our Vote” campaign.)

Whether the citizens of Flint will benefit from being part of the GLWA remains open to serious question. The likelihood that they along with residents of all six counties under the GLWA will be in danger of exposure to contaminated water would increase greatly under the GLWA board.

The formation of the GLWA was part of the state-introduced, unconstitutional bankruptcy filing for the City of Detroit. A representative of Gov. Snyder sits on the GLWA board, along with one representative each from Oakland, Macomb, and Wayne Counties, and two from Detroit, all with connections to contractors who plan to profit from the transformation. The Detroit City Council will no longer approve such contracts and is currently not doing so for DWSD, according to Council President Brenda Jones.

U.S. District Court Judge Sean Cox oversaw the proposal to form the GLWA during the bankruptcy proceedings. During his ongoing tenure as federal overseer of DWSD, 41 percent of its workers have been laid off, according to its director Sue McCormick, also interim director of the GLWA. The BOWC recently negotiated an agreement with the state Department of Environmental Quality (DEQ) to increase the levels of certain contaminants allowed in water from the DWSD.

The GLWA and the BOWC met jointly July 9, to approve frightening plans to downsize the GLWA significantly from the current DWSD, including:

Dropping spending for water main replacement to $25 million a year, enough to repair only one one percent of the lines;

Shutting down treatment plants and booster stations;

Reducing capital improvement spending from $9 billion to $2.9 billion;

Rescission of planned upgrades for 14 sites;

Reducing GLWA’s daily pumping capacity from 1,760 million to 1,040 million gallons;

Reduction of water intake sites from five to three.

Detroit drivers struggle to safety after their cars were submerged in flood of Aug. 2014.

DWSD’s Wastewater Treatment Plant (WWTP), currently run by contractor EMA, already caused a major crisis in August, 2014, according to DWSD retirees who worked there. They said the huge floods of that month in Detroit and its suburbs, as well as the water crisis in Toledo, Ohio, were directly linked to the cessation of 24/7 maintenance of sewage pumps and other equipment at the WWTP, the largest such facility in the U.S.

“They have reduced staffing to a skeleton crew,” Mike Mulholland, Pres. of AFSCME Local 207, said at the time. “Although there was a torrential rain Monday, the sewage pumps already were not working properly due to minimal maintenance. It is EMA’s intention to strip the plant down and run it remotely as much as it can. Instead of 24/7 maintenance, they only check equipment every few days. The pumping stations at the plant, the incinerators, and other equipment are close to catastrophic failure.”

DWSD retiree Bill Davis said three of the major sewage pumps at the WWTP were not working, having become clogged with sewage and seriously damaged.

On Oct. 11, a coalition of Detroiters under the banner of TRUE, an organization founded by activist Baxter Jones, held a prayer vigil at the Detroit’s U.S. Department of Justice offices on Michigan Avenue in the Federal Building calling for the USDOJ to intervene to stop Michigan’s emergency manager (EM) system. Most of the state’s majority-Black cities and school districts, including the Detroit Public Schools, are run by the state.

Darnell Earley, as EM of Flint, ordered its disconnection from the DWSD system in 2013 “to save money.” He is now EM of the Detroit Public Schools (DPS) and is continuing slash-and-burn policies of the state which have left Detroit children with virtually no public, neighborhood schools since 2005. Those policies have been carried out under Governors John Engler (R), Jennifer Granholm (D) and Gov. Snyder (R).

“It is a very sad day to learn our decision makers decided to compromise the safety of children and child bearing women in the name of greed,” Jones, who has been on a justice lead hunger strike since September 13th, said in a statement. “They have bullied us, and we must pray for the victims and stand fast in solidarity with them.”

Many water activists see the main problem as “Republican” Gov. Rick Snyder, as Mike Moore referred to him in his comment.

In this election year, during which U.S. Representatives and Senators and new candidates from the Republican and Democratic parties are sparring, many activists are being caught up in the “Go Left America” agenda backed by the Democratic Party.

However, the current Democratic administration of U.S. Pres. Barack Obama backed the Detroit bankruptcy during hearings, and earlier refused to conduct an investigation of Voting Rights Act violations in Public Act 4, the predecessor to Michigan’s current PA 436. History has shown that only action by the people themselves changes their circumstances, like the campaign for a people’s vote on the GLWA contract, the rebellions against police killings in Baltimore and elsewhere, and the Montgomery Bus Boycott during the Civil Rights Movement.

For more information on the Our Water Our Vote campaign, including links to petitions themselves, fliers, and instructions for circulating, see:

http://voiceofdetroit.net/2015/09/19/alert-still14-weeks-to-stop-detroit-water-take-over-more-shut-offs-rate-hikes-lay-offs-pollution/

http://voiceofdetroit.net/2015/07/10/regional-water-czars-plan-permanent-shut-offs-to-large-parts-of-detroit-while-increasing-rates/

http://voiceofdetroit.net/2014/08/21/near-catastrophic-failure-of-detroit-sewage-pumps-caused-detroit-floods-toledo-water-crisis-city-retirees-say/

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http://www.metrotimes.com/detroit/politics-and-prejudices-poisoning-flint-and-other-atrocities/Content?oid=2375494

By Jack Lessenberry 10/14/15

Don't you love how our politicians and other so-called leaders refuse to take responsibility for their screw-ups?

Dennis Williams, for example, the roly-poly United Auto Workers union president. He began this round of auto contract talks this summer by giving Fiat Chrysler emperor Sergio Marchionne a big bear hug. Then they negotiated a contract that all the industry and union leaders agreed was a beaut.

Everybody loved it, except the churlish workers themselves. Somehow they were bothered by the fact that there was no plan to phase out the infamous two-tier pay system.

The workers thought they'd at least been promised a cap on the number of lower-paid Tier II workers. They didn't get it. They weren't thrilled when news leaked out that Chrysler planned to move production of two key models to Mexico, and the union didn't protest. They were given a new health care co-op plan they fear will cost them more, and which their union didn't bother to explain how it worked.

Basically, their leaders said, "Take this, you slobs. We know what's good for you." Guess what. Those actually doing the work had the guts and strength to say no. Did Williams then apologize, vow to learn from his mistakes, maybe even make an effort to talk with some real live autoworkers?

That's what he should have done.

Instead, he said, "We don't consider this a setback. We consider (this) a part of the process." What bullshit!

But that pales in comparison with what happened in Flint. Ask yourself this: What do you suppose would've happened if some crisis required Gov. Rick Snyder to put an emergency manager in a place like Birmingham or Bloomfield Hills?

A town, that is full of white people who vote Republican. Let's say that manager stopped buying Detroit water to save money, and announced the city would take water out of the Rouge River instead. Soon, the residents complained the water smelled bad, tasted funny, and was making them sick.

Later, after the emergency manager had lied and said the water was just as safe, researchers found *E. Coli* and other harmful bacteria in the water. Next, they discovered the chemicals the city was using to kill the bacteria gave people an elevated risk of cancer. Finally, it was shown that the river water was so corrosive that it caused lead to leach out of old city pipes.

Finally, babies and small children began showing up with lead poisoning. Does anyone really think state officials wouldn't have sprung into action, and immediately intervened?

My guess is that even before the lead poisoning was discovered, a way and funds would've been found to hook the city back up to Detroit water, and the emergency manager would've been indicted. But alas, all of that happened in Flint, where the people affected are poor and largely black.

In fact, the lead poisoning was only uncovered after former MT staffer Curt Guyette got an internal EPA memo that convinced him to "believe there was a real problem with lead in the city water." The state and the city denied that, saying their tests showed the water was fine.

So in a fine bit of unsung heroism, Guyette, a coalition of residents, and Mark Edwards, a professor at Virginia Tech, came up with a plan to test the water at nearly 300 homes.

Edwards got a grant from the National Science Foundation; Guyette and his present employer, the ACLU, helped coordinate and conduct the study.

"In a little over two weeks, we tested about four times as many homes as the city tested in six months," he told me. There was indeed lead in the water. A week later, the hospital study "both built upon and validated our study, which Brad Wurfel (the communications spokesman, aka administration mouthpiece at the Michigan Department of Environmental Quality) was trying his best to discredit."

Guyette added, "If it hadn't have been for this unprecedented effort ... kids in Flint would still be getting lead-poisoned because the city and MDEQ would still be assuring everyone that the water was safe."

That's inspiring, but Guyette is wrong about one thing: Kids are still getting poisoned. Despite the state's earlier assurance that the water was fine, the Snyder administration had quietly been working to get a donor to buy water filters to be distributed free by churches in poor areas.

The Flint Journal said the state told the pastors to keep quiet about it. After it was clear that it was Snyder's emergency manager who was responsible for the switch, the governor dragged his feet for a few days, made some usual vague comments, and then announced with some fanfare that the state would provide a paltry $1 million to buy more filters and help "improve corrosion controls."

What about switching back to much safer Detroit water? Mayor Dayne Walling, who is running for re-election, said he had no interest in that, thank you.

After his office was besieged by angry residents, he said he was still "considering it," but said it would cost the city $2 million a month it doesn't have.

Pat Clawson, a former investigative reporter for CNN who lives in the Flint area, told me the mayor's "handling of this crisis shows he is absolutely unfit to hold public office."

Snyder, of course, didn't offer to help get Flint residents reconnected to safe water again. I wonder if, just out of curiosity, someone might ask both of them what the cost of a bunch of irreversibly brain-damaged children might be?

Mass Shooting Update

What struck me most about the school shooting in Oregon was that the media, even *The New York Times*, now have a format for every new mass gun atrocity.

News story the first day, with sidebar on the terrified ones who hid and heard the gunshots. The next day, profiles of the shooter and the slain, reports on the angry reaction of the president, with a few comments from the pro-gun nuts.

Yes, they've got it down pat. The fact is that we love our guns and our potential ability to murder far more than we do our children, and we might as well admit it.

We could, of course, stop nearly all these killings, if we had sane laws that took all these guns away. Hey, fanatics: You heard that right. I indeed *want* the government to take your guns away, except maybe those you keep in a hunting lodge.

Detroit News editorial page editor Nolan Finley wrote a column after Oregon in which he wondered if President Obama wanted to impose the same horribly restrictive gun laws on this country that Great Britain and Australia have.

"Owners of all weapons have to be licensed and the permits expire after five years (!)

You have to "then wait nearly a month before receiving the firearm," the horrified Finley said.

Well, I don't know what Obama wants, but that sounds pretty good to me. What Finley didn't mention was that 33,169 Americans died from guns in 2013.

In Australia in 2012, the total was 226. In Great Britain the year before, there were 59 firearms-related murders.

See what can happen when you lose a little "freedom?"

Why, I'll bet those Australian and British commies even force local governments to provide clean and unpolluted drinking water. So I say, let's sign up for more repression.

Tens of thousands who won't die may be glad we did.

Jack Lessenberry is head of the journalism program at Wayne State University and the senior political analyst for Michigan Public Radio.

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http://michiganradio.org/post/flint-mayoral-debate-turns-water-and-other-issues#stream/0

By: Steve Carmody 10/14/15

Last night's mayoral debate in Flint included several personal attacks between the candidates.

Incumbent Mayor Dayne Walling and challenger Karen Weaver debated for more than an hour at St. Michael's Catholic Church

Credit Steve Carmody / Michigan Radio

The moderators questioned incumbent Mayor Dayne Walling and challenger Karen Weaver for over an hour on several issues.

But the main issue was Flint's ongoing water problems.

Since switching to the Flint River for the city's drinking water, there have been numerous problems, including elevated lead levels in the water at many Flint homes.

Karen Weaver repeatedly linked incumbent Mayor Dayne Walling to the city's ongoing drinking water problems and to potential long-term effects of elevated lead levels in children.

“If you care so much about the kids, you would have spoken up about the lead that’s in the water,” Weaver charged.

Walling responded that he was “offended” by Weaver’s charge.

Challenger Karen Weaver repeatedly linked incumbent Mayor Dayne Walling to Flint's drinking water problems. Walling stressed his experience in office.

Credit Steve Carmody / Michigan Radio

He admitted he wished the city had returned to Detroit water sooner. But he added he’s working to turn make that change happen.

“You have to look at actions, because actions speak a lot louder than words,” responded Walling.

The incumbent mayor stressed the need for someone with experience to lead Flint during these difficult times, and made note of the connections he’s made in office.

“I’ve got the relationships with the White House. I’ve got the ability to get to the governor,” Walling said, reminding the dozens of people listening to the debate that Gov. Snyder was just in Flint to announce a plan to return the city to Detroit water.

But Karen Weaver noted another action involving the governor with which Mayor Walling has experience.

“I don’t have the kind of experience you have because your experience is what got us an emergency manager,” Weaver said.

The two candidates also answered questions about crime, schools, and economic development.

Next month, Flint voters will decide whether they want to give Dayne Walling another four years in the mayor’s office, or if they are willing to give political newcomer Karen Weaver a chance instead.

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To: Schock, Michael[Schock.Michael@epa.gov]; Crooks, Jennifer[crooks.jennifer@epa.gov]; Moriarty, Edward[Moriarty.EdwardJ@epa.gov]
Cc: Poy, Thomas[poy.thomas@epa.gov]; Lytle, Darren[Lytle.Darren@epa.gov]; Porter, Andrea[porter.andrea@epa.gov]; Shoven, Heather[shoven.heather@epa.gov]; Wroble, Amanda[wroble.amanda@epa.gov]; Schupp, George[schupp.george@epa.gov]; Wesolowski, Dennis[wesolowski.dennis@epa.gov]
From: Deltoral, Miguel
Sent: Wed 10/14/2015 4:12:44 PM
Subject: RE: HQ partnership with Kellogg Foundation (MI) on lead in schools

Mike/Darren – We were just talking about the sampling here and I very strongly suggest that there be a presentation to the folks in Flint (health depts., residents, press) that explains what the sampling is and what it is not (e.g., exposure assessment, treatment evaluation, diagnostics…). This has to be dealt with first/upfront or we are going to have to be explaining the differences to folks over and over. The same with the AL (not health-based). I also think for the sake of those that do not live in the DW world, that we provide a brief overview of corrosion control treatment (types, effectiveness, limitations/challenges).

All: Please keep our lab folks (Amanda, George, Dennis) in the loop on the sampling plans so they know what's being discussed.

Miguel A. Del Toral

Regulations Manager

Ground Water and Drinking Water Branch

77 West Jackson Blvd (WG-15J)

Chicago, IL 60604

Phone: (312) 886-5253

From: Schock, Michael
Sent: Wednesday, October 14, 2015 9:24 AM
To: Deltoral, Miguel; Crooks, Jennifer; Moriarty, Edward
Cc: Poy, Thomas; Lytle, Darren; Porter, Andrea; Shoven, Heather
Subject: RE: HQ partnership with Kellogg Foundation (MI) on lead in schools
Importance: High

Miguel/Jennifer/Ed;

I found this document that Francine (I believe) used to summarize the deviations in the Battle Creek sampling protocol from the 3Ts.

There are three things I would note, and also offer a reminder that Darren and I would be happy to discuss the technical issues with how to design/modify building sampling protocols depending on the desired questions to be answered, with any of the Flint staff, state or county health department staff, or interested physicians.

•□□□□□□□ First, a reminder that the purpose of the 3Ts protocol is to help locate and identify lead sources that could pose a health danger. The 20 ppb level is NOT A HEALTH-BASED SAFE LEVEL. I have seen this misrepresented or misinterpreted in statements to the press, in the press itself, in engineering reports, you name it. All over the country. A very common, but very important, mistake.

•□□□□□□□ The trigger level for remediation, therefore, should be defined by the purpose of the investigation and the goals of the health agency or entity conducting the investigation. This is NOT EXPOSURE ASSESSMENT SAMPLING, but it could be (depending on stagnation time before sampling) an assessment of the level of worst risk for the first child or few children in line using that individual tap/outlet.

•□□□□□□□ Third, the volumes could be adjusted, based on the types of outlets (long necked faucets versus bubblers, for instance, or water coolers versus automated water conservation faucets). It had been observed in some prior work by Region 3, that using 250 mL, it was often difficult to differentiate if a lead source was the faucet, the connection tubing, or the shut-off valve at the sink. Money was wasted replacing faucets when the real lead-emitting culprit was the shut-off valve. Therefore, as a first approximation to try to isolate the faucet from the valves, a common situation in schools and buildings, we broke the 250 mL sample into two 125 mL samples. There were cases found in Battle Creek where the 2nd 125 mL sample was higher in lead than the first 125 mL, so we belive that this was at least partially successful. Other sensible adjustments are equally justifiable.

We can furnish some papers and presentations we have done that shed a little more light on sampling issues and protocols, if of interest. We also have found that analyzing for zinc, copper and iron simultaneously on the same sample, can sometimes be helpful in more correctly identifying the source of the lead (eg. Brass device, soldered joints, lead accumulated on galvanized pipe scales).

I know there was a final report developed for the project, but all EPA participants declined to be an official co-author of the report (for an assortment of reasons). I know I saw a draft, but I don't have a final copy (that I can find), either. I am confident that the note attached accurately describes the modifications we intended.

--Mike

From: Deltoral, Miguel
Sent: Tuesday, October 06, 2015 8:36 AM
To: Moriarty, Edward; Crooks, Jennifer
Cc: Poy, Thomas; Lytle, Darren; Schock, Michael; Porter, Andrea; Shoven, Heather
Subject: Re: HQ partnership with Kellogg Foundation (MI) on lead in schools

Folks - Please keep Darren and Mike in the loop on any of these discussions. If you get a copy please send it my way as well. I don't recall ever seeing it.

Miguel A. Del Toral

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Phone: (312) 886-5253

From: Moriarty, Edward
Sent: Tuesday, October 6, 2015 06:50 AM
To: Crooks, Jennifer
Cc: Deltoral, Miguel; Poy, Thomas
Subject: RE: HQ partnership with Kellogg Foundation (MI) on lead in schools

Hi Jennifer,

We have been in contact with Kellogg trying to get a copy of the latest version of the protocol. I will try to find out the status.

BTW, Francine did retire only moved to another office – Indian Affairs I believe.

Ed

Ed Moriarty - Team Lead

OGWDW - Protection Branch

1200 Constitution Ave., NW

Washington, DC 20460

202-564-3864

From: Crooks, Jennifer
Sent: Monday, October 05, 2015 6:24 PM
To: Moriarty, Edward
Cc: Deltoral, Miguel; Poy, Thomas
Subject: HQ partnership with Kellogg Foundation (MI) on lead in schools
Importance: High

Hi, Ed. I remember back in 2012, Francine St. Denis, partnered with the Kellogg Foundation in MI, to sample for lead in schools at Calhoun County Health Dept (Paul Makoski). MDEQ, community water program (Richard Benzie) is looking for the sampling protocol that was used in that sampling effort. We at Region 5 were not involved in this project, so we did not receive a final report—if there was a final report. I'm pretty sure Francine has retired, so I'm wondering if you are aware of a final report, which would document the sampling protocol—not just first draw samples, but sequential sampling.

Thank you for checking this out, Ed. The State is looking for this tomorrow, if possible—yes, it's related to Flint.

Jennifer

Jennifer Kurtz Crooks

Michigan Program Manager

Ground Water and Drinking Water Branch

U.S. EPA Region 5

77 West Jackson Blvd.

Chicago, Illinois 60604

312.886.0244

crooks.jennifer@epa.gov

312.582.5853 (fax)

To: Deltoral, Miguel[deltoral.miguel@epa.gov]; Crooks, Jennifer[crooks.jennifer@epa.gov]; Shoven, Heather[shoven.heather@epa.gov]
Cc: Bair, Rita[bair.rita@epa.gov]; Poy, Thomas[poy.thomas@epa.gov]; Damato, Nicholas[damato.nicholas@epa.gov]
From: Porter, Andrea
Sent: Wed 10/14/2015 6:04:11 PM
Subject: flint article link --> radio interview with Dan Wyant (MDEQ)

Hi All,

You can follow the link below to a MI Radio interview with Dan Wyant that accompanies this article (below). The interview is ~17 minutes long, and is much more in-depth than what is summarized in the article.

Source: http://michiganradio.org/post/mdeq-director-flint-water-crisis-has-shaken-faith-government#stream/0

MDEQ director: Flint water crisis has shaken faith in government

By Stateside Staff · 20 hours ago

State and local officials have done an about-face when it comes to Flint's water crisis. For months, residents and even experts who raised concerns about the water's safety were dismissed. That's until mounting evidence – especially about high lead levels in kids – made the critics impossible to ignore.

But Michigan's top environmental regulator says no one should lose their job. "I guess what is at issue is experience rather than wrongdoing," Michigan Department of Environmental Quality Director Dan Wyant told Stateside's Cynthia Canty. Wyant says he worries the Flint water crisis has caused people to lose faith in the state's ability to protect them. “I do. I think trust is going to be a significant issue for us,” Wyant said. “The only way we build back trust is demonstrating that the water's safe.”

Wyant also acknowledged that experts outside government who sounded the alarm – some of whom were discredited at the time by state officials – deserve credit for bringing the water problems to light. "And so if there was any disrespect or discredit for that I have to apologize and I have to take responsibility for that and so I am addressing it," Wyant said. "Clearly this is a real issue." But Wyant says his agency followed federal law when it comes to ensuring safe water. "Those protocols were followed," Wyant said. "What's at issue is whether those protocols are appropriate."

Wyant says the agency is committed to learning from what went wrong in Flint. But he says no one, including himself, should lose their job over what happened. "What is at issue is experience, rather than wrongdoing," Wyant said. Problems with Flint's water system emerged shortly after the city switched from Detroit's system to the Flint River to save money in 2014. The city is expected to return to Detroit water soon.

Thanks,

Andrea Porter

Environmental Engineer

Ground Water & Drinking Water Branch

U.S. EPA, Region 5 (WG-15J)

77 W. Jackson Blvd.

Chicago, IL 60604

Phone: 312-886-4427

Fax: 312-697-2656

To: Werbach, Kristine[werbach.kristine@epa.gov]
Cc: Porter, Andrea[porter.andrea@epa.gov]
From: Crooks, Jennifer
Sent: Wed 10/14/2015 9:49:18 PM
Subject: FW: Question: OCCT Designations Groups

Hi, Kris. Under the LCR milestones, it is my understanding that systems are to have an "OCCT designation" and then a reason code. I'm wondering what are the choices in the drop down menu in SDWIS for "OCCT designation"?

Jennifer

From: Crooks, Jennifer
Sent: Wednesday, October 14, 2015 8:47 AM
To: Deltoral, Miguel
Cc: Porter, Andrea
Subject: RE: Question: OCCT Designations for Detroit and Chicago Groups

Sorry I'm not explaining myself very well. I understand that "WQP" is the reason code.

In your email below, you said,

"Chicago's OCCT designation is incorrect (system designated optimized without treatment) and should be updated."

So my question is, if it's not "system designated optimized without treatment", then what is it?

From: Deltoral, Miguel
Sent: Wednesday, October 14, 2015 8:15 AM
To: Crooks, Jennifer
Cc: Porter, Andrea
Subject: RE: Question: OCCT Designations for Detroit and Chicago Groups

The same – WQP.

Miguel A. Del Toral

Regulations Manager

Ground Water and Drinking Water Branch

77 West Jackson Blvd (WG-15J)

Chicago, IL 60604

Phone: (312) 886-5253

From: Crooks, Jennifer
Sent: Tuesday, October 13, 2015 3:49 PM
To: Deltoral, Miguel
Cc: Porter, Andrea
Subject: RE: Question: OCCT Designations for Detroit and Chicago Groups

So what is the proper OCCT designation for Chicago, since they installed treatment?

From: Deltoral, Miguel
Sent: Tuesday, October 13, 2015 3:24 PM
To: Crooks, Jennifer
Cc: Porter, Andrea
Subject: Re: Question: OCCT Designations for Detroit and Chicago Groups

Yes. Detroit and Flint should have been designated as WQP by July 1998.

Miguel A. Del Toral

Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

From: Crooks, Jennifer
Sent: Tuesday, October 13, 2015 03:21 PM
To: Deltoral, Miguel
Cc: Porter, Andrea
Subject: Question: OCCT Designations for Detroit and Chicago Groups

Question below in red.

From: Deltoral, Miguel
Sent: Monday, October 05, 2015 1:42 PM
To: Poy, Thomas; Bair, Rita; Damato, Nicholas; Glowacki, Joanna; Porter, Andrea; Crooks, Jennifer; Schock, Michael; Lytle, Darren
Subject: OCCT Designations for Detroit and Chicago Groups

Hi all,

Attached are the OCCT designations for the Chicago interconnected systems and the Detroit interconnected systems.I asked Andrea to pull the SDWIS data for these two groups of systems (thank you kindly, Andrea!)

All large consecutive systems in the Chicago interconnection are appropriately designated as "system deemed optimized without OCCT" with a reason code of WQP (meaning OWQPs have been designated for them). Chicago's OCCT designation is incorrect (system designated optimized without treatment) and should be updated. So what is the proper OCCT designation for Chicago? And thus for Detroit? The reason code is WQP, as stated above, right?

All of the large systems in the Detroit interconnection are also designated as "system deemed optimized without OCCT" but they all have a reason code of '(b)(3)'. DEQ has acknowledged that the Detroit reason code of '(b)(3) is incorrect. It should be WQP and they will fix that in the next update. For whatever reason, Flint does not have anything reported for either the designation code or reason code.

Miguel A. Del Toral

Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

To: Klevs, Mardi[klevs.mardi@epa.gov]; Master, Edward[master.edward@epa.gov]; Poy, Thomas[poy.thomas@epa.gov]; Harris, Kimberly[harris.kimberly@epa.gov]; Deltoral, Miguel[deltoral.miguel@epa.gov]; Singer, Joshua[Singer.Joshua@epa.gov]
From: Suero, Maryann
Sent: Thur 10/15/2015 12:47:55 PM
Subject: FYI / Detroit News: Flint, Michigan, water tests suggest statewide lead issues

Just catching up on articles from earlier in the week…EPA used to have the 3Ts toolkit for helping schools assess for and communicate about lead in their DW. It's difficult to find with the new website design but most of the toolkit is at *http://water.epa.gov/infrastructure/drinkingwater/schools/guidance.cfm#non*

Flint, Michigan, water tests suggest statewide lead issues

State and local officials hope switching Flint back to Detroit's water system, announced Thursday, will solve lead contamination issues there in the short run, but the situation exposed a health issue that may be happening in other parts of the state.

Water sampling at Flint's schools discovered a few instances of lead levels that exceed the federal safety standard. The findings raised the possibility that lead problems may exist in other parts of the state, including Metro Detroit…

… State officials plan to contact all schools in the state, urging them to assess their lead levels in drinking water…

Detroit News, MI

http://www.detroitnews.com/story/news/politics/2015/10/08/flint-water/73623958/

To: Suero, Maryann[suero.maryann@epa.gov]; Klevs, Mardi[klevs.mardi@epa.gov]; Master, Edward[master.edward@epa.gov]; Poy, Thomas[poy.thomas@epa.gov]; Harris, Kimberly[harris.kimberly@epa.gov]; Singer, Joshua[Singer.Joshua@epa.gov]
Cc: Schock, Michael[Schock.Michael@epa.gov]; Lytle, Darren[Lytle.Darren@epa.gov]; Wroble, Amanda[wroble.amanda@epa.gov]; Schupp, George[schupp.george@epa.gov]; Wesolowski, Dennis[wesolowski.dennis@epa.gov]
From: Deltoral, Miguel
Sent: Thur 10/15/2015 1:03:57 PM
Subject: Re: FYI / Detroit News: Flint, Michigan, water tests suggest statewide lead issues

Hi Maryann,

Just FYI - Mike Schock (ORD) and I have been advocating some tweaks to the 3Ts protocol for some time so we are thinking they would be good to suggest for use in Flint. Although EPA has made no official changes to the 3Ts protocol at this point., we think it would be appropriate to suggest incorporating the tweaks for this effort.

Miguel A. Del Toral
Regulations Manager
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Chicago, IL 60604
Phone: (312) 886-5253

From: Suero, Maryann
Sent: Thursday, October 15, 2015 07:47 AM
To: Klevs, Mardi; Master, Edward; Poy, Thomas; Harris, Kimberly; Deltoral, Miguel; Singer, Joshua
Subject: FYI / Detroit News: Flint, Michigan, water tests suggest statewide lead issues

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… State officials plan to contact all schools in the state, urging them to assess their lead levels in drinking water…

Detroit News, MI

http://www.detroitnews.com/story/news/politics/2015/10/08/flint-water/73623958/

To: Hedman, Susan[hedman.susan@epa.gov]; Meiburg, Stan[Meiburg.Stan@epa.gov]; Grevatt, Peter[Grevatt.Peter@epa.gov]; Distefano, Nichole[DiStefano.Nichole@epa.gov]; Burke, Thomas[Burke.Thomas@epa.gov]
Cc: Purchia, Liz[Purchia.Liz@epa.gov]
From: Harrison, Melissa
Sent: Thur 10/15/2015 3:52:55 PM
Subject: Draft Flint Task Force press release-please review

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CONTACT:

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"EPA is committed to working with our state and local partners to ensure a safe and reliable water supply for the residents of Flint, Michigan," said Susan Hedman, EPA Region 5 Administrator. "The formation of this task force continues our commitment to providing the necessary level of technical assistance to assist Flint and the state of Michigan."

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Melissa J. Harrison

Press Secretary

U.S. Environmental Protection Agency

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Mobile: (202) 697-0208

Harrison.Melissa@epa.gov

To: Hyde, Tinka[hyde.tinka@epa.gov]; Henry, Timothy[henry.timothy@epa.gov]
Cc: Bair, Rita[bair.rita@epa.gov]; Damato, Nicholas[damato.nicholas@epa.gov]; Deltoral, Miguel[deltoral.miguel@epa.gov]; Crooks, Jennifer[crooks.jennifer@epa.gov]; Shoven, Heather[shoven.heather@epa.gov]; Porter, Andrea[porter.andrea@epa.gov]
From: Poy, Thomas
Sent: Thur 10/15/2015 3:54:39 PM
Subject: Flint Update

Tinka: Here is an Flint update.

- The transmission line between Detroit and Flint has been disinfected. They are required to take 2 Total Coliform samples. The first one is fine. Awaiting results of the second.

- Additional orthophosphate will be added by Flint and not Detroit.

- Additional orthophosphate will likely have an impact of Flint's wastewater discharge wrt phosphorus.

- GWDWB and ORD are working with MDEQ on their protocol for additional sampling at schools.

- The Michigan House unanimously passed a bill providing $9.3M for the Flint DW crisis.

o $6M for the reconnection to Detroit.

o 300,000 to MDEQ to hire two workers for home and school drinking water inspections.

o $1 million for lab services to test water samples.

o $1 million to buy water filters for residents.

o $850,000 to screen for lead, coordinate follow-up care for children with elevated blood lead levels, and do related outreach.

o $200,000 for legally required inspections of plumbing fixtures and systems inside schools and health facilities.

Tom Poy

Chief, Ground Water and Drinking Water Branch

USEPA - Region 5

(312) 886-5991

To: Harrison, Melissa[Harrison.Melissa@epa.gov]; Hedman, Susan[hedman.susan@epa.gov]; Grevatt, Peter[Grevatt.Peter@epa.gov]; Distefano, Nichole[DiStefano.Nichole@epa.gov]; Burke, Thomas[Burke.Thomas@epa.gov]
Cc: Purchia, Liz[Purchia.Liz@epa.gov]
From: Meiburg, Stan
Sent: Thur 10/15/2015 3:57:08 PM
Subject: RE: Draft Flint Task Force press release-please review

Do we want to note in the release that the Task Force will be led by the DRA? Also, I think "Office of Water Lead and Copper Rule" is too technical.

Stan

A. Stanley Meiburg, Ph.D.

Acting Deputy Administrator

U.S. Environmental Protection Agency

MC-1102A

1200 Pennsylvania Avenue, NW

Washington, DC 20460

From: Harrison, Melissa
Sent: Thursday, October 15, 2015 11:53 AM
To: Hedman, Susan <hedman.susan@epa.gov>; Meiburg, Stan <Meiburg.Stan@epa.gov>; Grevatt, Peter <Grevatt.Peter@epa.gov>; Distefano, Nichole <DiStefano.Nichole@epa.gov>; Burke, Thomas <Burke.Thomas@epa.gov>
Cc: Purchia, Liz <Purchia.Liz@epa.gov>
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Harrison.Melissa@epa.gov

To: Meiburg, Stan[Meiburg.Stan@epa.gov]
Cc: Harrison, Melissa[Harrison.Melissa@epa.gov]; Grevatt, Peter[Grevatt.Peter@epa.gov]; Distefano, Nichole[DiStefano.Nichole@epa.gov]; Burke, Thomas[Burke.Thomas@epa.gov]; Purchia, Liz[Purchia.Liz@epa.gov]
From: Hedman, Susan
Sent: Thur 10/15/2015 4:07:43 PM
Subject: Re: Draft Flint Task Force press release-please review

Thanks Melissa. I think that we should specifically note that task force will include technical experts from the ORD water lab in Cincinnati (not sure of the formal name) which conveys both that these are water experts and that they close by in the Midwest.

Sent from my iPhone

On Oct 15, 2015, at 10:57 AM, Meiburg, Stan <Meiburg.Stan@epa.gov> wrote:

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> Stan
>
> *A. Stanley Meiburg, Ph.D.*
>
> *Acting Deputy Administrator*
>
> *U.S. Environmental Protection Agency*
>
> *MC-1102A*
>
> *1200 Pennsylvania Avenue, NW*
>
> *Washington, DC 20460*
>
> **From:** Harrison, Melissa
> **Sent:** Thursday, October 15, 2015 11:53 AM
> **To:** Hedman, Susan <hedman.susan@epa.gov>; Meiburg, Stan <Meiburg.Stan@epa.gov>; Grevatt, Peter <Grevatt.Peter@epa.gov>; Distefano, Nichole <DiStefano.Nichole@epa.gov>; Burke, Thomas <Burke.Thomas@epa.gov>
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From: Hedman, Susan
Sent: Thur 10/15/2015 4:31:56 PM
Subject: Re: Draft Flint Task Force press release-please review

Melissa -- I also suggest removing "the necessary level of" from my quote and adding the following to the last sentence to make a clear that MDEQ and the City are not members of the task force: . . . from the city, to serve as points of contact for the Task Force.

Thanks.

Sent from my iPhone

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From: Grevatt, Peter
Sent: Thur 10/15/2015 4:44:43 PM
Subject: Re: Draft Flint Task Force press release-please review

Thanks Susan, Melissa and Nichole.

I suggest we modify the language that says that the task force will be available on site in Flint as needed. I'd recommend that we delete the phrase "as needed" so we make clear that we will be in Flint, but we don't give the impression that we will be there in person for every meeting that occurs.

The text in the last paragraph should be edited as follows:

> The Task Force will be comprised of scientists and technical experts from EPA Region 5 and EPA Headquarters. Headquarters Offices represented include the Office of Research and Development and the Office of Ground Water and Drinking Water. In addition, EPA will ask the Governor to designate a MDEQ official and the Mayor of Flint to designate an official from the city.

Sent from my iPhone

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CHICAGO- Today EPA Region 5 Administrator Susan Hedman established the Flint Safe Drinking Water Task Force to provide the Agency's technical expertise through regular, but no less than weekly, conversations with designated officials from Michigan Department of Environmental Quality (MDEQ) and the City of Flint. The Task Force will assist with developing and implementing a plan to secure water quality, including measures to optimize corrosion control. Task Force members will be available to consult with MDEQ and the City of Flint on site in Flint as needed. The Task Force will also coordinate as necessary with federal, state and local public health agencies to assist with protection of public health.

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“EPA is committed to working with our state and local partners to ensure a safe and reliable water supply for the residents of Flint, Michigan,” said Susan Hedman, EPA Region 5 Administrator. “The formation of this task force continues our commitment to providing the necessary level of technical assistance to assist Flint and the state of Michigan.”

The Task Force will be comprised of scientists and technical experts from EPA Region 5 and EPA Headquarters. Offices represented include the Office of Research and Development, Office of Water Lead and Copper Rule, Office of Water. In addition, EPA will ask the Governor to designate a MDEQ official and the Mayor of Flint to designate an official from the city.

###

Melissa J. Harrison

Press Secretary

U.S. Environmental Protection Agency

Office: (202) 564-8421

Mobile: (202) 697-0208

Harrison.Melissa@epa.gov

To: Grevatt, Peter[Grevatt.Peter@epa.gov]; Hedman, Susan[hedman.susan@epa.gov]
Cc: Harrison, Melissa[Harrison.Melissa@epa.gov]; Meiburg, Stan[Meiburg.Stan@epa.gov]; Distefano, Nichole[DiStefano.Nichole@epa.gov]; Burke, Thomas[Burke.Thomas@epa.gov]
From: Purchia, Liz
Sent: Thur 10/15/2015 5:51:20 PM
Subject: RE: Draft Flint Task Force press release-please review

Agree with the other edits and few suggestions below.

From: Grevatt, Peter
Sent: Thursday, October 15, 2015 12:45 PM
To: Hedman, Susan <hedman.susan@epa.gov>
Cc: Harrison, Melissa <Harrison.Melissa@epa.gov>; Meiburg, Stan <Meiburg.Stan@epa.gov>; Distefano, Nichole <DiStefano.Nichole@epa.gov>; Burke, Thomas <Burke.Thomas@epa.gov>; Purchia, Liz <Purchia.Liz@epa.gov>
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Sent from my iPhone

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>> CONTACT:
>>
>> XXX
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>> XXX-XXX-XXX
>>
>> FOR IMMEDIATE RELEASE
>>
>> October XX, 2015
>>
>> # EPA Establishes ~~Flint~~ Safe Drinking Water Task Force ~~Task Force~~ to Provide ~~Agency's~~ Technical Expertise to MDEQ and City of Flint

Task Force providing technical assistance on reconnecting the Flint drinking water system to a new source

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From: Distefano, Nichole
Sent: Thur 10/15/2015 9:11:46 PM
Subject: RE: Draft Flint Task Force press release-please review

Do we have the final press release? Susan, let us know what your timing is in terms of notifying staff and then we can tee from that to do the rest of the notifications tomorrow.

Nichole Distefano

Deputy Associate Administrator

Office of Congressional and Intergovernmental Relations

Environmental Protection Agency

(202) 564-5200

Distefano.Nichole@epa.gov

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Sent: Thursday, October 15, 2015 12:45 PM
To: Hedman, Susan <hedman.susan@epa.gov>
Cc: Harrison, Melissa <Harrison.Melissa@epa.gov>; Meiburg, Stan <Meiburg.Stan@epa.gov>; Distefano, Nichole <DiStefano.Nichole@epa.gov>; Burke, Thomas <Burke.Thomas@epa.gov>; Purchia, Liz <Purchia.Liz@epa.gov>
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>> CONTACT:

XXX

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XXX-XXX-XXX

FOR IMMEDIATE RELEASE

October XX, 2015

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Cc: Distefano, Nichole[DiStefano.Nichole@epa.gov]; Grevatt, Peter[Grevatt.Peter@epa.gov]; Harrison, Melissa[Harrison.Melissa@epa.gov]; Meiburg, Stan[Meiburg.Stan@epa.gov]; Purchia, Liz[Purchia.Liz@epa.gov]; Kopocis, Ken[Kopocis.Ken@epa.gov]
From: Hedman, Susan
Sent: Thur 10/15/2015 9:58:06 PM
Subject: Re: Draft Flint Task Force press release-please review

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I will handle the R5 appointees. Tom -- Can you please reach out to Darren and Michael?
Ken/Peter -- Can you please reach out to Jeff?

Sent from my iPhone

On Oct 15, 2015, at 4:31 PM, Burke, Thomas <Burke.Thomas@epa.gov> wrote:

> Also, please make sure we inform the members of the task force when it is set to go.
>
> Thomas A. Burke, PhD, MPH
> Deputy Assistant Administrator
> EPA Science Advisor
> Office of Research and Development
> 202-564-6620
> burke.thomas@epa.gov
>
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> >
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> >
> > Environmental Protection Agency

(202) 564-5200

Distefano.Nichole@epa.gov

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To: Hedman, Susan <hedman.susan@epa.gov>
Cc: Harrison, Melissa <Harrison.Melissa@epa.gov>; Meiburg, Stan <Meiburg.Stan@epa.gov>; Distefano, Nichole <DiStefano.Nichole@epa.gov>; Burke, Thomas <Burke.Thomas@epa.gov>; Purchia, Liz <Purchia.Liz@epa.gov>
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>> FOR IMMEDIATE RELEASE
>>
>> October XX, 2015
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>> **EPA Establishes Flint Safe Drinking Water**

Task Force

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Cc: Distefano, Nichole[DiStefano.Nichole@epa.gov]; Grevatt, Peter[Grevatt.Peter@epa.gov]; Harrison, Melissa[Harrison.Melissa@epa.gov]; Meiburg, Stan[Meiburg.Stan@epa.gov]; Purchia, Liz[Purchia.Liz@epa.gov]; Kopocis, Ken[Kopocis.Ken@epa.gov]
From: Burke, Thomas
Sent: Thur 10/15/2015 10:03:21 PM
Subject: Re: Draft Flint Task Force press release-please review

Will do

Tom

Thomas A. Burke, PhD, MPH
Deputy Assistant Administrator
EPA Science Advisor
Office of Research and Development
202-564-6620
burke.thomas@epa.gov

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October XX, 2015

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From: Harrison, Melissa
Sent: Thur 10/15/2015 10:20:38 PM
Subject: RE: Draft Flint Task Force press release-please review

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CONTACT:

XXX

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FOR IMMEDIATE RELEASE

October XX, 2015

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Sent: Thursday, October 15, 2015 6:10 PM
To: Harrison, Melissa <Harrison.Melissa@epa.gov>
Cc: Burke, Thomas <Burke.Thomas@epa.gov>; Purchia, Liz <Purchia.Liz@epa.gov>; Grevatt, Peter <Grevatt.Peter@epa.gov>; Meiburg, Stan <Meiburg.Stan@epa.gov>; Distefano, Nichole <DiStefano.Nichole@epa.gov>
Subject: Re: Draft Flint Task Force press release-please review

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Sent from my iPhone

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From: Hedman, Susan
Sent: Thur 10/15/2015 10:43:31 PM
Subject: Re: Draft Flint Task Force press release-please review

Thanks everyone for your help with this.

Nicole -- Will you have adequate time for congressional notifications if we release this at 9 am central -- and if we send an advance copy to the MDEQ Director and Mayor Walling at 8:30 central?

Sent from my iPhone

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> October XX, 2015
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Melissa J. Harrison

Press Secretary

U.S. Environmental Protection Agency

Office: (202) 564-8421

Mobile: (202) 697-0208

Harrison.Melissa@epa.gov

From: Hedman, Susan
Sent: Thursday, October 15, 2015 6:10 PM
To: Harrison, Melissa <Harrison.Melissa@epa.gov>
Cc: Burke, Thomas <Burke.Thomas@epa.gov>; Purchia, Liz <Purchia.Liz@epa.gov>; Grevatt, Peter <Grevatt.Peter@epa.gov>; Meiburg, Stan <Meiburg.Stan@epa.gov>; Distefano, Nichole <DiStefano.Nichole@epa.gov>
Subject: Re: Draft Flint Task Force press release-please review

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>> October XX, 2015

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To: Williams, Felicia[Williams.Felicia@epa.gov]
Cc: Kaplan, Robert[kaplan.robert@epa.gov]; Kelley, Jeff[kelley.jeff@epa.gov]; Rowan, Anne[rowan.anne@epa.gov]
From: Hedman, Susan
Sent: Fri 10/16/2015 12:13:57 AM
Subject: Fwd: Press Release to go out tomorrow at 10:30 central

Region 5 will be issuing a finalized version of this press release tomorrow at 10:30 am.

At 10 am, please e-mail a copy of the final press release from my e-mail address to Dan Wyant (cc-ing MaryBeth) with the following note:

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> **From:** <hedman.susan@epa.gov>
> **Date:** October 15, 2015 at 6:03:35 PM CDT
> **To:** Jeff Kelley <Kelley.Jeff@epa.gov>, Anne Rowan <Rowan.Anne@epa.gov>
> **Cc:** Melissa Harrison <Harrison.Melissa@epa.gov>
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Subject: Fwd: Press Release to go out tomorrow at 10:30 central

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Cc: "Kaplan, Robert" <kaplan.robert@epa.gov>, "Kelley, Jeff" <kelley.jeff@epa.gov>, "Rowan, Anne" <rowan.anne@epa.gov>
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On Oct 15, 2015, at 5:20 PM, Harrison, Melissa <Harrison.Melissa@epa.gov> wrote:

Below is the final press release with everyone's edits incorporated. Susan-feel free to send it to your staff for distribution tomorrow morning. Thanks everyone! Melissa

CONTACT:

XXX

XXX

XXX-XXX-XXX

FOR IMMEDIATE RELEASE

October XX, 2015

EPA Establishes Safe Drinking Water Task Force to Provide Technical Expertise to MDEQ and City of Flint

Task Force providing technical assistance on reconnecting the Flint drinking water system to a new source

CHICAGO- Today EPA Region 5 Administrator Susan Hedman established the Flint Safe Drinking Water Task Force to provide the Agency's technical expertise through regular, conversations with designated officials from Michigan Department of Environmental Quality (MDEQ) and the City of Flint. The Task Force will be led by the Region 5 Deputy Regional Administrator and will assist with developing and implementing a plan to secure water quality, including measures to optimize corrosion control. Task Force members will be available to consult with MDEQ and the City of Flint on site in Flint. The Task Force will also coordinate as necessary with federal, state and local public health agencies to assist with protection of public health.

Specifically, the Task Force will provide technical assistance to the MDEQ and the City of Flint to reconnect the Flint system to a new source of drinking water (to be supplied by the Great Lakes Water Authority) and to optimize corrosion control for the Flint system, starting in October 2015. The Task Force will also provide technical assistance to the MDEQ and the City of Flint, as needed, in advance of and following connection of the Flint water system to a new source of drinking water (to be supplied by the Karegnondi Water Authority) and to optimize corrosion control for the Flint system, starting in 2016.

"EPA is committed to working with our state and local partners to ensure a safe and reliable drinking water supply for the residents of Flint, Michigan," said Susan Hedman, EPA Region 5 Administrator. "The formation of this task force continues our commitment to providing technical assistance to assist the City of Flint and the State of Michigan."

The Task Force will be comprised of scientists and technical experts from the EPA Region 5 office in Chicago, the National Risk Management Research Lab in Cincinnati and the EPA drinking water program. In addition, EPA will ask the Governor to designate a MDEQ official and the Mayor of Flint to designate a city official, to serve as points of contact for the Task Force.

###

Melissa J. Harrison

Press Secretary

U.S. Environmental Protection Agency

Office: (202) 564-8421

Mobile: (202) 697-0208

Harrison.Melissa@epa.gov

From: Hedman, Susan
Sent: Thursday, October 15, 2015 6:10 PM

To: Harrison, Melissa <Harrison.Melissa@epa.gov>
Cc: Burke, Thomas <Burke.Thomas@epa.gov>; Purchia, Liz <Purchia.Liz@epa.gov>; Grevatt, Peter <Grevatt.Peter@epa.gov>; Meiburg, Stan <Meiburg.Stan@epa.gov>; Distefano, Nichole <DiStefano.Nichole@epa.gov>
Subject: Re: Draft Flint Task Force press release-please review

Please revise the final two paragraphs, as follows:

"EPA is committed to working with our state and local partners to ensure a safe and reliable drinking water supply for the residents of Flint, Michigan," said Susan Hedman, EPA Region 5 Administrator. "The formation of this task force continues our commitment to providing technical assistance to assist the City of Flint and the State of Michigan."

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Sent from my iPhone

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Headquarters in Washington, D.C. Headquarters Offices represented include the Office of Research and Development and the Office of Ground Water and Drinking Water. In addition, EPA will ask the Governor to designate a MDEQ official and the Mayor of Flint from the city, to serve as points of contact for the Task Force.

To: Hedman, Susan[hedman.susan@epa.gov]
Cc: Burke, Thomas[Burke.Thomas@epa.gov]; Distefano, Nichole[DiStefano.Nichole@epa.gov]; Harrison, Melissa[Harrison.Melissa@epa.gov]; Meiburg, Stan[Meiburg.Stan@epa.gov]; Purchia, Liz[Purchia.Liz@epa.gov]; Kopocis, Ken[Kopocis.Ken@epa.gov]
From: Grevatt, Peter
Sent: Fri 10/16/2015 12:31:36 AM
Subject: Re: Draft Flint Task Force press release-please review

Yes, I'll speak with Jeff.

Sent from my iPhone

On Oct 15, 2015, at 5:58 PM, Hedman, Susan <hedman.susan@epa.gov> wrote:

> Yes -- thanks -- we will need to notify the Task Force members -- but ask them not to say anything until the press release goes out (probably tomorrow morning.)
>
> I will handle the R5 appointees. Tom -- Can you please reach out to Darren and Michael? Ken/Peter -- Can you please reach out to Jeff?
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>>
>> Thomas A. Burke, PhD, MPH
>> Deputy Assistant Administrator
>> EPA Science Advisor
>> Office of Research and Development
>> 202-564-6620
>> burke.thomas@epa.gov
>>
>> On Oct 15, 2015, at 5:11 PM, Distefano, Nichole <DiStefano.Nichole@epa.gov> wrote:
>>
>>> Do we have the final press release? Susan, let us know what your timing is in terms of notifying staff and then we can tee from that to do the rest of the notifications tomorrow.

Nichole Distefano

Deputy Associate Administrator

Office of Congressional and Intergovernmental Relations

Environmental Protection Agency

(202) 564-5200

Distefano.Nichole@epa.gov

From: Grevatt, Peter
Sent: Thursday, October 15, 2015 12:45 PM
To: Hedman, Susan <hedman.susan@epa.gov>
Cc: Harrison, Melissa <Harrison.Melissa@epa.gov>; Meiburg, Stan <Meiburg.Stan@epa.gov>; Distefano, Nichole <DiStefano.Nichole@epa.gov>; Burke, Thomas <Burke.Thomas@epa.gov>; Purchia, Liz <Purchia.Liz@epa.gov>
Subject: Re: Draft Flint Task Force press release-please review

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> Sent from my iPhone
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>
> > Team- Nichole and I spoke with Susan this morning and mapped out the process moving forward for announcing the task force. Below is a draft press release we would like your feedback on asap. Once finalized Susan will be in touch with next steps. Our goal is to have all notifications complete in order to make the public announcement tomorrow morning. Thanks! Melissa
> >
> > CONTACT:
> >
> > XXX
> >
> > XXX
> >
> > XXX-XXX-XXX

FOR IMMEDIATE RELEASE

October XX, 2015

EPA Establishes Flint Safe Drinking Water Task Force

Task Force to Provide Agency's Technical Expertise to MDEQ and City of Flint

CHICAGO- Today EPA Region 5 Administrator Susan Hedman established the Flint Safe Drinking Water Task Force to provide the Agency's technical expertise through regular, but no less than weekly, conversations with designated officials from Michigan Department of Environmental Quality (MDEQ) and the City of Flint. The Task Force will assist with developing and implementing a plan to secure water quality, including measures to optimize corrosion control. Task Force members will be available to consult with MDEQ and the City of Flint on site in Flint as needed. The Task Force will also coordinate as necessary with federal, state and local public health agencies to assist with protection of public health.

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Melissa J. Harrison

Press Secretary

U.S. Environmental Protection Agency

Office: (202) 564-8421

Mobile: (202) 697-0208

Harrison.Melissa@epa.gov

To: Hedman, Susan[hedman.susan@epa.gov]
Cc: Distefano, Nichole[DiStefano.Nichole@epa.gov]; Harrison, Melissa[Harrison.Melissa@epa.gov]; Burke, Thomas[Burke.Thomas@epa.gov]; Purchia, Liz[Purchia.Liz@epa.gov]; Grevatt, Peter[Grevatt.Peter@epa.gov]; Meiburg, Stan[Meiburg.Stan@epa.gov]
From: Kopocis, Ken
Sent: Fri 10/16/2015 12:33:38 AM
Subject: Re: Draft Flint Task Force press release-please review

This looks very good. Thanks to all.

Ken Kopocis
Office of Water
US EPA
202-564-5700

On Oct 15, 2015, at 8:24 PM, Hedman, Susan <hedman.susan@epa.gov> wrote:

> Yes -- R5 will send it to you right away in the morning.
>
> Sent from my iPhone
>
> On Oct 15, 2015, at 7:02 PM, Distefano, Nichole <DiStefano.Nichole@epa.gov> wrote:
>
> > Great. Can someone send the final version of the release? Will just need it in the morning.
> >
> > Sent from my iPhone
> >
> > On Oct 15, 2015, at 7:00 PM, Hedman, Susan <hedman.susan@epa.gov> wrote:
> >
> > > Sounds good -- that's what we will do.
> > >
> > > Sent from my iPhone
> > >
> > > On Oct 15, 2015, at 5:57 PM, Distefano, Nichole <DiStefano.Nichole@epa.gov> wrote:
> > >
> > > > That might be a little early. Can we do 10:30 CT/11:30 ET?
> > > >
> > > > We're going to need a little bit of time to socialize the idea with the other offices.

Sent from my iPhone

On Oct 15, 2015, at 6:43 PM, Hedman, Susan <hedman.susan@epa.gov> wrote:

> Thanks everyone for your help with this.
>
> Nicole -- Will you have adequate time for congressional notifications if we release this at 9 am central -- and if we send an advance copy to the MDEQ Director and Mayor Walling at 8:30 central?
>
> Sent from my iPhone
>
> On Oct 15, 2015, at 5:20 PM, Harrison, Melissa <Harrison.Melissa@epa.gov> wrote:
>
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>> CONTACT:
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>> XXX
>>
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>> XXX-XXX-XXX
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>> FOR IMMEDIATE RELEASE
>>
>> October XX, 2015
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Task Force providing technical assistance on reconnecting the Flint drinking water system to a new source

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Press Secretary

U.S. Environmental Protection Agency

Office: (202) 564-8421

Mobile: (202) 697-0208

Harrison.Melissa@epa.gov

From: Hedman, Susan
Sent: Thursday, October 15, 2015 6:10 PM
To: Harrison, Melissa <Harrison.Melissa@epa.gov>
Cc: Burke, Thomas <Burke.Thomas@epa.gov>; Purchia, Liz <Purchia.Liz@epa.gov>; Grevatt, Peter <Grevatt.Peter@epa.gov>; Meiburg, Stan <Meiburg.Stan@epa.gov>; Distefano, Nichole <DiStefano.Nichole@epa.gov>
Subject: Re: Draft Flint Task Force press release-please review

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To: Grevatt, Peter[Grevatt.Peter@epa.gov]
From: Hedman, Susan
Sent: Fri 10/16/2015 12:38:49 AM
Subject: Re: Draft Flint Task Force press release-please review

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Sent from my iPhone

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>>> Thomas A. Burke, PhD, MPH
>>> Deputy Assistant Administrator
>>> EPA Science Advisor
>>> Office of Research and Development
>>> 202-564-6620
>>> burke.thomas@epa.gov
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Deputy Associate Administrator

Office of Congressional and Intergovernmental Relations

Environmental Protection Agency

(202) 564-5200

Distefano.Nichole@epa.gov

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Sent: Thursday, October 15, 2015 12:45 PM
To: Hedman, Susan <hedman.susan@epa.gov>
Cc: Harrison, Melissa <Harrison.Melissa@epa.gov>; Meiburg, Stan <Meiburg.Stan@epa.gov>; Distefano, Nichole <DiStefano.Nichole@epa.gov>; Burke, Thomas <Burke.Thomas@epa.gov>; Purchia, Liz <Purchia.Liz@epa.gov>
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XXX-XXX-XXX

FOR IMMEDIATE RELEASE

October XX, 2015

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Melissa J. Harrison

Press Secretary

U.S. Environmental Protection Agency

Office: (202) 564-8421

Personal Phone / Ex. 6

Harrison.Melissa@epa.gov

To: Hedman, Susan[hedman.susan@epa.gov]; Kelley, Jeff[kelley.jeff@epa.gov]; Rowan, Anne[rowan.anne@epa.gov]
Cc: Harrison, Melissa[Harrison.Melissa@epa.gov]
From: Distefano, Nichole
Sent: Fri 10/16/2015 1:06:25 PM
Subject: RE: Press Release to go out tomorrow at 10:30 central

If you could also send to Cathy Davis in OCIR I would appreciate it. We're going to start to reach out to folks via calls in the next hour or so.

Nichole Distefano

Deputy Associate Administrator

Office of Congressional and Intergovernmental Relations

Environmental Protection Agency

(202) 564-5200

Distefano.Nichole@epa.gov

From: Hedman, Susan
Sent: Thursday, October 15, 2015 8:28 PM
To: Kelley, Jeff <kelley.jeff@epa.gov>; Rowan, Anne <rowan.anne@epa.gov>
Cc: Harrison, Melissa <Harrison.Melissa@epa.gov>; Distefano, Nichole <DiStefano.Nichole@epa.gov>
Subject: Fwd: Press Release to go out tomorrow at 10:30 central

Please send the final version of the release to Melissa and Nicole as soon as it's ready in the morning. Thanks!

Sent from my iPhone

Begin forwarded message:

From: <hedman.susan@epa.gov>
Date: October 15, 2015 at 6:03:35 PM CDT
To: Jeff Kelley <Kelley.Jeff@epa.gov>, Anne Rowan <Rowan.Anne@epa.gov>
Cc: Melissa Harrison <Harrison.Melissa@epa.gov>
Subject: Press Release to go out tomorrow at 10:30 central

I am calling you now to discuss.

CONTACT:

XXX

XXX

XXX-XXX-XXX

FOR IMMEDIATE RELEASE

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###

Sent from my iPhone

To: Hedman, Susan[hedman.susan@epa.gov]
From: Kaplan, Robert
Sent: Fri 10/16/2015 3:19:31 PM
Subject: RE: Press Release to go out tomorrow at 10:30 central

Done. Thanks.

Robert Kaplan

Deputy Regional Administrator

U.S. EPA Region 5

Phone: (312) 886-1499

Cell: (312) 287-0518

Fax: (312) 692-2075

From: Hedman, Susan
Sent: Thursday, October 15, 2015 7:18 PM
To: Kaplan, Robert
Subject: Fwd: Press Release to go out tomorrow at 10:30 central

Tomorrow morning, please give the congressional liaisons a heads up about this and let them know that HQ will be handling all congressional outreach. Thanks.

Sent from my iPhone

Begin forwarded message:

> **From:** "Hedman, Susan" <hedman.susan@epa.gov>
> **Date:** October 15, 2015 at 7:13:57 PM CDT
> **To:** "Williams, Felicia" <Williams.Felicia@epa.gov>
> **Cc:** "Kaplan, Robert" <kaplan.robert@epa.gov>, "Kelley, Jeff" <kelley.jeff@epa.gov>, "Rowan, Anne" <rowan.anne@epa.gov>
> **Subject: Fwd: Press Release to go out tomorrow at 10:30 central**
>
> Region 5 will be issuing a finalized version of this press release tomorrow at 10:30 am.

At 10 am, please e-mail a copy of the final press release from my e-mail address to Dan Wyant (cc-ing MaryBeth) with the following note:

Hi Dan --

We will be issuing the attached press release in about 30 minutes -- it describes the Task Force that we discussed yesterday. If you would like to talk further, I will be available this afternoon.

Thanks,

Susan

Also -- at 10 am, please e-mail a copy of the final press release from my e-mail address to Mayor Walling (dwalling@cityofflint.com) with the following note:

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Thanks,

Susan

Sent from my iPhone

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From: <hedman.susan@epa.gov>
Date: October 15, 2015 at 6:03:35 PM CDT
To: Jeff Kelley <Kelley.Jeff@epa.gov>, Anne Rowan <Rowan.Anne@epa.gov>
Cc: Melissa Harrison <Harrison.Melissa@epa.gov>
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I am calling you now to discuss.

CONTACT:

XXX

XXX

XXX-XXX-XXX

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“EPA is committed to working with our state and local partners to ensure a safe and reliable drinking water supply for the residents of Flint, Michigan,” said Susan Hedman, EPA Region 5 Administrator. “The formation of this task force continues our commitment to providing technical assistance to assist the City of Flint and the State of Michigan.”

The Task Force will be comprised of scientists and technical experts from the EPA Region 5 office in Chicago, the National Risk Management Research Lab in Cincinnati and the EPA drinking water program. In addition, EPA will ask the Governor to designate a MDEQ official and the Mayor of Flint to designate a city official, to serve as points of contact for the Task Force.

###

Sent from my iPhone

To: Schock, Michael[Schock.Michael@epa.gov]; Lytle, Darren[Lytle.Darren@epa.gov]
Cc: Schupp, George[schupp.george@epa.gov]; Wesolowski, Dennis[wesolowski.dennis@epa.gov]; Suero, Maryann[suero.maryann@epa.gov]; Moriarty, Edward[Moriarty.EdwardJ@epa.gov]; Banks, Victoria[Banks.Victoria@epa.gov]; Viveiros, Edward[Viveiros.Edward@epa.gov]; Kempic, Jeffrey[Kempic.Jeffrey@epa.gov]
From: Deltoral, Miguel
Sent: Fri 10/16/2015 4:36:02 PM
Subject: Fw: EPA Establishes Safe Drinking Water Task Force to Provide Expertise to MDEQ and City of Flint

fyi

Miguel A. Del Toral
Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

From: Josh Singer <noreply-subscriptions@epa.gov>
Sent: Friday, October 16, 2015 11:13 AM
To: Deltoral, Miguel
Subject: EPA Establishes Safe Drinking Water Task Force to Provide Expertise to MDEQ and City of Flint

Contact Information: Anne Rowan, rowan.anne@epa.gov 312-353-9391

For Immediate Release No. 15-OPA160

EPA Establishes Safe Drinking Water Task Force to Provide Technical Expertise to MDEQ and City of Flint

Task Force providing technical assistance on reconnecting the Flint drinking water system to a new source

CHICAGO (October 16, 2015) - Today U.S. Environmental Protection Agency Region 5 Administrator Susan Hedman established the Flint Safe Drinking Water Task Force to provide the Agency's technical expertise through regular conversations with designated officials from Michigan Department of Environmental Quality (MDEQ) and the City of Flint. The Task Force will be led by the Region 5 Deputy Regional Administrator and will assist with developing and implementing a plan to secure water quality, including measures to optimize corrosion control. Task Force members will be available to consult with MDEQ and the City of Flint on site in Flint. The Task Force will also coordinate as necessary with federal, state and local public health agencies to assist with protection of public health.

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“EPA is committed to working with our state and local partners to ensure a safe and reliable drinking water supply for the residents of Flint, Michigan,” Hedman said. “The formation of this task force continues our commitment to providing technical assistance to the City of Flint and the State of Michigan.”

The Task Force will be comprised of scientists and technical experts from the EPA Region 5 office in Chicago, the National Risk Management Research Lab in Cincinnati and the EPA drinking water program. In addition, EPA will ask the Governor to designate a MDEQ official and the Mayor of Flint to designate a city official, to serve as points of contact for the Task Force.

If you would rather not receive future communications from Environmental Protection Agency, let us know by clicking here.
Environmental Protection Agency, 77 West Jackson Boulevard, Chicago, IL 60604-3507 United States

To: Hedman, Susan[hedman.susan@epa.gov]; Kaplan, Robert[kaplan.robert@epa.gov]; Hyde, Tinka[hyde.tinka@epa.gov]
Cc: Rowan, Anne[rowan.anne@epa.gov]; Kelley, Jeff[kelley.jeff@epa.gov]; Cassell, Peter[cassell.peter@epa.gov]; Beckmann, Ronna Erin[beckmann.ronna@epa.gov]; Harrison, Melissa[Harrison.Melissa@epa.gov]; Abrams, Dan[Abrams.Dan@epa.gov]; Poy, Thomas[poy.thomas@epa.gov]; Peterson, John[peterson.john@epa.gov]; Arcaute, Francisco[Arcaute.Francisco@epa.gov]; Singer, Joshua[Singer.Joshua@epa.gov]
From: Peterson, John
Sent: Fri 10/16/2015 5:16:58 PM
Subject: Flint Water clips for Oct. 16

FLINT DRINKING WATER CLIPS

US. EPA Region 5 – as prepared by John Peterson *(ORA/OEC/PA)* on Oct. 16, 2015.

State's $6M aid for Flint water switch signed into law

Michigan Governor OKs $9.3M to End Flint Water Crisis

Michigan Gov. Rick Snyder signs spending bill with $9.35M for Flint water crisis

Senate approves, Snyder signs cash for Flint water fix

For the record: Water crisis in Flint, Michigan, an obscene failure of government

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http://www.detroitnews.com/story/news/politics/2015/10/15/flint-get-aid-switch-drinking-water/73986956/

Staff and wire reports 11:44 a.m. EDT October 15, 2015

Lansing — The city of Flint will receive $6 million in state aid to help temporarily switch its drinking water source back to Detroit after the discovery of lead contamination and other problems.

Gov. Rick Snyder signed into law Thursday nearly $9.4 million in aid Thursday that includes money for water filters, inspections, lab testing and payment to reconnect Flint temporarily to the Detroit water system until its own pipeline to Lake Huron is completed.

The legislation was approved by the Senate Thursday morning in a 37-0 vote after the House quickly passed it Wednesday evening.

“This funding is a coordinated response to a serious problem, and I’m pleased so many parties came together to help deliver safe drinking water to the city of Flint,” Snyder said in a statement. “Reconnecting to the Great Lakes Water Authority is only the first step, as the state will continue testing and inspections to ensure Flint families and children have clean water in their homes and schools.”

The Legislature moved quickly after the Republican governor backed the reconnection to Detroit and the other aid on Friday. Senate Minority Leader Jim Ananich, D-Flint, thanked his colleagues in the Republican-controlled chamber Thursday for moving so quickly on a matter of public health for the city he represents.

The appropriation was approved without partisan finger-pointing, something that has happened off the floor of the state Capitol. Michigan Democratic Party Chairman Brandon Dillon has accused the Snyder administration of putting the health and safety of a city “at risk in order to prove that Republican, corporate-style governing works. Clearly, when you have to spend millions of taxpayer dollars to fix your mistakes, it does not.”

The Michigan Department of Environmental Quality has argued that testing of city water for many months showed water quality was still within federal safety levels. But the administration changed its mind last week when it confirmed findings by the Hurley Medical Center that lead levels in Flint children jumped dramatically after the switch to the corrosive Flint River.

Flint will provide $2 million and the Charles Stewart Mott Foundation has promised to provide $4 million. Returning to Detroit will cost $12 million through June.

Flint stopped getting its water from Detroit’s system last year and switched to the Flint River in a cost-cutting move. But the city has had trouble with water from the Flint River.

The state corroborated findings of elevated lead levels in children and disclosed higher levels in three Flint schools. Residents have complained about the safety, smell, taste and appearance of the water.

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http://abcnews.go.com/Politics/wireStory/michigan-legislature-agrees-93m-end-flint-water-crisis-34496930

By david eggert, associated press

LANSING, Mich. — Oct 15, 2015, 5:43 PM ET A Michigan city will receive $6 million in state funding to help switch its drinking water source after lead problems prompted officials to declare a public health emergency.

Gov. Rick Snyder on Thursday quickly approved $9.3 million in aid to address Flint's water crisis after the Legislature finalized a bill earlier in the day. It also includes money for home water filters, inspections, health services and lab testing.

The 99,000-resident city stopped getting its water from Detroit's system last year in a cost-cutting move while under state emergency management but has had trouble with water from the Flint River. It was supposed to be an interim supply source until the city can join a new system scheduled to be completed next year.

The state corroborated findings of elevated lead levels in children and disclosed higher lead amounts in three Flint schools. Residents also have complained about the smell, taste and appearance of the water.

Returning to Detroit's system will cost $12 million through June. Flint will pay $2 million, and the Charles Stewart Mott Foundation has pledged $4 million.

"Reconnecting to the Great Lakes Water Authority is only the first step, as the state will continue testing and inspections to ensure Flint families and children have clean water in their homes and schools," Snyder said in a statement.

The Flint River is more corrosive than Detroit's water from Lake Huron and, because controls were not implemented, the river water picked up lead from aging pipes that connect water mains to houses and businesses.

Lead, a metal that can cause developmental delays and learning disabilities, is just the latest issue since Flint changed its water supply in April 2014. There have been high levels of a disinfectant byproduct. Increased bacteria levels forced boil-water advisories.

"Unanimous support in both chambers to secure resources is heartening," said Senate Minority Leader Jim Ananich, D-Flint. "This is an important and necessary step to fix the current crisis."

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http://www.mlive.com/lansing-news/index.ssf/2015/10/michigan_gov_rick_snyder_signs_9.html

By Jonathan Oosting | joosting@mlive.com MLive.com

Follow on Twitter
on October 15, 2015 at 6:24 PM, updated October 15, 2015 at 7:27 PM

LANSING, MI — Michigan Gov. Rick Snyder on Thursday signed a supplemental spending bill that includes $9.35 million to address a public health crisis in Flint linked to high lead levels in drinking water.

The governor wasted little time with the bill, signing it just hours after it had won unanimous approval in the Senate and one day after unanimous approval in the House.

"This funding is a coordinated response to a serious problem and I'm pleased so many parties came together to help deliver safe drinking water to the city of Flint," Snyder said in a statement.

The bulk of the funding — $6 million — will help Flint reconnect to Detroit water until a new Lake Huron pipeline is complete. The Charles Stewart Mott Foundation has committed another $4 million, and the cash-strapped city is paying the remaining $2 million.

"Reconnecting to the Great Lakes Water Authority is only the first step, as the state will continue testing and inspections to ensure Flint families and children have clean water in their homes and schools," the governor said.

Flint, operating under a state-appointed emergency manager at the time, began supplying residents with Flint River water in April of 2014. Scientists have since discovered elevated lead levels in drinking water and the blood of children.

The river water has been blamed for exacerbating corrosion in aging pipes, and toxic lead levels have been detected in drinking water in three Flint schools, according to state officials.

The spending proposal would appropriate $1 million to Michigan Department of Environmental Quality for laboratory analysis of drinking water samples in Flint. Another $1 million would cover the costs of water filters provided to Flint residents.

The bill includes $850,000 to fund additional state and local services in the city, such as screening for abnormal blood lead levels, lead hazard identification and follow-up care for affected children.

Another $300,000 would help fund home and school water connections in Flint, and $200,000 would support plumbing inspections in educational and health facilities.

Of the $9.35 million appropriation to benefit Flint, $7.15 million would come out of the state's general fund, while $2.2 million would come from other restricted sources, including an available balance in a DEQ settlement fund.

Flint Mayor Dayne Walling, in a statement released earlier Thursday, had thanked the Legislature for taking "swift and decisive" action for Flint residents.

"We can now move to secure a reconnection to Detroit and provide Lake Huron water until the KWA pipeline can be completed next year," he said.

State Sen. Jim Ananich, a Flint Democrat who worked with Snyder to secure the funding, said he was grateful to his colleagues for approving the plan but frustrated that it took legislative action to ensure safe, clean drinking water for city residents.

"Today's vote was a necessary fix to a problem that never should have happened," he said in a statement.

Flint plans to switch off of Detroit water and join a regional authority building the new pipeline were put in motion before Snyder appointed an emergency financial manager to run the city.

But there is no record that Flint City Council voted to use the river as a short-term drinking water source, according to The Flint Journal, and those contracts were ultimately signed by emergency managers.

"As we move forward, I am committed to finding out how, in 2015, an entire city was poisoned by its own drinking water," Ananich said. "A simple report will not cover it. We need to know who knew what, when they knew it, and what, if anything, they did to fix it."

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http://www.freep.com/story/news/local/michigan/2015/10/15/senate-gives-quick-unanimous-approval-flint-water-fix/73979168/

By Kathleen Gray, Detroit Free Press Lansing Bureau 9:02 p.m. EDT October 15, 2015

LANSING — Residents of Flint got another step closer to cleaner water Thursday when Gov. Rick Snyder signed a bill sending $9.35 million to help the beleaguered city reconnect to the Detroit water and sewer system.

The state Senate voted 37-0 Thursday to approve the funds after the House of Representatives unanimously approved the same appropriation Wednesday night. Snyder said Thursday that the swift action by the Legislature was only the first step in dealing with the water crisis.

"The state will continue testing and inspections to ensure Flint families and children have clean water in their homes and schools," he said in a statement.

Sen. David Hilldenbrand, R-Lowell, the chairman of the Senate Appropriations Committee, urged his colleagues to support the measure "to address the public health crisis in the city of Flint."

And Sen. Jim Ananich, D-Flint, said the passage of the money for Flint doesn't end the controversy.

"This is an important step necessary to fix the current crisis.And once this is complete, it's important that our next priority is getting to the bottom of how this happened," he said. "We need to make sure this never happens again."

For the record: Water crisis in Flint, Michigan, an obscene failure of government

http://www.wisconsingazette.com/opinion/for-the-record-water-crisis-in-flint-michigan-an-obscene-failure-of-government.html

Opinion Published in Wisconsin Gazette - Written by The Detroit Free Press
Thursday, 15 October 2015 22:49

There's good news: The City of Flint, Michigan, ould soon reconnect to the Detroit Water and Sewer Department, a water source that doesn't leach lead from aging pipes into the municipal water supply.

And there's bad news: Three Flint elementary schools have water with lead levels more than 15 parts per billion, which is the limit according to U.S. Environmental Protection Agency guidelines. At one school, Freeman Elementary, water tests found lead levels of 101 ppb. Add this to months of data showing elevated lead levels in homes across Flint, and a higher percentage of children with elevated blood-lead levels.

Lead poisoning causes behavioural and developmental problems in children. It is irreversible. Pregnant women and children are most vulnerable. The U.S. Centers for Disease Control and Prevention say there is no acceptable level of lead exposure.

And in at least three Flint schools, children have been drinking lead-contaminated water for up to 16 months.

Sixteen months, as Flint residents told the state again and again that their water wasn't right. Sixteen months, as independent researchers meticulously documented rising lead levels in water and in the blood of Flint children. Sixteen months, as the state worked to disparage and discredit the work of respected scientists, even as its own data supported those findings.

At a press conference, Gov. Rick Snyder appeared chastened.

He should.

Snyder appoints the head of the Michigan Department of Environmental Quality, the agency charged with ensuring that drinking water throughout our state is safe.

In Flint, it failed.

Flint's decisions first to join a new regional water authority, and then to pump water from the Flint River _ ending a decades-long relationship with Detroit's system — were made while Flint was under state oversight, during the tenure of a Snyder-appointed emergency manager charged with balancing Flint's budget. That system is justified by the governor's constitutional responsibility to attend to the health and wellness of all Michiganders.

In Flint, he failed.

This newspaper twice endorsed Snyder for governor, albeit with grave reservations. But because of the relative weakness of his opponents, the leadership he displayed in resolving Detroit's protracted financial crisis and our hope that he would use his business acumen to ensure that government better served people, he narrowly won our endorsement.

Last year, in a detailed analysis of Snyder's record, this editorial board expressed our dissatisfaction about Snyder's first term: ``The governor balanced the budget at the expense of cities and school districts. His disdain for politics is inappropriate in the state's chief politician; his deficiencies as a deal-maker have sometimes resulted in terrible consequences for Michiganders."

This, we wrote, was Snyder's most profound flaw: ``He has got to see people, not sums, as the bottom line of the state balance sheet."

We wrote that he rarely exhibited strong, decisive leadership, that he must ``grow into a more sure-footed, principled leader." That we were fearful of what Snyder's second term could hold.

Snyder defended the state's decisions, saying it had followed EPA and MDEQ testing protocols. The state did the minimum required, his responses implied. Why should it have to do more?

This is what Snyder does not understand. To lead a state, accountancy is not sufficient. To lead a state, a balanced budget is not sufficient. To lead a state, doing only what is required is not sufficient.

The modern vogue for paring services and cutting budgets is an insidious misunderstanding of the foundations of government. Fiscal conservationism is correct to suggest that government should recognize the value of a dollar. But it is absolutely incorrect when it considers the value of a dollar more significant than other values. A dollar saved at the expense of public safety. A dollar saved at the expense of Flint's children. A dollar saved at the expense of the public trust. These are equations that can never balance.

At this math, Snyder has consistently failed.

When Flint began to pump river water, it opted not to add a chemical that would have created a film inside its aging service pipes, preventing lead from entering the water. MDEQ signed off on that plan. Snyder's representatives have said both decisions were in progress before Flint's emergency managers were appointed, belying the reality of an emergency manager's broad authority in the city he or she is charged to lead.

That Flint has aging service lines with lead materials shouldn't have been a surprise. That Flint would need to treat the water it pumped to ensure it could flow safely through those lines shouldn't have been at issue.

Here is all we can surmise: Pumping Flint River water saved money. And that, as they say, was that.

Snyder says that his team will issue an ``after action report,'' with recommendations about how things could have been done differently. This is a necessary step and should be conducted by a team with sufficient independence from Snyder's office _ and the MDEQ _ to reach impartial conclusions.

Snyder has asked the Michigan Legislature to contribute $6 million of the $12 million it will cost Flint to purchase its water from Detroit. The Charles Stewart Mott Foundation and the city itself will cover the remaining costs. The transition could be complete within two weeks. We applaud the Mott Foundation for its contribution and urge the Legislature to approve its portion of the funds required without delay.

Snyder and other officials have said Flint will continue to work to replace lead service lines. This is necessary work. The state has devoted $1 million to pay for water filters for Flint residents, another helpful measure.

People. Not sums.

Thus endeth the lesson. It is one our government should not forget. It is one Flint's children can't forget.

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John Peterson

Public Affairs

U.S. EPA Region 5

Chicago, IL

312-886-9858

708-334-7594

To: Kopocis, Ken[Kopocis.Ken@epa.gov]; Hedman, Susan[hedman.susan@epa.gov]
Cc: Distefano, Nichole[DiStefano.Nichole@epa.gov]; Harrison, Melissa[Harrison.Melissa@epa.gov]; Burke, Thomas[Burke.Thomas@epa.gov]; Grevatt, Peter[Grevatt.Peter@epa.gov]; Meiburg, Stan[Meiburg.Stan@epa.gov]
From: Purchia, Liz
Sent: Fri 10/16/2015 5:23:47 PM
Subject: RE: Draft Flint Task Force press release-please review

EPA creates task force to help Flint's water system

Jim Lynch, The Detroit News*12:27 p.m. EDT October 16, 2015*

Flint's move to reconnect to the Detroit Water and Sewerage Department will get a boost from U.S. Environmental Protection Agency experts.

The federal agency announced Friday it has created a Flint Safe Drinking Water Task Force that will work with both city officials and Michigan's Department of Environmental Quality. In addition to helping facilitate a reconnection to the Detroit water system, EPA experts will also consult on corrosion control efforts to ensure the water arriving in Flint homes does not contain dangerous levels of lead.

"EPA is committed to working with our state and local partners to ensure a safe and reliable drinking water supply for the residents of Flint, Michigan," said Susan Headman, EPA's Region 5 administrator, in a press release Friday. "The formation of this task force continues our commitment to providing technical assistance to the City of Flint and the State of Michigan."

The announcement comes on the heels of several tumultuous weeks for Flint residents. In September, local health officials released findings showing high levels of lead exposure among the city's children.

An analysis conducted by a Hurley Medical Center researcher in Flint showed that in some areas lead levels in children's blood doubled and, in two local ZIP codes, they tripled.

In an attempt to save money, the city began using the Flint River as its water source in the spring of 2014. The decision was made under the leadership of an emergency manager appointed by Gov. Rick Snyder's administration.

Escalating problems with the water caused state and city officials to opt for reconnecting to the Detroit water system, the previous supplier of Flint's drinking water, which uses Lake Superior as its source. The reconnection to Detroit is a temporary measure until Flint can finish the construction of its own pipeline to Lake Huron for a regional water authority.

JLynch@detroitnews.com

From: Kopocis, Ken
Sent: Thursday, October 15, 2015 8:34 PM
To: Hedman, Susan <hedman.susan@epa.gov>
Cc: Distefano, Nichole <DiStefano.Nichole@epa.gov>; Harrison, Melissa <Harrison.Melissa@epa.gov>; Burke, Thomas <Burke.Thomas@epa.gov>; Purchia, Liz <Purchia.Liz@epa.gov>; Grevatt, Peter <Grevatt.Peter@epa.gov>; Meiburg, Stan <Meiburg.Stan@epa.gov>
Subject: Re: Draft Flint Task Force press release-please review

This looks very good. Thanks to all.

Ken Kopocis

Office of Water

US EPA

202-564-5700

On Oct 15, 2015, at 8:24 PM, Hedman, Susan <hedman.susan@epa.gov> wrote:

> Yes -- R5 will send it to you right away in the morning.
>
> Sent from my iPhone
>
> On Oct 15, 2015, at 7:02 PM, Distefano, Nichole <DiStefano.Nichole@epa.gov> wrote:
>
>> Great. Can someone send the final version of the release? Will just need it in the morning.
>>
>> Sent from my iPhone
>>
>> On Oct 15, 2015, at 7:00 PM, Hedman, Susan <hedman.susan@epa.gov> wrote:
>>
>>> Sounds good -- that's what we will do.
>>>
>>> Sent from my iPhone
>>>
>>> On Oct 15, 2015, at 5:57 PM, Distefano, Nichole <DiStefano.Nichole@epa.gov> wrote:
>>>
>>>> That might be a little early. Can we do 10:30 CT/11:30 ET?

We're going to need a little bit of time to socialize the idea with the other offices.

Sent from my iPhone

On Oct 15, 2015, at 6:43 PM, Hedman, Susan <hedman.susan@epa.gov> wrote:

> Thanks everyone for your help with this.
>
> Nicole -- Will you have adequate time for congressional notifications if we release this at 9 am central -- and if we send an advance copy to the MDEQ Director and Mayor Walling at 8:30 central?
>
> Sent from my iPhone
>
> On Oct 15, 2015, at 5:20 PM, Harrison, Melissa <Harrison.Melissa@epa.gov> wrote:
>
>> Below is the final press release with everyone's edits incorporated. Susan-feel free to send it to your staff for distribution tomorrow morning. Thanks everyone! Melissa
>>
>> CONTACT:
>>
>> XXX
>>
>> XXX
>>
>> XXX-XXX-XXX
>>
>> FOR IMMEDIATE RELEASE
>>
>> October XX, 2015
>>
>> # EPA Establishes Safe Drinking Water

Task Force to Provide Technical Expertise to MDEQ and City of Flint

Task Force providing technical assistance on reconnecting the Flint drinking water system to a new source

CHICAGO- Today EPA Region 5 Administrator Susan Hedman established the Flint Safe Drinking Water Task Force to provide the Agency's technical expertise through regular, conversations with designated officials from Michigan Department of Environmental Quality (MDEQ) and the City of Flint. The Task Force will be led by the Region 5 Deputy Regional Administrator and will assist with developing and implementing a plan to secure water quality, including measures to optimize corrosion control. Task Force members will be available to consult with MDEQ and the City of Flint on site in Flint. The Task Force will also coordinate as necessary with federal, state and local public health agencies to assist with protection of public health.

Specifically, the Task Force will provide technical assistance to the MDEQ and the City of Flint to reconnect the Flint system to a new source of drinking water (to be supplied by the Great Lakes Water Authority) and to optimize corrosion control for the Flint system, starting in October 2015. The Task Force will also provide technical assistance to the MDEQ and the City of Flint, as needed, in advance of and following connection of the Flint water system to a new source of drinking water (to be supplied by the Karegnondi Water Authority) and to optimize corrosion control for the Flint system, starting in 2016.

"EPA is committed to working with our state and local partners to ensure a safe and reliable drinking water supply for the residents of Flint, Michigan," said Susan Hedman, EPA Region 5 Administrator. "The formation of this task force continues our commitment to providing technical assistance to assist the City of Flint and the State of Michigan."

The Task Force will be comprised of scientists and technical experts from the EPA Region 5 office in Chicago, the National Risk Management Research Lab in Cincinnati and the EPA drinking water program. In addition, EPA will ask the Governor to designate a MDEQ official and the Mayor of Flint to designate a city official, to serve as points of contact for the Task Force.

###

Melissa J. Harrison

Press Secretary

U.S. Environmental Protection Agency

Office: (202) 564-8421

Personal Phone / Ex. 6

Harrison.Melissa@epa.gov

From: Hedman, Susan
Sent: Thursday, October 15, 2015 6:10 PM
To: Harrison, Melissa <Harrison.Melissa@epa.gov>
Cc: Burke, Thomas <Burke.Thomas@epa.gov>; Purchia, Liz <Purchia.Liz@epa.gov>; Grevatt, Peter <Grevatt.Peter@epa.gov>; Meiburg, Stan <Meiburg.Stan@epa.gov>; Distefano, Nichole <DiStefano.Nichole@epa.gov>
Subject: Re: Draft Flint Task Force press release-please review

Please revise the final two paragraphs, as follows:

"EPA is committed to working with our state and local partners to ensure a safe and reliable drinking water supply for the residents of Flint, Michigan," said Susan Hedman, EPA Region 5 Administrator. "The formation of this task force continues our commitment to providing technical assistance to assist the City of Flint and the State of Michigan."

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Risk Management Research Lab in Cincinnati and the EPA drInking water program. In addition, EPA will ask the Governor to designate a MDEQ official and the Mayor of Flint to designate a city official, to serve as points of contact for the Task Force.

Sent from my iPhone

On Oct 15, 2015, at 4:48 PM, Harrison, Melissa <Harrison.Melissa@epa.gov> wrote:

> "EPA is committed to working with our state and local partners to ensure a safe and reliable water supply for the residents of Flint, Michigan," said Susan Hedman, EPA Region 5 Administrator. "The formation of this task force continues our commitment to providing technical assistance to assist Flint and the state of Michigan."
>
> The Task Force will be comprised of scientists and technical experts from EPA Region 5 offices in Chicago and the National Risk Management Research Lab in Cincinnati, and EPA Headquarters in Washington, D.C. Headquarters Offices represented include the Office of Research and Development and the Office of Ground Water and Drinking Water. In addition, EPA will ask the Governor to designate a MDEQ official and the Mayor of Flint from the city, to serve as points of contact for the Task Force.

To: Harrison, Melissa[Harrison.Melissa@epa.gov]
Cc: Purchia, Liz[Purchia.Liz@epa.gov]; Kopocis, Ken[Kopocis.Ken@epa.gov]; Distefano, Nichole[DiStefano.Nichole@epa.gov]; Burke, Thomas[Burke.Thomas@epa.gov]; Grevatt, Peter[Grevatt.Peter@epa.gov]; Meiburg, Stan[Meiburg.Stan@epa.gov]
From: Hedman, Susan
Sent: Fri 10/16/2015 5:31:44 PM
Subject: Re: Draft Flint Task Force press release-please review

Bob just heard that he is going this last night -- so could be difficult. We would probably need to work with him to develop the responses.

Sent from my iPhone

On Oct 16, 2015, at 12:27 PM, Harrison, Melissa <Harrison.Melissa@epa.gov> wrote:

> Press thus far is very positive. The region has a few inquiries that need follow up. I have suggested the deputy RA be the spokesperson as the lead on the task force. Susan-do you feel comfortable with this plan?
>
> Melissa Harrison
> Press Secretary
> EPA
> Office: (202) 564-8421
> Mobile: (202) 697-0208
> Harrison.Melissa@epa.gov
>
> On Oct 16, 2015, at 1:23 PM, Purchia, Liz <Purchia.Liz@epa.gov> wrote:

EPA creates task force to help Flint's water system

Jim Lynch, The Detroit News*12:27 p.m. EDT October 16, 2015*

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“EPA is committed to working with our state and local partners to ensure a safe and reliable drinking water supply for the residents of Flint, Michigan,” said Susan Headman, EPA’s Region 5 administrator, in a press release Friday. “The formation of this task force continues our commitment to providing technical assistance to the City of Flint and the State of Michigan.”

The announcement comes on the heels of several tumultuous weeks for Flint residents. In September, local health officials released findings showing high levels of lead exposure among the city’s children.

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JLynch@detroitnews.com

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Sent: Thursday, October 15, 2015 8:34 PM
To: Hedman, Susan <hedman.susan@epa.gov>
Cc: Distefano, Nichole <DiStefano.Nichole@epa.gov>; Harrison, Melissa <Harrison.Melissa@epa.gov>; Burke, Thomas <Burke.Thomas@epa.gov>; Purchia, Liz <Purchia.Liz@epa.gov>; Grevatt, Peter <Grevatt.Peter@epa.gov>; Meiburg, Stan <Meiburg.Stan@epa.gov>
Subject: Re: Draft Flint Task Force press release-please review

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Ken Kopocis

Office of Water

US EPA

202-564-5700

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Press Secretary

U.S. Environmental Protection Agency

Office: (202) 564-8421

Mobile: (202) 697-0208

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From: Hedman, Susan
Sent: Fri 10/16/2015 5:32:57 PM
Subject: Re: Draft Flint Task Force press release-please review

Just saw these are live interviews -- Bob is definitely not in a position to do these.

Sent from my iPhone

On Oct 16, 2015, at 12:27 PM, Harrison, Melissa <Harrison.Melissa@epa.gov> wrote:

> Press thus far is very positive. The region has a few inquiries that need follow up. I have suggested the deputy RA be the spokesperson as the lead on the task force. Susan-do you feel comfortable with this plan?
>
> Melissa Harrison
> Press Secretary
> EPA
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> # EPA creates task force to help Flint's water system
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> Jim Lynch, The Detroit News *12:27 p.m. EDT October 16, 2015*
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To: Hedman, Susan[hedman.susan@epa.gov]; Kaplan, Robert[kaplan.robert@epa.gov]; Hyde, Tinka[hyde.tinka@epa.gov]
Cc: Kelley, Jeff[kelley.jeff@epa.gov]; Rowan, Anne[rowan.anne@epa.gov]; Cassell, Peter[cassell.peter@epa.gov]; Beckmann, Ronna Erin[beckmann.ronna@epa.gov]; Harrison, Melissa[Harrison.Melissa@epa.gov]; Abrams, Dan[Abrams.Dan@epa.gov]; Poy, Thomas[poy.thomas@epa.gov]; Peterson, John[peterson.john@epa.gov]; Singer, Joshua[Singer.Joshua@epa.gov]; Arcaute, Francisco[Arcaute.Francisco@epa.gov]
From: Peterson, John
Sent: Fri 10/16/2015 8:35:24 PM
Subject: Flint Water Clips for Oct. 16 - UPDATED at 3:30 PM CDT

FLINT DRINKING WATER CLIPS – UPDATED

US. EPA Region 5 – as prepared by John Peterson *(ORA/OEC/PA)* on Oct. 16, 2015 – 3:30 pM Chicago time.

EPA establishes task force to help Flint switch water source

EPA creates task force to help Flint's water

EPA establishes task force to help Flint switch drinking water source AFTER LEAD PROBLEMS

Flint gets EPA help in reconnecting to Detroit water

EPA forms new task force to assist Flint with drinking water problems

EPA Establishes Task Force To Help Flint Switch Water Source

EPA Establishes Flint Safe Drinking Water Task Force

EPA Establishes Safe Drinking Water Task Force to Provide Technical Expertise to

MDEQ and City of Flint

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http://uppermichiganssource.com/news/local/epa-establishes-task-force-to-help-flint-switch-water-source-10-16-2015

By Associated Press Friday, October 16th 2015

FLINT (AP) — The U.S. Environmental Protection Agency has established a task force to help Flint switch its drinking water source after lead problems prompted officials to declare a public health emergency.

The Flint Safe Drinking Water Task Force announced Friday will provide technical advice.

Task force members will be available to consult with Michigan Department of Environmental Quality and Flint on site. The task force will also coordinate as necessary with federal, state and local public health agencies to assist with protection of public health.

Word of the task force comes after Gov. Rick Snyder on Thursday approved $9.3 million in aid to address Flint's water crisis.

The city stopped getting its water from Detroit's system last year in a cost-cutting move, but has had trouble with water from the Flint River.

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http://www.detroitnews.com/story/news/local/michigan/2015/10/16/epa-flint-water/74053912/

Jim Lynch, The Detroit News 12:27 p.m. EDT October 16, 2015

Flint’s move to reconnect to the Detroit Water and Sewerage Department will get a boost from U.S. Environmental Protection Agency experts.

The federal agency announced Friday it has created a Flint Safe Drinking Water Task Force that will work with both city officials and Michigan’s Department of Environmental Quality. In addition to helping facilitate a reconnection to the Detroit water system, EPA experts will also consult on corrosion control efforts to ensure the water arriving in Flint homes does not contain dangerous levels of lead.

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The announcement comes on the heels of several tumultuous weeks for Flint residents. In September, local health officials released findings showing high levels of lead exposure among the city’s children.

An analysis conducted by a Hurley Medical Center researcher in Flint showed that in some areas lead levels in children’s blood doubled and, in two local ZIP codes, they tripled.

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Escalating problems with the water caused state and city officials to opt for reconnecting to the Detroit water system, the previous supplier of Flint’s drinking water, which uses Lake Huron as its source. The reconnection to Detroit is a temporary measure until Flint can finish the construction of its own pipeline to Lake Huron for a regional water authority.

“The state welcomes the continued help and counsel of our federal partners,” said MDEQ spokesman Brad Wurfel. “We have been working with them on the challenges in Flint for months and the formalization of their support is in our opinion good news.”

JLynch@detroitnews.com

(313) 222-2034

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http://www.dailyjournal.net/view/story/90281defa44f4c0dbf07b17dff2a99ff/MI--Flint-Water

Flint Daily Journal/THE ASSOCIATED PRESS
October 16, 2015 - 12:20 pm EDT

FLINT, Michigan — The U.S. Environmental Protection Agency has established a task force to help Flint switch its drinking water source after lead problems prompted officials to declare a public health emergency.

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http://www.freep.com/story/news/local/michigan/2015/10/16/flint-epa-detroit-water/74062362/

Todd Spangler, Detroit Free Press 3:24 p.m. EDT October 16, 2015

CONNECT 1 TWEETLINKEDINCOMMENTEMAILMORE

WASHINGTON — The Environmental Protection Agency said Friday it will provide technical assistance to get Flint reconnected to Detroit’s water and sewer system and help ensure safe drinking water for residents.

In Chicago, the EPA’s regional administrator, Susan Hedman, also said the agency will work to improve corrosion control in Flint’s water lines and help it connect to the Karegnondi Water Authority as planned next year.

The announcement from the U.S. Environmental Protection Agency comes a day after Gov. Rick Snyder signed a bill authorizing $9.35 million to help Flint reconnect to the Detroit system. That came, in turn, in the wake of reports that water being pulled from the Flint River was making residents sick.

DETROIT FREE PRESS

Senate approves, Snyder signs cash for Flint water fix

Flint cancelled its contract with the Detroit water system a year ago, saying water costs were too high. Local officials planned to connect with the Karegnondi system, but its facilities were not expected to be ready for Flint until sometime next year. In the meantime, Flint started pulling water from the Flint River, sparking complaints that the water was discolored and foul-smelling.

A Flint pediatrician also said the number of local children with elevated blood-lead levels had jumped, which helped prompt Genesee County officials to warn local residents not to drink city water unless it was treated with a filtration device or otherwise shown not to contain elevated lead levels.

DETROIT FREE PRESS

Flint doctor makes state see light about lead in water

The EPA's Hedman said the Flint Safe Drinking Water Task Force will be in touch regularly with local and state officials to "assist with developing and implementing a plan to secure water quality, including measures to optimize corrosion control."

The task force will include, among others, scientists and technical experts from the EPA's Region 5 office in Chicago, the National Risk Management Research Lab in Cincinnati and the EPA's nationwide drinking water program.

U.S. Rep. Dan Kildee, D-Flint Township, said the announcement by the EPA was the "result of letters and phone calls over the past week" between his office and EPA Administrator Gina McCarthy and other officials.

"I am pleased to see that within a week the EPA has responded positively to my request and I'm hopeful that this announcement is a step forward for the future of Flint's water," said Kildee.

U.S. Sen. Gary Peters, D-Mich., also said the EPA's response it is a good step toward helping Flint solve its water problem.

"The increased lead levels found in the Flint water system are simply unacceptable," said Peters, who also added that he raised the issue with McCarthy. "All levels of government need to work together to prevent this type of situation from ever happening again."

In Lansing, Senate Minority Leader Jim Ananich, D-Flint, said while he's looking forward to working with the EPA to solve any problems he also wants the agency "to help us determine what happened and provide us with a solid oversight framework going forward. It's crucial that we take steps to ensure this never happens again."

Contact Todd Spangler at 703-854-8947 or at tspangler@freepress.com. Follow him on Twitter at @tsspangler.

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http://michiganradio.org/post/epa-forms-new-task-force-assist-flint-drinking-water-problems#stream/0

Steve Carmody / Michigan Radio/2:45 p.m. CDT

A federal task force will help the city of Flint with its drinking water problems.

Flint residents have been installing filters and drinking bottled water as problems mount with the city's water system

The U.S. Environmental Protection Agency has been criticized for not being more involved in solving Flint's water crisis.

Now the EPA is forming a special task force to provide “technical expertise” to the city and the state Department of Environmental Quality as
Flint returns to Detroit water and eventually transitions to a new pipeline going online next year.

“EPA is committed to working with our state and local partners to ensure a safe and reliable drinking water supply for the residents of Flint, Michigan,” says Susan Hedman, administrator of U.S. Environmental Protection Agency Region 5.

U.S. Senator Gary Peters, D-Mich., welcomed the announcement of the EPA's new Flint Safe Drinking Water Task Force.

“All Michiganders deserve access to safe and clean drinking water, and the increased lead levels found in the Flint water system are simply unacceptable,” says Peters.

Problems have been mounting since Flint started using its namesake river as the city's drinking water source a year and a half ago.

This week, the state and city of Flint approved spending millions of dollars to pay for water from Detroit. A local foundation is also chipping in money.

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http://detroit.cbslocal.com/2015/10/16/epa-establishes-task-force-to-help-flint-switch-water-source/

CBS Detroit/Associated Press

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http://www.9and10news.com/story/30279835/epa-establishes-flint-safe-drinking-water-task-force

Posted: Oct 16, 2015 2:48 PM CDT

By Jamie Valentine, Producer, 9&10 News Northern Michigan

Continuing coverage on the water emergency in Flint.

A task force has now been established to help Flint switch its drinking water source.

Lead problems forced officials to declare a public health emergency.

The EPA has formed the Flint Safe Drinking Water Task Force.

The team will provide technical advice and help coordinate the city's switch to Detroit's water system.

Flint stopped getting water from that system last year to cut costs, but had trouble with water from the Flint River.

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http://www.newsroomamerica.com/story/524509/epa_establishes_safe_drinking_water_task_force_to_provide_expertise_

By **Newsroom America Feeds** at 12:13 pm Eastern

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Specifically, the Task Force will provide technical assistance to the MDEQ and the City of Flint to reconnect the Flint system to a new source of drinking water (to be supplied by the Great Lakes Water Authority) and to optimize corrosion control for the Flint system, starting in October 2015. The Task Force will also provide technical assistance to the MDEQ and the City of Flint, as needed, in advance of and following connection of the Flint water system to a new source of drinking water (to be supplied by the Karegnondi Water Authority) and to optimize corrosion control for the Flint system, starting in 2016.

"EPA is committed to working with our state and local partners to ensure a safe and reliable drinking water supply for the residents of Flint, Michigan," Hedman said. "The formation of this task force continues our commitment to providing technical assistance to the City of Flint and the State of Michigan."

The Task Force will be comprised of scientists and technical experts from the EPA Region 5 office in Chicago, the National Risk Management Research Lab in Cincinnati and the EPA drinking water program. In addition, EPA will ask the Governor to designate a MDEQ official and the Mayor of Flint to designate a city official, to serve as points of contact for the Task Force.

###

John Peterson

Writer/Editor

Public Affairs

U.S. EPA Region 5

Chicago, IL

312-886-9858

708-334-7594

To: Henry, Timothy[henry.timothy@epa.gov]
Cc: Deltoral, Miguel[deltoral.miguel@epa.gov]
From: Poy, Thomas
Sent: Fri 10/16/2015 10:00:16 PM
Subject: Flint switch

I talked to Liane and Flint is close to switching back but it hasn't happened yet. The transmission line has been disinfected and they have 2 good rounds of bacti monitoring. They got a proposal from Flint's consultant on orhophospate addition which has been forwarded to Mike and Darren. DEQ was expecting a permit application for the switch to come in today from Flint.

We also talked about picking some sites to do some ongoing sampling to gauge progress of lowering lead levels. Liane will see about getting Steve Busch and Mike Pryzby together with Darren and Mike Schock on this. Things will need to happen quickly, as the switch will obviously not be delayed to do sampling.

Tom

Tom Poy
Chief, Ground and Drinking Water Branch
USEPA - Region 5
(312) 886-5991

To: Kaplan, Robert[kaplan.robert@epa.gov]
From: Henry, Timothy
Sent: Fri 10/16/2015 10:14:08 PM
Subject: Fwd: Flint switch

FYI and I will send a second with a somewhat different message.

Tim Henry
Deputy Director, Water Division
US EPA Region V
312-886-6107 (office)
312-296-0690 (cell)

Sent from my iPhone

Begin forwarded message:

> **From:** "Poy, Thomas" <poy.thomas@epa.gov>
> **Date:** October 16, 2015 at 17:00:16 CDT
> **To:** "Henry, Timothy" <henry.timothy@epa.gov>
> **Cc:** "Deltoral, Miguel" <deltoral.miguel@epa.gov>
> **Subject: Flint switch**
>
> I talked to Liane and Flint is close to switching back but it hasn't happened yet. The transmission line has been disinfected and they have 2 good rounds of bacti monitoring. They got a proposal from Flint's consultant on orhophospate addition which has been forwarded to Mike and Darren. DEQ was expecting a permit application for the switch to come in today from Flint.
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>
> Tom
>
> ______________________________
> Tom Poy
> Chief, Ground and Drinking Water Branch
> USEPA - Region 5
> (312) 886-5991

To: Poy, Thomas[poy.thomas@epa.gov]; Henry, Timothy[henry.timothy@epa.gov]
From: Deltoral, Miguel
Sent: Mon 10/19/2015 10:44:22 AM
Subject: Re: Flint switch

I told Mike I will start drafting the QAPP so he and Darren can focus on the more urgent technical issues.

Also very important - One of the likely factors that caused the very high lead release at the Citizen name / Ex. 6 ome is physical disturbances to the non-lead (galvanized iron) portion of the service line. In our Chicago study, the highest lead levels were associated with physical disturbances to the service line but the entire service lines were made of lead. In Flint, it seems the lead pipe may only be on the public side which does not appear to have been physically disturbed in the Citizen name / Ex. 6 case, but the physical disturbances to the non-lead portion of the Citizen name / Ex. 6 service line likely dislodged unstable high lead-bearing scale from inside of the non-lead portion of the service line. Even when treatment is in place and the lead portions of the service lines are removed, my concern is that physical disturbances will cause the release of this scale and sediment from within the remaining non-lead portions of the service lines. This scale and sediment will also continue to accumulate in the water heaters and consequently on the faucet aerators. Sadly, we are still finding that despite public education on not using hot water to make formula, some people continue to do so. It would make sense to recommend public education on physical disturbances and that water heaters should be flushed periodically as well to reduce the amound of lead that will be brought to the tap and trapped in the aerators.

I am assuming that Mike is going to need some service lines extracted as well to assess what is left on the pipe as that may affect how the treatment is going to work. I would recommend evaluating both the lead and non-lead portions because my fear is that removing only the lead portion of the service line may not address the risk and residents may think the problem has been solved by the removal of the lead portion of the service line. The prolonged exposure of the pipe to high chloride levels has likely rendered the existing scale to be unstable, so the 'base' on which the proposed treatment is intended to work has to be evaluated for lead and non-lead pipes as well. The scale analyses take time so we should probably start on this right away.

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Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

From: Poy, Thomas
Sent: Friday, October 16, 2015 05:00 PM
To: Henry, Timothy
Cc: Deltoral, Miguel
Subject: Flint switch

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Tom Poy
Chief, Ground and Drinking Water Branch
USEPA - Region 5
(312) 886-5991

To: Hedman, Susan[hedman.susan@epa.gov]; Kaplan, Robert[kaplan.robert@epa.gov]; Hyde, Tinka[hyde.tinka@epa.gov]
Cc: Rowan, Anne[rowan.anne@epa.gov]
From: Kelley, Jeff
Sent: Mon 10/19/2015 1:05:15 PM
Subject: From Michigan Radio: State admits Flint did not follow federal rules designed to keep lead out of water

We'll send the rest of the clips around later, but wanted you to see this one right away…

http://michiganradio.org/post/state-admits-flint-did-not-follow-federal-rules-designed-keep-lead-out-water#stream/0

State admits Flint did not follow federal rules designed to keep lead out of water

Lindsey Smith • 9 hours ago

The Michigan Department of Environmental Quality says Flint did not follow federal regulations for large water systems when it switched its source for drinking water.

"It's increasingly clear there was confusion here, but it also is increasingly clear that DEQ staff believed they were using the proper federal protocol and they were not," MDEQ Director Dan Wyant said.

Internal emails show staff in the department misinterpreted the federal Lead and Copper Rule applying to larger water systems, which are required to "maintain" corrosion control.

Wyant has removed Liane Shekter Smith as head of the department's Office of Drinking Water and Municipal Assistance. She's been reassigned until a soon to be announced "independent, third party, after-action review" to detail what went wrong before Flint's water problems and why.

There has been some flip-flopping at the state level on whether Flint has in fact implemented corrosion-control treatment, but ultimately, the consensus is that there was none.

When Flint switched its source for tap water from Detroit’s system to the Flint River in April 2014, the water flowing into the city's pipes and into people's homes was no longer treated to control corrosion. Water from Detroit came pre-treated, but when the city started pumping from the river, it didn't do any kind of corrosion control. This treatment helps keep lead and other metals from corroding from old service lines and pipes in people’s homes. Such treatment is required under federal law.

The rules are written by the U.S. Environmental Protection Agency. So far, the agency hasn't given a solid answer to that question: Did Flint violate federal drinking water regulations? One EPA spokesman wrote in an Oct.1 email: “Your inquiry is relatively complex.”

But emails Virgina Tech researcher Marc Edwards obtained under the Freedom of Information Act paint a clearer picture of the federal agency’s position.*

On June 10, the EPA and Michigan’s Department of Environmental Quality had a conference call. EPA's Miguel Del Toral provided DEQ with a summary of what he found at Flint resident Lee Anne Walters' home. Multiple tests showed Walters' home had extremely high lead levels.

The meeting notes say DEQ’s district supervisor, Steve Busch, pointed out that Flint was following federal rules.

But Del Toral noted that the rules were drafted more than 20 years ago. And since then “research and different situations, like Washington D.C., have educated scientists, experts, and regulators that the existing requirements … may not be as protective as previously thought.”

On July 21, the EPA and DEQ had another conference call. Before the call, DEQ's Liane Shekter Smith wrote in an email to the EPA:

"…While we understand your concerns with the overall implementation of the lead and copper rule(s); we think it is appropriate for EPA to indicate in writing (an email would be sufficient) your concurrence that the city is in compliance with the lead and copper rule as implemented in Michigan. This would help distinguish between our goals to address important public health issues separately from the compliance requirements of the actual rule which we believe have been and continue to be met in the city of Flint."

The meeting notes from this conference call, later that afternoon, are more telling of the federal agency's position.

EPA staff note federal regulations require the state to "review and approve" any changes in corrosion-control treatment when a water system gets a new water source. The feds go on to say that they've talked to staff and attorneys at the agency's headquarters and "believes" that systems "need to 'maintain' corrosion control."

The notes say the EPA agreed to share its legal citations once a written opinion was shared. It doesn't appear that's happened yet.

Then there's a list of "next steps" in the meeting notes from July 21. Here, the state basically agrees that Flint needs to treat to control corrosion as soon as possible. Flint will not be allowed to stop corrosion-control treatment when it switches water sources in 2016. And the state agrees that it will not allow another city water system to switch water sources without corrosion-control treatment, like it allowed Flint to do.

•□□□□□□□□ MDEQ "will have discussions with Flint to request that they start corrosion-control treatment as soon as possible."

•□□□□□□□□ "MDEQ and (EPA) were in agreement that it is important to get phosphate addition (a form of corrosion-control treatment) going in Flint as soon as possible."

•□□□□□□□□ “(EPA) commented that we now have a path forward for Flint despite a difference of opinion on whether the regulations required Flint to ‘maintain’ corrosion-control treatment when they started serving treated water from the Flint River.”

•□□□□□□□□ “MDEQ and (EPA) agreed that after Flint implements corrosion-control treatment, when they switch back to Lake Huron water, they will need to continue the corrosion-control treatment while conducting monitoring to determine if this treatment is optimized with the new Lake Huron water quality.”

•□□□□□□□□ “MDEQ and Region 5 agreed that other communities currently implementing corrosion-control treatment and change sources will need to continue to provide corrosion-control treatment and conduct monitoring to determine whether the treatment is optimized with the new source water quality.”

Three weeks later, on Aug. 10, the chief of the EPA region's drinking water office, Thomas Poy, emails officials at the state. He wants to know if Flint has “been approached about starting corrosion control sooner rather than later?”

Another week goes by before the state’s DEQ sends an official letter to Flint recommending treatment.

MDEQ’s Steve Busch says Flint has “until the end of the year to make a recommendation, but they are planning to have the treatment in place by Jan. 2016.”

On Aug. 31, there’s another conference call between EPA and Michigan’s DEQ.

They talk about the work of Virginia Tech’s Marc Edwards. Edwards’ tests have shown “serious” levels of lead in city water. The EPA’s Thomas Poy says “the results give further evidence that lead levels in Flint are trending upward.”

The meeting notes state the obvious, that Edwards’ data “is putting added pressure on MDEQ and EPA to ensure that Flint addresses their lack of corrosion-control treatment in an expedited manner” to protect people from lead exposure.

“EPA acknowledged that to delay installation of corrosion control treatment in Flint would likely cause even higher levels of lead over time as Flint’s many lead service lines (about 15,000) are continuously in contact with corrosive water.”

Two days later, EPA’s Poy follows up with DEQ staff, asking if Flint had decided yet if it would implement treatment.

The next day, Sept. 3, Flint makes the decision to treat for corrosion control. It’s not expected to cost much, since the feed lines at the water treatment plant are already in place. The city just needs different sized pumps, state officials said in emails.

In the end, Flint, or the state, or both, decided the city would switch back to Detroit's water system instead.

Jeff Kelley
Director, Office of External Communications
U.S. EPA Region 5
ph: 312-353-1159

To: Poy, Thomas[poy.thomas@epa.gov]; Deltoral, Miguel[deltoral.miguel@epa.gov]; Crooks, Jennifer[crooks.jennifer@epa.gov]
From: Shoven, Heather
Sent: Mon 10/19/2015 1:31:26 PM
Subject: Phone conversation with Citizen name / Ex. 6 Flint, Michigan RE: Lead service line schematics + Need for public outreach

Hi Tom, Jennifer, and Miguel,

I spoke with Citizen name / Ex. 6 (Personal Phone / Ex. 6 this morning and he asked if I knew any of the people on the new EPA task force that was announced on Friday. He wanted me to pass along his name and number to a task force member so that he could let them know about the lead service line maps that are located at the Court Street Water Department location.

Citizen name / Ex. 6 also notified me that there are still many people in the community that are not aware of the severity of the water quality issues and the availability of filters. He asked if EPA was planning any outreach that included delivery of information about the water to each home. I told him that the Task Force focus will be to provide technical assistance on drinking water treatment and that they'll be needing to take samples to characterize the water quality and determine the appropriate treatment to optimize corrosion control. I told him that I didn't know if EPA was planning to conduct public outreach.

He also reminded me that he was anxious to receive a copy of the EPA memo regarding corrosion control treatment requirements for large systems because he believes that Flint has been in violation of the LCR since switching to the Flint River water.

Best wishes,

Heather

Heather A. Shoven | Enforcement Team Leader | U.S. Environmental Protection Agency, Region 5

Ground Water and Drinking Water Branch | 77 W. Jackson Blvd (WG-15J) | Chicago, IL 60604 | 312-886-0153

To: Deltoral, Miguel[deltoral.miguel@epa.gov]
Cc: Crooks, Jennifer[crooks.jennifer@epa.gov]
From: Porter, Andrea
Sent: Mon 10/19/2015 3:29:18 PM
Subject: re: results of 3rd sample from Citizen name / Ex. 6 home? --> as of your 9/8/15 email (attached), 3rd round not included

Hi Miguel and Jennifer,

Any luck finding 3rd round results from Citizen name / Ex. 6 home? I can't find anything on it in my email, but I thought the emails below might help us narrow down when we heard about it. As of Miguel's 9/8/15 timeline of sampling at Citizen name / Ex. 6 home (below), the 707 ug/L result from the 3rd round is not listed. So, we'd be looking for an email, etc. from after that date, right? I'll forward anything else I find.

Also, in case it helps with the search, according to FOIA'd emails on www.flintwaterstudy.org, the 707 ug/L sample was taken on April 2, 2015.

Sorry,

Andrea Porter

Environmental Engineer

Ground Water & Drinking Water Branch

U.S. EPA, Region 5 (WG-15J)

77 W. Jackson Blvd.

Chicago, IL 60604

Phone: 312-886-4427

Fax: 312-697-2656

From: Deltoral, Miguel
Sent: Tuesday, September 08, 2015 6:52 AM
To: Bair, Rita

Cc: Crooks, Jennifer; Porter, Andrea
Subject: Fw: Lead Testing - Media Question

Sorry, I just noticed you were not on the list of folks.

Rita - I am not sure who else I should be keeping in the loop other than Jen and Andrea. Nick? Heather? Janet? Kim? Please advise.

Miguel A. Del Toral

Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

From: Deltoral, Miguel
Sent: Tuesday, September 8, 2015 06:48 AM
To: Rowan, Anne; Singer, Joshua
Cc: Cassell, Peter; Peterson, John; Poy, Thomas; Henry, Timothy; Hyde, Tinka
Subject: Re: Lead Testing - Media Question

Good morning all...

There appears to be some confusion as to who collected the samples. There were multiple sampling events at Citizen name / Ex. 6 home. The following is a summary of sampling conducted at the Citizen name / Ex. 6 home that I am aware of.

Sampling history at Citizen name / Ex. 6 home

At the residents' request, the City of Flint tested the drinking water at the home of Citizen name / Ex. 6

Citizen name / Ex. 6 for lead on two occasions. The lead results were 104 µg/L on February 18, 2015, and 397 µg/L on March 3, 2015.

Subsequent to the discovery of these high lead levels, the City of Flint shut off the water to the Citizen name / Ex. 6 home on April 3, 2015.

The water was briefly turned back on by Citizen name / Ex. 6 on April 27-28, 2015 to collect additional samples. The water had sat unused from April 3, 2015 to April 27, 2015.The kitchen tap was flushed for 45 minutes the night of April 27, 2015 and a series of sequential samples (total of 30) were collected on April 28, 2015 by Citizen name / Ex. 6. These samples were sent to Dr. Marc Edwards at Virginia Tech for analysis. The sample results ranged in value from 200 µg/L to 13,200 µg/L, with an average value of 2,500 µg/L.

It was found that a portion of the service line serving Citizen name / Ex. 6 home was made of lead and the City of Flint replaced Citizen name / Ex. 6 service line on May 6, 2015.

Following the replacement of the service line, a total of 18 samples were collected by Citizen name / Ex. 6 Citizen name / Ex. 6 on May 13, 2015 and sent to the U.S. EPA Chicago Regional Laboratory for analysis. The results of 15 sequential samples (one sample collected right after another) from the kitchen tap ranged from 0.51 µg/L to 3.9 µg/L, with an average of 1.5 µg/L, indicating that the replacement of the service line was successful in removing the source of lead into the Citizen name / Ex. 6 home. The bathroom tap result was 5.5 µg/L and the two sample results from the hot water heater were 31.7 µg/L and 9.74 µg/L.

Note: The water heater was sampled as it is typical to find lead-bearing deposits accumulated in the water heaters where upstream sources of lead are or were present, which is one of the reasons why EPA/CDC advises people not to use hot water for cooking or making formula.

Miguel A. Del Toral

Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

From: Rowan, Anne
Sent: Friday, September 4, 2015 03:11 PM
To: Singer, Joshua
Cc: Deltoral, Miguel; Cassell, Peter; Peterson, John; Poy, Thomas; Henry, Timothy; Hyde, Tinka
Subject: RE: Lead Testing - Media Question

Thanks, Josh.

Peter, please follow up with reporter and with WD on Tuesday to respond to this media inquiry.

Anne Rowan, Chief

Public Affairs Section

Office of External Communications

U.S. EPA Region 5, Chicago

rowan.anne@epa.gov

312-353-9391

From: Singer, Joshua
Sent: Friday, September 04, 2015 2:53 PM
To: Rowan, Anne
Cc: Deltoral, Miguel; Cassell, Peter; Peterson, John; Poy, Thomas; Henry, Timothy; Hyde, Tinka
Subject: RE: Lead Testing - Media Question

Given the time, I will send the reporter the desk statement today and tell her to contact Pete next week if she has further questions. The reporter seems to be primarily concerned with the sampling at that one home. Thank you.

Josh Singer

U.S. EPA, Region 5

phone: 312-353-5069

singer.joshua@epa.gov

From: Rowan, Anne
Sent: Friday, September 04, 2015 1:53 PM
To: Singer, Joshua
Cc: Deltoral, Miguel; Cassell, Peter; Peterson, John; Poy, Thomas; Henry, Timothy; Hyde, Tinka
Subject: RE: Lead Testing - Media Question

Josh- I'm not sure who is in today who'd be to respond or if EPA would share discuss testing results for a private home with a reporter. We do have a statement from yesterday that we can share with this reporter today. The rest may have to wait until Tuesday. If so, Peter will pick it up.

Tom, Tinka, if you're working today – any advice about how to proceed? Thanks.

Below is a statement the RA approved yesterday:

EPA and the Michigan Department of Environmental Quality are working closely with the City of Flint to ensure that residents are provided with safe drinking water. MDEQ determined that although recent lead monitoring shows Flint has not exceeded the lead action level (15 ug/L), the results indicate Flint does not have optimized corrosion control. EPA and MDEQ have recommended that Flint implement corrosion control treatment as soon as possible since the city's lead service lines can leach lead into the drinking water if left untreated.

The City of Flint recently accepted EPA's offer to provide technical assistance to the City and MDEQ on the optimization of corrosion control in the city's water distribution system. The City's Technical Advisory Committee has been notified that experts from EPA's Office of Research and Development (in Cincinnati) will join the panel.

Flint residents who are concerned about lead in their drinking should contact the water utility and may request their water be sampled. Additional information about lead in drinking water is available at http://water.epa.gov/drink/contaminants/basicinformation/lead.cfm.

Anne Rowan, Chief

Public Affairs Section

Office of External Communications

U.S. EPA Region 5, Chicago

rowan.anne@epa.gov

312-353-9391

From: Singer, Joshua
Sent: Friday, September 04, 2015 1:34 PM
To: Rowan, Anne
Cc: Deltoral, Miguel; Cassell, Peter; Peterson, John; Poy, Thomas; Henry, Timothy; Hyde, Tinka
Subject: FW: Lead Testing - Media Question

Please see the reporter's question below.

I am not sure if we can tell media what private residences we have tested (if we have tested this residence).

Do we have any personnel in Flint who would be appropriate for the reporter to interview?

Is there a desk statement that we used to respond to the inquiry from the Flint Journal that we received yesterday that we can send to this reporter?

For now, I will tell the reporter that I will check on her question but may not be able to respond this afternoon.

Thanks.

Josh Singer

U.S. EPA, Region 5

phone: 312-353-5069

singer.joshua@epa.gov

From: Dupnack, Jessica [Personal Email / Ex. 6]
Sent: Friday, September 04, 2015 1:24 PM
To: Singer, Joshua
Subject: RE: Lead Testing - Media Question

This is regarding some testing that was done at Citizen name / Ex. 6 home in the City of Flint.
She lives at 212 Browning. She presented documentation from Miquel Del Toral that the water was tested.
The results of multiple testing showed extremely high levels of Lead in the water.
I would like to confirm that the testing was done and the preliminary report is in fact real.

Also, if there is any way someone could do an interview with us next week about this I would like to at least put that out there.

From: Singer, Joshua [Singer.Joshua@epa.gov]
Sent: Friday, September 04, 2015 2:22 PM
To: Dupnack, Jessica
Subject: RE: Lead Testing - Media Question

Jessica,

Could you please send me your questions?

Thank you.

Josh Singer

U.S. EPA, Region 5

phone: 312-353-5069

singer.joshua@epa.gov

From: Dupnack, Jessica [redacted] Personal Email / Ex. 6
Sent: Friday, September 04, 2015 1:11 PM
To: Singer, Joshua
Subject: Lead Testing - Media Question

Hello! This is Jessica Dupnack from ABC 12 News in Flint, MI.
I am working on a story about elevated Lead levels in the water here.
Was looking to get some details from you. If you could get back to me today that would be awesome.
My cell is [redacted] Personal Phone / Ex. 6

Thanks.

To: Porter, Andrea[porter.andrea@epa.gov]
From: Crooks, Jennifer
Sent: Mon 10/19/2015 3:31:19 PM
Subject: RE: results of 3rd sample from Citizen name / Ex. 6 home? --> as of your 9/8/15 email (attached), 3rd round not included

Hi, Andrea. I did not know there was a 3rd sample taken from Citizen name / Ex. 6 house.

From: Porter, Andrea
Sent: Monday, October 19, 2015 10:29 AM
To: Deltoral, Miguel
Cc: Crooks, Jennifer
Subject: re: results of 3rd sample from Citizen name / Ex. 6 home? --> as of your 9/8/15 email (attached), 3rd round not included

Hi Miguel and Jennifer,

Any luck finding 3rd round results from the Citizen name / Ex. 6 home? I can't find anything on it in my email, but I thought the emails below might help us narrow down when we heard about it. As of Miguel's 9/8/15 timeline of sampling at the Citizen name / Ex. 6 home (below), the 707 ug/L result from the 3rd round is not listed. So, we'd be looking for an email, etc. from after that date, right? I'll forward anything else I find.

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Sorry,

Andrea Porter

Environmental Engineer

Ground Water & Drinking Water Branch

U.S. EPA, Region 5 (WG-15J)

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Chicago, IL 60604

Phone: 312-886-4427

Fax: 312-697-2656

From: Deltoral, Miguel
Sent: Tuesday, September 08, 2015 6:52 AM
To: Bair, Rita
Cc: Crooks, Jennifer; Porter, Andrea
Subject: Fw: Lead Testing - Media Question

Sorry, I just noticed you were not on the list of folks.

Rita - I am not sure who else I should be keeping in the loop other than Jen and Andrea. Nick? Heather? Janet? Kim? Please advise.

Miguel A. Del Toral

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From: Deltoral, Miguel
Sent: Tuesday, September 8, 2015 06:48 AM
To: Rowan, Anne; Singer, Joshua
Cc: Cassell, Peter; Peterson, John; Poy, Thomas; Henry, Timothy; Hyde, Tinka
Subject: Re: Lead Testing - Media Question

Good morning all...

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Subsequent to the discovery of these high lead levels, the City of Flint shut off the water to the [redacted] home on April 3, 2015.

The water was briefly turned back on by the [redacted] on April 27-28, 2015 to collect additional samples. The water had sat unused from April 3, 2015 to April 27, 2015.The kitchen tap was flushed for 45 minutes the night of April 27, 2015 and a series of sequential samples (total of 30) were collected on April 28, 2015 by [redacted] These samples were sent to Dr. Marc Edwards at Virginia Tech for analysis. The sample results ranged in value from 200 µg/L to 13,200 µg/L, with an average value of 2,500 µg/L.

It was found that a portion of the service line serving the [redacted] home was made of lead and the City of Flint replaced the [redacted] service line on May 6, 2015.

Following the replacement of the service line, a total of 18 samples were collected by [redacted] on May 13, 2015 and sent to the U.S. EPA Chicago Regional Laboratory for analysis. The results of 15 sequential samples (one sample collected right after another) from the kitchen tap ranged from 0.51 µg/L to 3.9 µg/L, with an average of 1.5 µg/L, indicating that the replacement of the service line was successful in removing the source of lead into the [redacted] home. The bathroom tap result was 5.5 µg/L and the two sample results from the hot water heater were 31.7 µg/L and 9.74 µg/L.

Note: The water heater was sampled as it is typical to find lead-bearing deposits accumulated in the water heaters where upstream sources of lead are or were present, which is one of the reasons why EPA/CDC advises people not to use hot water for cooking or making formula.

Miguel A. Del Toral

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Chicago, IL 60604
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To: Singer, Joshua
Cc: Deltoral, Miguel; Cassell, Peter; Peterson, John; Poy, Thomas; Henry, Timothy; Hyde, Tinka
Subject: RE: Lead Testing - Media Question

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Anne Rowan, Chief

Public Affairs Section

Office of External Communications

U.S. EPA Region 5, Chicago

rowan.anne@epa.gov

312-353-9391

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Sent: Friday, September 04, 2015 2:53 PM

To: Rowan, Anne
Cc: Deltoral, Miguel; Cassell, Peter; Peterson, John; Poy, Thomas; Henry, Timothy; Hyde, Tinka
Subject: RE: Lead Testing - Media Question

Given the time, I will send the reporter the desk statement today and tell her to contact Pete next week if she has further questions. The reporter seems to be primarily concerned with the sampling at that one home. Thank you.

Josh Singer

U.S. EPA, Region 5

phone: 312-353-5069

singer.joshua@epa.gov

From: Rowan, Anne
Sent: Friday, September 04, 2015 1:53 PM
To: Singer, Joshua
Cc: Deltoral, Miguel; Cassell, Peter; Peterson, John; Poy, Thomas; Henry, Timothy; Hyde, Tinka
Subject: RE: Lead Testing - Media Question

Josh- I'm not sure who is in today who'd be to respond or if EPA would share discuss testing results for a private home with a reporter. We do have a statement from yesterday that we can share with this reporter today. The rest may have to wait until Tuesday. If so, Peter will pick it up.

Tom, Tinka, if you're working today – any advice about how to proceed? Thanks.

Below is a statement the RA approved yesterday:

EPA and the Michigan Department of Environmental Quality are working closely with the City of Flint to ensure that residents are provided with safe drinking water. MDEQ determined that although recent lead monitoring shows Flint has not exceeded the lead action level (15 ug/L), the results indicate Flint does not have optimized corrosion control. EPA and MDEQ have recommended that Flint implement corrosion control treatment as soon as possible since the city's lead service lines can leach lead into the drinking water if left untreated.

The City of Flint recently accepted EPA's offer to provide technical assistance to the City and MDEQ on the optimization of corrosion control in the city's water distribution system. The City's Technical Advisory Committee has been notified that experts from EPA's Office of Research and Development (in Cincinnati) will join the panel.

Flint residents who are concerned about lead in their drinking should contact the water utility and may request their water be sampled. Additional information about lead in drinking water is available at http://water.epa.gov/drink/contaminants/basicinformation/lead.cfm.

Anne Rowan, Chief

Public Affairs Section

Office of External Communications

U.S. EPA Region 5, Chicago

rowan.anne@epa.gov

312-353-9391

From: Singer, Joshua
Sent: Friday, September 04, 2015 1:34 PM
To: Rowan, Anne
Cc: Deltoral, Miguel; Cassell, Peter; Peterson, John; Poy, Thomas; Henry, Timothy; Hyde, Tinka
Subject: FW: Lead Testing - Media Question

Please see the reporter's question below.

I am not sure if we can tell media what private residences we have tested (if we have tested this residence).

Do we have any personnel in Flint who would be appropriate for the reporter to interview?

Is there a desk statement that we used to respond to the inquiry from the Flint Journal that we received yesterday that we can send to this reporter?

For now, I will tell the reporter that I will check on her question but may not be able to respond this afternoon.

Thanks.

Josh Singer

U.S. EPA, Region 5

phone: 312-353-5069

singer.joshua@epa.gov

From: Dupnack, Jessica [mailto:jessica.dupnack@abc12.com]
Sent: Friday, September 04, 2015 1:24 PM
To: Singer, Joshua
Subject: RE: Lead Testing - Media Question

This is regarding some testing that was done at Citizen name / Ex. 6 home in the City of Flint.
She lives at Personal Address / Ex. 6 She presented documentation from Miquel Del Toral that the water was tested.
The results of multiple testing showed extremely high levels of Lead in the water.

I would like to confirm that the testing was done and the preliminary report is in fact real.

Also, if there is any way someone could do an interview with us next week about this I would like to at least put that out there.

From: Singer, Joshua [Singer.Joshua@epa.gov]
Sent: Friday, September 04, 2015 2:22 PM
To: Dupnack, Jessica
Subject: RE: Lead Testing - Media Question

Jessica,

Could you please send me your questions?

Thank you.

Josh Singer

U.S. EPA, Region 5

phone: 312-353-5069

singer.joshua@epa.gov

From: Dupnack, Jessica [mailto:jessica.dupnack@abc12.com]
Sent: Friday, September 04, 2015 1:11 PM
To: Singer, Joshua
Subject: Lead Testing - Media Question

Hello! This is Jessica Dupnack from ABC 12 News in Flint, MI.
I am working on a story about elevated Lead levels in the water here.
Was looking to get some details from you. If you could get back to me today that would be awesome.
My cell is Personal Phone / Ex. 6

Thanks.

To: MIGUEL DEL TORAL Personal Email / Ex. 6
From: Schock, Michael
Sent: Mon 10/19/2015 4:13:22 PM
Subject: FW: Flint WTP PH2 SEG4 - Corrosion Control

Tom Burke, Acting AA for ORD, told Darren to send it. Jeff read it quickly and is oK with the dosages we recommended. R5 RA and Tom Poy will be getting a copy shortly.

From: Lytle, Darren
Sent: Monday, October 19, 2015 12:05 PM
To: Prysby, Mike (DEQ) <PRYSBYM@michigan.gov>
Cc: Schock, Michael <Schock.Michael@epa.gov>; Kempic, Jeffrey <Kempic.Jeffrey@epa.gov>; Busch, Stephen (DEQ) <BUSCHS@michigan.gov>
Subject: RE: Flint WTP PH2 SEG4 - Corrosion Control

Mike,

Thank-you for giving us the opportunity to review the city of Flint's corrosion control plan.

We believe it is necessary that Flint boosts orthophosphate dosage. Given that the distribution system has not received orthophosphate in over a year, we expect that orthophosphate will need to be boosted to 1) meet the demand of the distribution system, 2) reach the service lines and other lead-containing components in premise plumbing, and 3) accelerate lead reduction at the consumer's taps. Orthophosphate should preferably be added in the same form as the Detroit source which is phosphoric acid from our understanding. This is the proposed case here, however, a simple test should be performed to make sure that the pH is not impacted in a significant way at the desired target dose.

We have not been able to obtain comprehensive water quality data for the finished water characteristics of the Detroit water that will be fed to Flint, to assess ranges of major chemical characteristic fluctuations. However, based upon the email trail, Detroit water entering the Flint system appears to only contain around 0.4 PO4/L. This concentration range is entirely too low compared to that needed in studies presented and published in the last 20+ years that have focused on lead released directly from lead pipes, and the solubility of the most likely lead orthophosphate pipes scales. We also strongly feel that targeted dose of 0.8 mg PO4/L is also too low, for the very same reason. We would be glad to share with you numerous standard

corrosion control and treatment reference works, best practices guides and published results from US and international lead corrosion control field and pilot studies. Secondly, the basis for that target (other communities using Lake Huron source use the same dose) is not scientifically derived nor does it consider water quality and the current state of Flint's distribution system. We have reviewed the original Detroit corrosion study and have seen some of the LCR monitoring data, and besides the fact that it did not directly pertain to this water source, few dosages were tested in the cited 1994 pipe loop study, and the higher dosage than the one implemented in the field currently was more effective. Based on the limited amount of data on the quality of Detroit water, what we know about the history of Detroit corrosion control, we think an orthophosphate residual of 3 to 4 mg PO4/L should be the minimum starting test target residual for pipe passivation. It is likely that, at least initially a higher dosage will be necessary to reach the far ends of the distribution system and sufficiently reduce lead solubility and release from all lead sources. To allow flexibility, we feel the design of the chemical feed and storage systems should be able to consistently deliver a maximum dose of 5 to 6 mg PO4/L, if substantial orthophosphate loss is observed, if the starting dose is set for the desired residual level of 3 to 4 mg/L as PO4. We suggest that jar tests be performed in advance of orthophosphate addition to Detroit water to evaluate the impact of orthophosphate dose on turbidity that could result from interactions between orthophosphate and background Detroit water quality parameters (e.g., aluminum, calcium, etc.).

We want to stress that immediately shifting to Detroit water and adding orthophosphate will not necessarily translate to immediate improvements. Furthermore, this is a change, albeit a return to past conditions. Nonetheless, a period of system upset should be anticipated. The need for a communication strategy and a distribution system plan are critical.

Lastly, we see no mention of a water quality monitoring program. Two programs need to be put in place immediately (before return to Detroit water) to 1) identify lead sources, 2) assess treatment effectiveness against lead release from all of the simultaneously operating mechanisms (solubility, particulate release, galvanic corrosion), and 3) assess orthophosphate levels and stability of water quality in the distribution system.

There are multiple sources of lead in the Flint distribution system to the consumers' taps, such as: pipes; leaded brass; leaded solder; accumulations on old galvanized steel pipes; possibly accumulated on copper or some plastic pipes. It is critical that the fate of orthophosphate in the distribution system is understood, and how effective it is against each type of lead source, so dosing adjustment can be properly made. For this purpose, we recommend that a number of residences throughout Flint that meet the following plumbing criteria, be identified for an assessment of the contribution lead from the different potential service line and interior plumbing sources, through detailed mapping of plumbing materials, lengths, sizes, and location and type of inline devices and faucets using profile sampling. For confidence in interpretation, probably at

least 5 sites from each of the configurations will be necessary. The configurations we would estimate to be most important (but should be changed or added to if local construction practice indicates it's necessary): Lead service line, galvanized steel interior plumbing; lead service line, copper with leaded solder joints; lead service line, plastic interior plumbing. It is also possible that interior plumbing may differ from the material used for the customer-side service line segment. We would be glad to discuss the specifics of this sampling effort.

For the purpose of assessing stability of water quality in the distribution system and to inform on orthophosphate residual adjustment, we suggest that 8 to 10 locations in the distribution system be selected to measure pH, alkalinity, orthophosphate, turbidity and iron on a weekly basis. These could be collected from TCR sampling locations, or other readily-accessible buildings, should be located at a distribution of locations in the distribution system and should be collected after a flush sufficiently long to assure that "fresh" distribution system water is being measured. Research has shown that over time, orthophosphate can reduce disinfectant demand associated with corroding metallic distribution system materials. These measurements need to be performed in the field and can simply be done with a portable HACH test kit or spectrophotometer.

A lead sampling plan needs to be in place to access the effectiveness of water change and treatment boost. LCR monitoring sites with confirmed lead service lines can be in the sampling pool. Sampling should consist of a 1 liter first draw sample (LCR sample without 5 minute pre-flush), followed by an additional flushed sample or two depending on profile sample results which is intended to capture major lead source(s). The specific details of this effort need to be worked out by the technical committee as soon as possible. We would gladly work with Flint on establishing a water sampling program to identity and verify lead service line sites. The plan and initial sampling effort should be performed before the switch so that one baseline sample set is collected.

Lastly, our strength does not fall under full-scale pump and chemical feed delivery systems. We would only say that the systems need to be scaled-up in size to accommodate our suggested dosing needs. Also, there is the some discussion about diverting water to the Dort reservoir and an associated orthophosphate feed system. We are not familiar with the reservoir but are wondering if it is an open reservoir?

Of course this is a lot of information to share and we would gladly be available to discuss the technical and scientific basis for our suggestions.

Let us know if you have any questions and thanks again,

Darren and Mike

Darren A. Lytle, Ph.D., P.E.

Branch Chief (Acting)

U.S. Environmental Protection Agency

26 West Martin Luther King Dr.

Cincinnati, Ohio 45268

Phone: (513) 569-7432

Fax: (513) 487-2543

email: lytle.darren@epa.gov

From: Prysby, Mike (DEQ) [mailto:PRYSBYM@michigan.gov]
Sent: Friday, October 16, 2015 1:32 PM
To: Lytle, Darren <Lytle.Darren@epa.gov>; Schock, Michael <Schock.Michael@epa.gov>
Cc: Busch, Stephen (DEQ) <BUSCHS@michigan.gov>
Subject: FW: Flint WTP PH2 SEG4 - Corrosion Control

Darren, Michael

We have received Flint's corrosion control proposal from their consultant. If you have comments, please provide them to me by Monday morning.

Michael Prysby, P.E.

District Engineer

Office of Drinking Water and Municipal Assistance

517 290-8817

From: Matta, Samir [mailto:SFMatta@lan-inc.com]
Sent: Friday, October 16, 2015 12:02 AM
To: Prysby, Mike (DEQ)
Subject: Flint WTP PH2 SEG4 - Corrosion Control

Hi Mike,

Please see attached plans for the Corrosion Control Plan for the City of Flint. I will have the official submittal package to you tomorrow afternoon after I get Brent or Mike's signature on the permit application. I will call you when I get back in Lansing to drop the package. Is three sets of full size plans adequate? Would you like some half size plans? Let me know.

Basis of Design

Given that Flint will require lead and copper corrosion control and given that Detroit utilizes orthophosphate for their corrosion control methodology, and that Flint will be receiving Detroit water for the immediate future, orthophosphate is the appropriate corrosion control methodology for Flint. A dosage of 0.8 mg/l as PO_4 has been recommended for the Detroit water. Numerous utilities utilizing Lake Michigan water have a target dosage of 0.9 mg/l as PO_4. Therefore, a target dosage in the range of 0.8 to 0.9 mg/l appears appropriate.

It is expected that, at least initially, there will be a significant PO_4 demand in the system. This will require a significantly higher dosage until this demand is satisfied and the target residual can be maintained. We are therefore designing for capability of a maximum dosage of 1.5 mg/l.

The arriving Detroit water will likely have some residual PO_4 when it arrives at Flint. It has been reported that this residual will be approximately 0.4 mg/l. The system must therefore be capable of a minimum dosage of 0.4 mg/l.

Based upon the usage of 75% Phosphoric Acid and a flow range of 4 MGD to 25 MGD, with an average day of 16 MGD, the expected feed rate will be 1.35 to 32 gpd. Average Phosphoric Acid feed is expected to be 10.8 gpd, requiring 30 days storage of 325 gal.

Orthophosphate will need to be applied at two locations. Detroit water will enter the Flint system at Control Station CS2, and supplementary phosphate will be applied there. However, on occasion some incoming water may need to be diverted to the Dort Reservoir, bypassing CS2. This water would then be introduced to the system through High Service Pump Station PS4 and phosphate would be introduced at this location.

Please let me know if the information is adequate or you require additional information.

Thanks.

Samir F. Matta, PE

Team Leader

Lockwood, Andrews
& Newnam, Inc.
A LEO A DALY COMPANY

1311 South Linden Road, Suite B • Flint, MI 48532

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To: Kelley, Jeff[kelley.jeff@epa.gov]; Hedman, Susan[hedman.susan@epa.gov]; Kaplan, Robert[kaplan.robert@epa.gov]; Hyde, Tinka[hyde.tinka@epa.gov]
Cc: Rowan, Anne[rowan.anne@epa.gov]; Beckmann, Ronna Erin[beckmann.ronna@epa.gov]; Harrison, Melissa[Harrison.Melissa@epa.gov]; Abrams, Dan[Abrams.Dan@epa.gov]; Poy, Thomas[poy.thomas@epa.gov]; Fortin, Denise[Fortin.Denise@epa.gov]; Deamer, Eileen[deamer.eileen@epa.gov]; Singer, Joshua[Singer.Joshua@epa.gov]; Arcaute, Francisco[Arcaute.Francisco@epa.gov]; Peterson, John[peterson.john@epa.gov]; Loop, Travis[Loop.Travis@epa.gov]
From: Cassell, Peter
Sent: Mon 10/19/2015 4:28:15 PM
Subject: Flint Clips for Oct. 19

FLINT DRINKING WATER CLIPS

US. EPA Region 5 – as prepared by Peter Cassell *(ORA/OEC/PA)* on Oct. 19, 2015.

□□□□□□□□□□ State admits Flint did not follow federal rules designed to keep lead out of water (Michigan Radio)

□□□□□□□□□□ Michigan DEQ vows changes in Flint water crisis (Detroit News)

□□□□□□□□□□ DEQ replaces water official after state acknowledges 'mistake' in Flint (MLive)

□□□□□□□□□□ Flint water crisis is tidal wave issue in city's mayoral election (MLive)

□□□□□□□□□□ Schools taking no chance in face of Flint crisis (Times Herald)

□□□□□□□□□□ Michigan official: Federal water rules not followed in Flint (Washington Times/AP)

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http://michiganradio.org/post/state-admits-flint-did-not-follow-federal-rules-designed-keep-lead-out-water#stream/0

By Lindsey Smith · 12 hours ago

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Credit Steve Carmody / Michigan Radio

The Michigan Department of Environmental Quality says Flint did not follow federal regulations for large water systems when it switched its source for drinking water.

"It's increasingly clear there was confusion here, but it also is increasingly clear that DEQ staff believed they were using the proper federal protocol and they were not," MDEQ Director Dan Wyant said.

Internal emails show staff in the department misinterpreted the federal Lead and Copper Rule applying to larger water systems, which are required to "maintain" corrosion control.

Wyant has removed Liane Shekter Smith as head of the department's Office of Drinking Water and Municipal Assistance. She's been reassigned until a soon to be announced "independent, third party, after-action review" to detail what went wrong before Flint's water problems and why.

There has been some flip-flopping at the state level on whether Flint has in fact implemented corrosion-control treatment, but ultimately, the consensus is that there was none.

When Flint switched its source for tap water from Detroit's system to the Flint River in A pril 2014, the water flowing into the city's pipes and into people's homes was no longer treated to control corrosion. Water from Detroit came pre-treated, but when the city started pumping from the river, it didn't do any kind of corrosion control. This treatment helps keep lead and other metals from corroding from old service lines and pipes in people's homes. Such treatment is required under federal law.

The rules are written by the U.S. Environmental Protection Agency. So far, the agency hasn't given a solid answer to that question: Did Flint violate federal drinking water regulations? One EPA spokesman wrote in an Oct.1 email: “Your inquiry is relatively complex.”

But emails Virgina Tech researcher Marc Edwards obtained under the Freedom of Information Act paint a clearer picture of the federal agency’s position.*

On June 10, the EPA and Michigan’s Department of Environmental Quality had a conference call. EPA's Miguel Del Toral provided DEQ with a summary of what he found at Flint resident Lee Anne Walters' home. Multiple tests showed Walters' home had extremely high lead levels.

The meeting notes say DEQ’s district supervisor, Steve Busch, pointed out that Flint was following federal rules.

But Del Toral noted that the rules were drafted more than 20 years ago. And since then “research and different situations, like Washington D.C., have educated scientists, experts, and regulators that the existing requirements … may not be as protective as previously thought.”

On July 21, the EPA and DEQ had another conference call. Before the call, DEQ's Liane Shekter Smith wrote in an email to the EPA:

“…While we understand your concerns with the overall implementation of the lead and copper rule(s); we think it is appropriate for EPA to indicate in writing (an email would be sufficient) your concurrence that the city is in compliance with the lead and copper rule as implemented in Michigan. This would help distinguish between our goals to address important public health issues separately from the compliance requirements of the actual rule which we believe have been and continue to be met in the city of Flint.”

The meeting notes from this conference call, later that afternoon, are more telling of the federal agency’s position.

EPA staff note federal regulations require the state to “review and approve” any changes in corrosion-control treatment when a water system gets a new water source. The feds go on to say that they’ve talked to staff and attorneys at the agency’s headquarters and “believes” that systems “need to ‘maintain’ corrosion control.”

The notes say the EPA agreed to share its legal citations once a written opinion was shared. It doesn't appear that's happened yet.

Then there’s a list of “next steps” in the meeting notes from July 21. Here, the state basically agrees that Flint needs to treat to control corrosion as soon as possible. Flint will not be allowed to stop corrosion-control treatment when it switches water sources in 2016. And the state agrees that it will not allow another city water system to switch water sources without corrosion-control treatment, like it allowed Flint to do.

MDEQ “will have discussions with Flint to request that they start corrosion-control treatment as soon as possible.”

“MDEQ and (EPA) were in agreement that it is important to get phosphate addition (a form of corrosion-control treatment) going in Flint as soon as possible.”

“(EPA) commented that we now have a path forward for Flint despite a difference of opinion on whether the regulations required Flint to ‘maintain’ corrosion-control treatment when they started serving treated water from the Flint River.”

“MDEQ and (EPA) agreed that after Flint implements corrosion-control treatment, when they switch back to Lake Huron water, they will need to continue the corrosion-control treatment while conducting monitoring to determine if this treatment is optimized with the new Lake Huron water quality.”

“MDEQ and Region 5 agreed that other communities currently implementing corrosion-control treatment and change sources will need to continue to provide corrosion-control treatment and conduct monitoring to determine whether the treatment is optimized with the new source water quality.”

Three weeks later, on Aug. 10, the chief of the EPA region's drinking water office, Thomas Poy, emails officials at the state. He wants to know if Flint has “been approached about starting corrosion control sooner rather than later?”

Another week goes by before the state’s DEQ sends an official letter to Flint recommending treatment.

MDEQ’s Steve Busch says Flint has “until the end of the year to make a recommendation, but they are planning to have the treatment in place by Jan. 2016.”

On Aug. 31, there’s another conference call between EPA and Michigan’s DEQ.

They talk about the work of Virginia Tech’s Marc Edwards. Edwards’ tests have shown “serious” levels of lead in city water. The EPA’s Thomas Poy says “the results give further evidence that lead levels in Flint are trending upward.”

The meeting notes state the obvious, that Edwards’ data “is putting added pressure on MDEQ and EPA to ensure that Flint addresses their lack of corrosion-control treatment in an expedited manner” to protect people from lead exposure.

“EPA acknowledged that to delay installation of corrosion control treatment in Flint would likely cause even higher levels of lead over time as Flint’s many lead service lines (about 15,000) are continuously in contact with corrosive water.”

Two days later, EPA’s Poy follows up with DEQ staff, asking if Flint had decided yet if it would implement treatment.

The next day, Sept. 3, Flint makes the decision to treat for corrosion control. It's not expected to cost much, since the feed lines at the water treatment plant are already in place. The city just needs different sized pumps, state officials said in emails.

In the end, Flint, or the state, or both, decided the city would switch back to Detroit's water system instead.

*Marc Edwards shared his FOIA request with Michigan Radio. When contacted about the FOIA, a DEQ spokesman shared the information as well.

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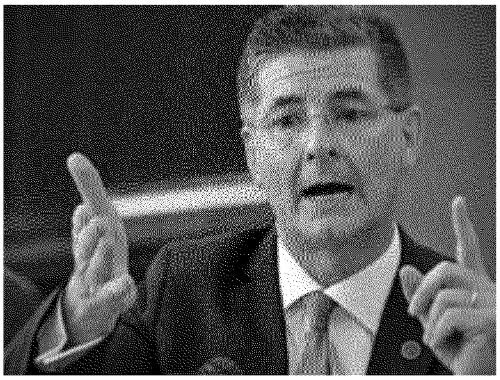
http://www.detroitnews.com/story/news/environment/2015/10/18/deq-mistakes/74198882/

Jim Lynch, The Detroit News 12:12 a.m. EDT October 19, 2015



(Photo: Dale G. Young / The Detroit News)

Michigan's top environmental official acknowledged the state made mistakes in its handling of Flint's long-running water crisis, and said changes would be made, including reassigning a top official responsible for the safety of drinking water.

Dan Wyant, director of Michigan's Department of Environmental Quality, said late Sunday that staff members applied the wrong standards of the Lead and Copper Rule that governs testing and monitoring for drinking water. The result was that proper controls regarding corrosion were not put in place when the city began drawing its water from the Flint River in spring 2014.

"Our actions reflected inexperience, and our public response to criticism was the wrong tone early in this conversation," Wyant said. "But the best we can do with the situation going forward is represented in our present course. ... We will learn from this. We will make necessary changes to see to it that our program becomes a national leader in (lead) protection."

The changes will include the reassignment of Liane Shekter Smith, chief of DEQ's Office of Drinking Water and Municipal Assistance. Gov. Rick Snyder will also introduce an independent, third-party review of the state's handling of Flint's water issues.

Wyant's announcement comes after months of rising concerns among Flint residents over the safety of their drinking water and lead contamination. It also comes after the recent release of inter-agency communications through Freedom of Information Act requests relating to Flint's situation that demonstrate confusion behind the scenes.

State officials seemingly failed to heed repeated warnings from the Environmental Protection Agency as far back as February about potential problems with Flint's water system.

Communications released this week between the federal agency and DEQ also show how an environmental law designed to protect the public allowed the government to utilize questionable water testing practices and move slowly in addressing problems, all while remaining "in compliance" with regulations.

Critics hold the state responsible for the current situation, since Snyder's appointed emergency manager was in charge when the decision was made to begin drawing water from the Flint River in 2014 to save money. State officials have said that move was a "city decision."

Problems began then, including residents saying tap water had strange coloring, smell and taste. In the last month, those concerns were dramatically heightened by studies that show lead levels in some children have risen since the switch from Detroit's water system. Those studies showed that, in some areas, lead levels in children's blood samples have doubled and, in two ZIP codes, tripled.

Many opportunities missed

Emails and letters released by the state this week show many missed opportunities for health and environmental agencies to identify the lead problems months ago.

In February, an EPA official assessing Flint's situation raised several concerns with DEQ, particularly with the way the state conducted testing to ensure water coming into city homes was safe to drink. Such testing is required by the federal Lead and Copper Rule.

"Particulate lead release is a normal part of the corrosion process and it is universal (common) in all systems," wrote Miguel Del Toral, regulations manager for EPA's Region 5, in a Feb. 27 email to two DEQ staffers.

“It’s just that it’s not captured as often by the infrequent (Lead and Copper Rule) sampling. If systems are pre-flushing the tap the night before collecting … samples … (MDEQ still provides these instructions to public water systems) this clears particulate lead out of the plumbing and biases the results low by eliminating the highest lead values. ...

“The particulate lead is being flushed away before collecting compliance samples which provides false assurance to resident about the true lead levels in the water.”

Del Toral would repeat the same concerns in a widely publicized unofficial memo in A pril. But at each step along the way, city and officials responded to testing queries by saying their approach met federal guidelines. As recently as Sept. 3, Flint’s Public Works Director Howard Croft supported the testing methods used.

“We have performed over one hundred and sixty lead tests throughout the city since switching over to the Flint River and remain with the EPA standards,” he wrote. “It is also worth noting … there are different lead testing methods used within the industry and the city remains consistent with the most recent EPA approved testing method which can produce different results than other methods.”

Corrosion control lacking

At the same time Del Toral expressed concerns with Michigan’s testing methods, EPA officials also identified another major potential problem with Flint’s water system: corrosion control. Under the Lead and Copper Rule, Flint was required to provide “optimal corrosion control” — water additives that prevent lead from old plumbing and service lines from leaching into the drinking water.

Two February EPA emails to the DEQ released this week indicated the federal agency was perplexed by what appeared to be a lack of such controls in the Flint system. Responses from Michigan over the next several months indicate no such controls were in place. An April 24 email from one DEQ staffer stated bluntly: “Flint is currently not practicing any corrosion control treatment at the water plant.”

On Sunday, Wyant said staffers applied standards of the Lead and Copper Rule that were designed for populations below 50,000. Flint has a population of roughly 100,000, which triggers a different set of criteria and includes performing two six-month testing programs of local water to determine proper corrosion controls.

“None of the DEQ staff in this division had ever worked on a water source switch for a community of over 50,000 people,” he said. “It’s increasingly clear there was confusion here, but it also is increasingly clear that DEQ staff believed they were using the proper federal protocol and they were not.”

The emails released this week also raise questions about statements made by Wyant earlier this month at a news conference. When asked about what corrosion controls had been used since Flint began drawing its water from the river, Wyant indicated the system had been using lime.

Virginia Tech professor Marc Edwards, whose research on Flint's water had directly challenged many of the state's assertions in recent months, said lime could actually increase the corrosivity of the water interacting with lead plumbing lines. Earlier this week, Wyant addressed his statement about lime in a written response to questions.

"I was relaying what staff and consultants have indicated to me," he said. "Lime softening was used to address the hardness of the water. While this has an impact on pH, testing bore out that more needed to be done."

State, EPA officials disagree

State environmental officials and their EPA counterparts apparently disagreed over the corrosion control issue for much of this year. Once Del Toral's concerns were raised in February, a DEQ official explained why the state had not accounted for corrosion.

Documents released this week include notes from a July meeting between the parties where the state highlighted its reasoning: "MDEQ explained that they did not treat the switch to Flint River water as a 'new system,' but as a new source. It is their understanding that two rounds of six-month testing is still needed to characterize the water quality. They don't know what optimized is until those two rounds of six-month monitoring are completed."

Emails from this spring show MDEQ officials eventually recognized the need for additional corrosion control measures, yet little progress was made on the issue — right up until Friday's announcement that Flint had switched back to getting its water from the Detroit Water and Sewerage Department.

That type of pacing is completely permissible under the Lead and Copper Rule. Busch, of the DEQ, described the schedule laid out by the federal law.

"They now have to complete a study (within 18 months) and are then allowed a period of additional time (2 additional years) to install the selected treatment for fully optimized corrosion control," Busch wrote in July. "We are planning to suggest the city directly submit a treatment process to shorten the time-line to achieve full optimization. This letter is currently being drafted but won't be ready to mail out for another week."

JLynch@detroitnews.com

(313) 222-2034

http://www.mlive.com/news/flint/index.ssf/2015/10/top_state_water_official_repla.html

By: Ron Fonger, October 19

FLINT, MI -- State Department of Environmental Quality Director Dan Wyant is replacing his top municipal drinking water official after acknowledging oversight mistakes with the Flint water system in a news release today, Oct. 19.

Wyant issued a written statement today, saying the state enforced the wrong federal standards for treating Flint River water for more than 17 months, failing to require that the city make it less corrosive.

Researchers and doctors have said the river water, used here since April 2014, was far more corrosive that Lake Huron water that had been purchased for decades from the Detroit Water system.

As the more corrosive water contacted lead and lead solder in Flint's distribution system, more lead leached into tap water here, reasearchers have said, and the blood lead levels in children and infants in some parts of the city tripled after the change.

On Friday, Oct. 16, the city switched back to Detroit-supplied water, using millions of dollars from the state and Charles Stewart Mott Foundation to make the change.

In his statement, Wyant attributed the "mistake" by the DEQ in Flint to "our drinking water program staff."

DEQ Chief Deputy Jim Sygo will immediately assume the role of interim chief of the department's Office of Drinking Water and Municipal Assistance, the statement says, replacing Liane Shekter Smith.

Shekter Smith has been reassigned, DEQ spokesman Brad Wurfel confirmed.

"It recently has become clear that our drinking water program staff made a mistake while working with the city of Flint," Wyant said in a statement. "Simply stated, staff employed a federal protocol they believed was appropriate, and it was not. The water testing steps followed would have been correct for a city less than 50,000 people, but not for a city of nearly 100,000."

"As details of the situation emerge, I am convinced our program staff believed they were doing their job right. As the state recognized there could be a health threat to Flint residents, we took appropriate steps. We are now embarked on an unprecedented effort to safeguard Flint residents and families with near-term, intermediate and long-term actions to protect and educate city residents."

Sygo has been with the DEQ since becoming a water quality specialist in the Saginaw District in 1983. He previously served as interim director of the department.

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http://www.mlive.com/news/flint/index.ssf/2015/10/will_water.html

By: Ron Fonger, October 18

FLINT, MI -- The city's crisis with lead in drinking water is dominating the mayoral election conversation in Flint, and this isn't happy talk.

Both incumbent Mayor Dayne Walling and challenger Karen Weaver agreed that water is the No. 1 issue with voters -- there is no close second.

In less than three weeks, they will find out how that concern and anger translate when voters head to the ballot box on Election Day.

Flint remains in the midst of a public health emergency following spikes in lead levels in tap water and in the blood of infants and children since the decision to change the city's water source from Lake Huron to the Flint River in April 2014.

"The first thing (people) say to me is, 'What are we going to do about the water?' Nine out of 10 times, it's water" voters are talking about, Weaver said. "I believe it's going to continue to be an issue until Nov. 3."

Walling said the water crisis has become the single biggest issue on voters' minds and said he's dealing with it by addressing it head on.

Just weeks ago, state and Flint officials ended their defense of the shift to river water, agreeing to spend an additional $12 million in state and city funding to reconnect the city to Lake Huron water through the Detroit Water and Sewerage Department.

First elected in 2009, Walling has been the city's top elected official since Flint was still buying its drinking water from the Detroit system and still governing itself without state oversight. Walling was re-elected to his second term on the day the state recommended that the governor appoint an emergency financial manager to take over the city in 2011.

The city's previous water arrangement had been in place for decades, but it changed after Gov. Rick Snyder declared the financial emergency in Flint and appointed a series of emergency managers to run the city.

Direct state control of the city ended just five months ago, but Walling is still blamed by some residents for decisions made by emergency managers and how he reacted to them.

Walling said he's never worked harder to fix a problem than he has on Flint water, but he's also trying to tell voters that the decision to use the Flint River as a water source wasn't his.

"I do ask the voters to look carefully at my record and others who have influenced this situation, including the four emergency managers and the state and federal government," he said.

"I raised my concerns internally. At the point that the city was moving forward (with using the river) I did," said Walling. He said the decision was made by former emergency manager Ed Kurtz.

In March 2013, the mayor said, he and members of City Council were given financial projections for joining the Karegnondi Water Authority, which is building a new pipeline that will serve the region with water from Lake Huron. At the time they received those projections, the plan was that the city would continue to buy Lake Huron water from the Detroit water system until the new pipeline construction was finished.

After Detroit canceled its contract with Flint because the city joined KWA, Walling said Kurtz changed the plan without consulting him. The former emergency manager signed an order in June 2013 with an engineering firm to help prepare the city's water treatment plant for processing river water.

The Flint Journal could not reach Kurtz for comment.

Although the mayor said he raised objections behind closed doors, he supported the decision in public, joining former emergency manager Darnell Earley in a celebratory toast of Flint River water and pushing the button at the city water plant that turned off the lake water supply from the Detroit system.

Walling's decision not to speak out against the switch in water sources is a common criticism from Weaver, who said the incumbent's position only changed when city and state officials acknowledged rising lead levels in city water.

"We were being told by Walling the water is OK ... We were told everything was fine for over a year and a half..." Weaver said. "A huge issue underlying all that is the trust has been broken and damaged. He did not speak up and speak out."

For his part, Walling has said Weaver "doesn't understand the full issue and doesn't know what it will take to truly fix the problem."

Inside Michigan Politics Associate Editor Bill Ballenger said there's no doubt water is the issue on voters' minds heading into the final weeks of the mayoral campaign.

"It has just about blotted out the sun," Ballenger said of the attention drinking water has received. "I could easily see Walling losing on this issue."

Ballenger said he's not certain Weaver is in a position to capitalize on it.

"She's almost invisible (and) this is like a gift from heaven," Ballenger said of the challenger, who is making her first run at public office. "It's almost like Walling is running against himself."

Weaver finished second to Walling in the primary election, earning the right to face the incumbent Nov. 3, but her campaign was left with less than $200 in the bank, according to her most recent campaign finance report.

In that August primary, Walling collected 3,530 votes, Weaver 2,364 votes, city Councilman Eric Mays won 1,194 votes and Councilman Wantwaz Davis finished with 763 votes.

Flint's drinking water was an issue in that election -- but not the issue it has become since rising lead levels have become public.

At Freeman Elementary School, testing in recent weeks showed lead levels that were six times higher than the federal threshold.

Four of Flint resident Keith Pemberton's grandchildren are students there.

"I hold (almost) everybody on the City Council, the mayor, the emergency manager, the governor, the (state) Department of Environmental Quality) and the (U.S. Environmental Protection Agency)" responsible for what's happened, said Pemberton. "I hold them all responsible."

Pemberton, a senior citizen from the city's south side, has become politically active because of the water issues.

"If I would have harmed people the way that they did, they would call me a domestic terrorist," he said. "This is the issue that matters to me."

This story has been updated to include a correction of Bill Ballenger's title. He is associate editor of Inside Michigan Politics.

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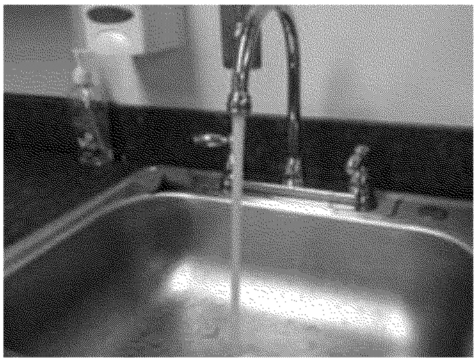
http://www.thetimesherald.com/story/news/2015/10/17/schools-taking-no-chance-face-flint-crisis/74025250/

Syeda Ferguson, Times Herald 5:19 p.m. EDT October 17, 2015


(Photo: Gannett)

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What used to be considered an irrational fear of contaminated drinking water has become a reality in Flint Schools.

Water samples recently taken from three Flint schools had lead levels in excess of federal government standards. The findings have reverberated throughout the state, serving as a wakeup call for Blue Water Area schools.

“Obviously, the health of our children is the No. 1 priority,” Algonac Community Schools superintendent John Strycker said. “Therefore, district officials will meet to discuss a plan of action in handling this situation. What happened in Flint has opened our eyes to possible infrastructure issues here and around the state.”

The concerns at Algonac, along with other Blue Water Area districts is that, even though the waterways of the St. Clair River and Lake Huron might be more pristine than the Flint River, that’s no guarantee of lead-free connections in buildings with older plumbing.

According to best practice guidelines from the Environmental Protection Agency, even if the water meets federal and state standards at the municipal water supply, water pipes and plumbing fixtures can affect the quality of water. School officials and child care providers need to know whether students, teachers and staff consume elevated levels of lead when drinking water in their facility.

Lead in drinking water is primarily from materials and components associated with service lines and facility plumbing. While municipal water suppliers are responsible for providing high quality drinking water, they can't control the materials contained in the plumbing components of older facilities, according to the EPA.

School buildings that were built before the mid-1980s could have lead connections in their plumbing, and testing within school buildings is not something done evenly across the state.

Algonac has three buildings — Pointe Tremble Early Childhood Center, Algonquin

Elementary School and Algonac Jr./Sr. High School — that were built before 1980.

Steve Demick, St. Clair County Health Department environmental health director, said older plumbing is associated with higher risk of lead or other contaminants.

“If in doubt, it is always recommended to test,” Demick said in an email. “The situation in Flint has developed because of many unique circumstances. The water from the Flint River contains more organics which requires more chlorine to treat. The additional chlorine creates more corrosive water that reduces a natural bio-film that separated the water from any lead in the distribution system. Switching back to the less corrosive Detroit water supply will allow for that beneficial bio-film layer to be re-established.”

A handful of local districts are taking precautionary measures in response to concerns over water quality related to the age of buildings versus the water source.

Marysville Public Schools is currently working with Testing Engineers & Consultants, Inc. located in Troy to do an analysis of its oldest building, Washington Elementary School.

Superintendent Shawn Wightman said even though the district gets its water from the city’s water treatment plant, which conducts rigorous water quality tests, there hasn’t been testing within the schools.

“As far as testing in our schools, I am looking into having this done. I don’t want anyone to be exposed to the types of contaminates found in Flint’s schools,” Wightman said in an email.

Marysville is also considering testing a building a year and incorporating that within its asbestos inspections as a cost-saving measure.

In Port Huron, in which all of the buildings pre-date the mid-1980s, the district is not required to test at the building level but could do that at its own expense.

Spokesman Keely Baribeau said the city has a lead and copper test done every three years in which 30 high- risk places in the city are checked, and none has ever been near the 15 micro gram per liter worry mark.

She added that the district’s water source is near the mouth of the St. Clair River, where the water is not nearly as corrosive as the Flint River.

“Flint's situation has led us to take proactive efforts and confirm the safety of our water. It is safe and we are confident in its safety. We will be testing and monitoring the water on an ongoing basis,” Baribeau said.

Districts such as Capac and Yale in St. Clair County operate on wells. While local municipalities regularly test the wells, Capac school buildings have not been tested.

Superintendent Stephen Bigelow said Capac is in the process of obtaining kits from the county health department to test its buildings. The school district's water comes from five wells.

Yale Public Schools superintendent Ken Nicholl said schools that operate on wells are required to regularly test for many items on a scheduled basis. Among these tests include lead, arsenic, heavy metals, nitrates, nitrites as well as bacteria. Schools that receive their water from a municipality do not have to test as the responsibility falls upon the municipality which have very stringent water quality thresholds as well, according to the district. Yale uses two well water facilities at the south end of its district and city water on its main campus.

At East China School District, East China Township tests the water at different school sites on a weekly basis, according to the school district.

Memphis Community Schools has contacted the county health department to test for lead at its buildings on an eight-year cycle. The district has had tests done on the school system in 2001 and 2008 at the completion of bond construction projects.

The district uses city water, which already conducts bi-monthly testing for arsenic, lead, bacteria, and other substances. All tests have been in compliance with appropriate levels, Nancy Thomson, co-superintendent and elementary principal at Memphis Community Schools said.

“We use city water, so we rely on them to do required testing for safe drinking water. Our test would only confirm that their safe drinking water going through the school pipes is still coming out in a safe drinking form,” Thomson said.

Contact Syeda Ferguson at (810) 989-6276 or email her at syeda@thetimesherald.com. Follow her on Twitter @shossainfe

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http://www.washingtontimes.com/news/2015/oct/19/michigan-official-federal-water-rules-not-followed/

By - Associated Press - Monday, October 19, 2015

FLINT, Mich. (AP) - Federal rules governing drinking water weren’t followed properly in Flint, where problems with lead prompted officials to declare a public health emergency, the head of the Michigan Department of Environmental Quality said.

DEQ Director Dan Wyant on Sunday acknowledged mistakes by the state and said “necessary changes” are being made. Officials long maintained that the water met safety standards, but the state recently corroborated findings of elevated lead levels in children and disclosed higher lead amounts in three Flint schools.

“Our actions reflected inexperience, and our public response to criticism was the wrong tone early in this conversation,” Wyant said. “But the best we can do with the situation going forward is represented in our present course. We will learn from this.”

A state official responsible for the safety of drinking water has been reassigned as officials await the outcome of an independent review of the state’s role in Flint’s water problems, The Detroit News and Michigan Radio reported. In a statement issued Monday morning, Wyant said he appointed an interim chief of the department’s Office of Drinking Water and Municipal A ssistance.

Flint reconnected to Detroit’s water system Friday in hopes of resolving the health emergency spurred by a switch to river water that was aimed at saving money but left children with elevated lead levels. Last week, Gov. Rick Snyder approved millions toward the $12 million that returning to Detroit’s system will cost through June.

“We are now embarked on an unprecedented effort to safeguard Flint residents and families with near-term, intermediate and long-term actions to protect and educate city residents,” Wyant said in Monday’s statement.

Flint, a city of about 99,000 people, stopped getting its water from Detroit’s system last year in a cost-cutting move. The Flint River was supposed to be an interim source until the city can join a new system getting water from Lake Huron that’s scheduled to be completed next year.

The Flint River is more corrosive than Detroit’s water from Lake Huron and, because proper controls were not implemented, the river water picked up lead from aging pipes that connect water mains to houses and businesses. If consumed, lead can cause developmental delays and learning disabilities.

On Sunday, Wyant said staffers applied standards of the federal Lead and Copper Rule that were designed to govern testing and monitoring for communities with populations below 50,000 residents. Flint’s larger population triggers a different set of criteria to determine proper corrosion controls.

“None of the DEQ staff in this division had ever worked on a water source switch for a community of over 50,000 people,” he said Sunday. “It’s increasingly clear there was confusion here, but it also is increasingly clear that DEQ staff believed they were using the proper federal protocol and they were not.”

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To: Henry, Timothy[henry.timothy@epa.gov]; Davis, CatherineM[Davis.CatherineM@epa.gov]
Cc: Beckmann, Ronna Erin[beckmann.ronna@epa.gov]
From: Fortin, Denise
Sent: Mon 10/19/2015 5:00:21 PM
Subject: FW: Flint Clips for Oct. 19

FYI

Denise Fortin

Congressional Liaison

Office of Regional Administrator

U.S. Environmental Protection Agency

312-886-9859

From: Cassell, Peter
Sent: Monday, October 19, 2015 11:28 AM
To: Kelley, Jeff; Hedman, Susan; Kaplan, Robert; Hyde, Tinka
Cc: Rowan, Anne; Beckmann, Ronna Erin; Harrison, Melissa; Abrams, Dan; Poy, Thomas; Fortin, Denise; Deamer, Eileen; Singer, Joshua; Arcaute, Francisco; Peterson, John; Loop, Travis
Subject: Flint Clips for Oct. 19

FLINT DRINKING WATER CLIPS

US. EPA Region 5 – as prepared by Peter Cassell *(ORA/OEC/PA)* on Oct. 19, 2015.

- State admits Flint did not follow federal rules designed to keep lead out of water (Michigan Radio)
- Michigan DEQ vows changes in Flint water crisis (Detroit News)
- DEQ replaces water official after state acknowledges 'mistake' in Flint (MLive)
- Flint water crisis is tidal wave issue in city's mayoral election (MLive)
- Schools taking no chance in face of Flint crisis (Times Herald)
- Michigan official: Federal water rules not followed in Flint (Washington Times/AP)

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http://michiganradio.org/post/state-admits-flint-did-not-follow-federal-rules-designed-keep-lead-out-water#stream/0

By Lindsey Smith · 12 hours ago

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Credit Steve Carmody / Michigan Radio

The Michigan Department of Environmental Quality says Flint did not follow federal regulations for large water systems when it switched its source for drinking water.

"It's increasingly clear there was confusion here, but it also is increasingly clear that DEQ staff believed they were using the proper federal protocol and they were not," MDEQ Director Dan Wyant said.

Internal emails show staff in the department misinterpreted the federal Lead and Copper Rule applying to larger water systems, which are required to "maintain" corrosion control.

Wyant has removed Liane Shekter Smith as head of the department's Office of Drinking Water and Municipal Assistance. She's been reassigned until a soon to be announced "independent, third party, after-action review" to detail what went wrong before Flint's water problems and why.

There has been some flip-flopping at the state level on whether Flint has in fact implemented corrosion-control treatment, but ultimately, the consensus is that there was none.

When Flint switched its source for tap water from Detroit's system to the Flint River in A pril 2014, the water flowing into the city's pipes and into people's homes was no longer treated to control corrosion. Water from Detroit came pre-treated, but when the city started pumping from the river, it didn't do any kind of corrosion control. This treatment helps keep lead and other metals from corroding from old service lines and pipes in people's homes. Such treatment is required under federal law.

The rules are written by the U.S. Environmental Protection Agency. So far, the agency hasn't given a solid answer to that question: Did Flint violate federal drinking water regulations? One EPA spokesman wrote in an Oct.1 email: “Your inquiry is relatively complex.”

But emails Virgina Tech researcher Marc Edwards obtained under the Freedom of Information Act paint a clearer picture of the federal agency's position.*

On June 10, the EPA and Michigan's Department of Environmental Quality had a conference call. EPA's Miguel Del Toral provided DEQ with a summary of what he found at Flint resident Lee Anne Walters' home. Multiple tests showed Walters' home had extremely high lead levels.

The meeting notes say DEQ's district supervisor, Steve Busch, pointed out that Flint was following federal rules.

But Del Toral noted that the rules were drafted more than 20 years ago. And since then “research and different situations, like Washington D.C., have educated scientists, experts, and regulators that the existing requirements … may not be as protective as previously thought.”

On July 21, the EPA and DEQ had another conference call. Before the call, DEQ's Liane Shekter Smith wrote in an email to the EPA:

“…While we understand your concerns with the overall implementation of the lead and copper rule(s); we think it is appropriate for EPA to indicate in writing (an email would be sufficient) your concurrence that the city is in compliance with the lead and copper rule as implemented in Michigan. This would help distinguish between our goals to address important public health issues separately from the compliance requirements of the actual rule which we believe have been and continue to be met in the city of Flint.”

The meeting notes from this conference call, later that afternoon, are more telling of the federal agency's position.

EPA staff note federal regulations require the state to “review and approve” any changes in corrosion-control treatment when a water system gets a new water source. The feds go on to say that they've talked to staff and attorneys at the agency's headquarters and “believes” that systems “need to ‘maintain’ corrosion control.”

The notes say the EPA agreed to share its legal citations once a written opinion was shared. It doesn't appear that's happened yet.

Then there's a list of "next steps" in the meeting notes from July 21. Here, the state basically agrees that Flint needs to treat to control corrosion as soon as possible. Flint will not be allowed to stop corrosion-control treatment when it switches water sources in 2016. And the state agrees that it will not allow another city water system to switch water sources without corrosion-control treatment, like it allowed Flint to do.

MDEQ "will have discussions with Flint to request that they start corrosion-control treatment as soon as possible."

"MDEQ and (EPA) were in agreement that it is important to get phosphate addition (a form of corrosion-control treatment) going in Flint as soon as possible."

"(EPA) commented that we now have a path forward for Flint despite a difference of opinion on whether the regulations required Flint to 'maintain' corrosion-control treatment when they started serving treated water from the Flint River."

"MDEQ and (EPA) agreed that after Flint implements corrosion-control treatment, when they switch back to Lake Huron water, they will need to continue the corrosion-control treatment while conducting monitoring to determine if this treatment is optimized with the new Lake Huron water quality."

"MDEQ and Region 5 agreed that other communities currently implementing corrosion-control treatment and change sources will need to continue to provide corrosion-control treatment and conduct monitoring to determine whether the treatment is optimized with the new source water quality."

Three weeks later, on Aug. 10, the chief of the EPA region's drinking water office, Thomas Poy, emails officials at the state. He wants to know if Flint has "been approached about starting corrosion control sooner rather than later?"

Another week goes by before the state's DEQ sends an official letter to Flint recommending treatment.

MDEQ's Steve Busch says Flint has "until the end of the year to make a recommendation, but they are planning to have the treatment in place by Jan. 2016."

On Aug. 31, there's another conference call between EPA and Michigan's DEQ.

They talk about the work of Virginia Tech's Marc Edwards. Edwards' tests have shown "serious" levels of lead in city water. The EPA's Thomas Poy says "the results give further evidence that lead levels in Flint are trending upward."

The meeting notes state the obvious, that Edwards' data "is putting added pressure on MDEQ and EPA to ensure that Flint addresses their lack of corrosion-control treatment in an expedited manner" to protect people from lead exposure.

"EPA acknowledged that to delay installation of corrosion control treatment in Flint would likely cause even higher levels of lead over time as Flint's many lead service lines (about 15,000) are continuously in contact with corrosive water."

Two days later, EPA's Poy follows up with DEQ staff, asking if Flint had decided yet if it would implement treatment.

The next day, Sept. 3, Flint makes the decision to treat for corrosion control. It's not expected to cost much, since the feed lines at the water treatment plant are already in place. The city just needs different sized pumps, state officials said in emails.

In the end, Flint, or the state, or both, decided the city would switch back to Detroit's water system instead.

*Marc Edwards shared his FOIA request with Michigan Radio. When contacted about the FOIA, a DEQ spokesman shared the information as well.

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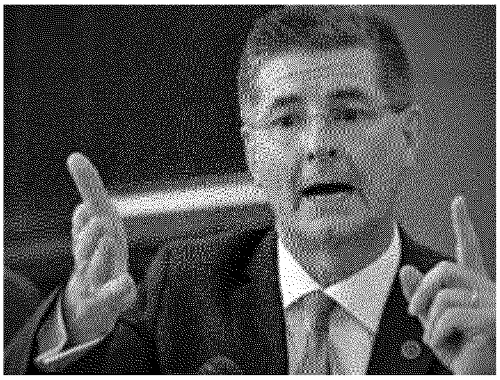
http://www.detroitnews.com/story/news/environment/2015/10/18/deq-mistakes/74198882/

Jim Lynch, The Detroit News 12:12 a.m. EDT October 19, 2015



(Photo: Dale G. Young / The Detroit News)

Michigan's top environmental official acknowledged the state made mistakes in its handling of Flint's long-running water crisis, and said changes would be made, including reassigning a top official responsible for the safety of drinking water.

Dan Wyant, director of Michigan's Department of Environmental Quality, said late Sunday that staff members applied the wrong standards of the Lead and Copper Rule that governs testing and monitoring for drinking water. The result was that proper controls regarding corrosion were not put in place when the city began drawing its water from the Flint River in spring 2014.

"Our actions reflected inexperience, and our public response to criticism was the wrong tone early in this conversation," Wyant said. "But the best we can do with the situation going forward is represented in our present course. ... We will learn from this. We will make necessary changes to see to it that our program becomes a national leader in (lead) protection."

The changes will include the reassignment of Liane Shekter Smith, chief of DEQ's Office of Drinking Water and Municipal Assistance. Gov. Rick Snyder will also introduce an independent, third-party review of the state's handling of Flint's water issues.

Wyant's announcement comes after months of rising concerns among Flint residents over the safety of their drinking water and lead contamination. It also comes after the recent release of inter-agency communications through Freedom of Information Act requests relating to Flint's situation that demonstrate confusion behind the scenes.

State officials seemingly failed to heed repeated warnings from the Environmental Protection Agency as far back as February about potential problems with Flint's water system.

Communications released this week between the federal agency and DEQ also show how an environmental law designed to protect the public allowed the government to utilize questionable water testing practices and move slowly in addressing problems, all while remaining "in compliance" with regulations.

Critics hold the state responsible for the current situation, since Snyder's appointed emergency manager was in charge when the decision was made to begin drawing water from the Flint River in 2014 to save money. State officials have said that move was a "city decision."

Problems began then, including residents saying tap water had strange coloring, smell and taste. In the last month, those concerns were dramatically heightened by studies that show lead levels in some children have risen since the switch from Detroit's water system. Those studies showed that, in some areas, lead levels in children's blood samples have doubled and, in two ZIP codes, tripled.

Many opportunities missed

Emails and letters released by the state this week show many missed opportunities for health and environmental agencies to identify the lead problems months ago.

In February, an EPA official assessing Flint's situation raised several concerns with DEQ, particularly with the way the state conducted testing to ensure water coming into city homes was safe to drink. Such testing is required by the federal Lead and Copper Rule.

"Particulate lead release is a normal part of the corrosion process and it is universal (common) in all systems," wrote Miguel Del Toral, regulations manager for EPA's Region 5, in a Feb. 27 email to two DEQ staffers.

"It's just that it's not captured as often by the infrequent (Lead and Copper Rule) sampling. If systems are pre-flushing the tap the night before collecting … samples … (MDEQ still provides these instructions to public water systems) this clears particulate lead out of the plumbing and biases the results low by eliminating the highest lead values. ...

"The particulate lead is being flushed away before collecting compliance samples which provides false assurance to resident about the true lead levels in the water."

Del Toral would repeat the same concerns in a widely publicized unofficial memo in A pril. But at each step along the way, city and officials responded to testing queries by saying their approach met federal guidelines. As recently as Sept. 3, Flint's Public Works Director Howard Croft supported the testing methods used.

"We have performed over one hundred and sixty lead tests throughout the city since switching over to the Flint River and remain with the EPA standards," he wrote. "It is also worth noting … there are different lead testing methods used within the industry and the city remains consistent with the most recent EPA approved testing method which can produce different results than other methods."

Corrosion control lacking

At the same time Del Toral expressed concerns with Michigan's testing methods, EPA officials also identified another major potential problem with Flint's water system: corrosion control. Under the Lead and Copper Rule, Flint was required to provide "optimal corrosion control" — water additives that prevent lead from old plumbing and service lines from leaching into the drinking water.

Two February EPA emails to the DEQ released this week indicated the federal agency was perplexed by what appeared to be a lack of such controls in the Flint system. Responses from Michigan over the next several months indicate no such controls were in place. An April 24 email from one DEQ staffer stated bluntly: "Flint is currently not practicing any corrosion control treatment at the water plant."

On Sunday, Wyant said staffers applied standards of the Lead and Copper Rule that were designed for populations below 50,000. Flint has a population of roughly 100,000, which triggers a different set of criteria and includes performing two six-month testing programs of local water to determine proper corrosion controls.

“None of the DEQ staff in this division had ever worked on a water source switch for a community of over 50,000 people,” he said. “It’s increasingly clear there was confusion here, but it also is increasingly clear that DEQ staff believed they were using the proper federal protocol and they were not.”

The emails released this week also raise questions about statements made by Wyant earlier this month at a news conference. When asked about what corrosion controls had been used since Flint began drawing its water from the river, Wyant indicated the system had been using lime.

Virginia Tech professor Marc Edwards, whose research on Flint’s water had directly challenged many of the state’s assertions in recent months, said lime could actually increase the corrosivity of the water interacting with lead plumbing lines. Earlier this week, Wyant addressed his statement about lime in a written response to questions.

“I was relaying what staff and consultants have indicated to me,” he said. “Lime softening was used to address the hardness of the water. While this has an impact on pH, testing bore out that more needed to be done.”

State, EPA officials disagree

State environmental officials and their EPA counterparts apparently disagreed over the corrosion control issue for much of this year. Once Del Toral’s concerns were raised in February, a DEQ official explained why the state had not accounted for corrosion.

Documents released this week include notes from a July meeting between the parties where the state highlighted its reasoning: “MDEQ explained that they did not treat the switch to Flint River water as a ‘new system,’ but as a new source. It is their understanding that two rounds of six-month testing is still needed to characterize the water quality. They don’t know what optimized is until those two rounds of six-month monitoring are completed.”

Emails from this spring show MDEQ officials eventually recognized the need for additional corrosion control measures, yet little progress was made on the issue — right up until Friday’s announcement that Flint had switched back to getting its water from the Detroit Water and Sewerage Department.

That type of pacing is completely permissible under the Lead and Copper Rule. Busch, of the DEQ, described the schedule laid out by the federal law.

“They now have to complete a study (within 18 months) and are then allowed a period of additional time (2 additional years) to install the selected treatment for fully optimized corrosion control,” Busch wrote in July. “We are planning to suggest the city directly submit a treatment process to shorten the time-line to achieve full optimization. This letter is currently being drafted but won't be ready to mail out for another week."

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http://www.mlive.com/news/flint/index.ssf/2015/10/top_state_water_official_repla.html

By: Ron Fonger, October 19

FLINT, MI -- State Department of Environmental Quality Director Dan Wyant is replacing his top municipal drinking water official after acknowledging oversight mistakes with the Flint water system in a news release today, Oct. 19.

Wyant issued a written statement today, saying the state enforced the wrong federal standards for treating Flint River water for more than 17 months, failing to require that the city make it less corrosive.

Researchers and doctors have said the river water, used here since April 2014, was far more corrosive that Lake Huron water that had been purchased for decades from the Detroit Water system.

As the more corrosive water contacted lead and lead solder in Flint's distribution system, more lead leached into tap water here, reasearchers have said, and the blood lead levels in children and infants in some parts of the city tripled after the change.

On Friday, Oct. 16, the city switched back to Detroit-supplied water, using millions of dollars from the state and Charles Stewart Mott Foundation to make the change.

In his statement, Wyant attributed the "mistake" by the DEQ in Flint to "our drinking water program staff."

DEQ Chief Deputy Jim Sygo will immediately assume the role of interim chief of the department's Office of Drinking Water and Municipal Assistance, the statement says, replacing Liane Shekter Smith.

Shekter Smith has been reassigned, DEQ spokesman Brad Wurfel confirmed.

"It recently has become clear that our drinking water program staff made a mistake while working with the city of Flint," Wyant said in a statement. "Simply stated, staff employed a federal protocol they believed was appropriate, and it was not. The water testing steps followed would have been correct for a city less than 50,000 people, but not for a city of nearly 100,000."

"As details of the situation emerge, I am convinced our program staff believed they were doing their job right. As the state recognized there could be a health threat to Flint residents, we took appropriate steps. We are now embarked on an unprecedented effort to safeguard Flint residents and families with near-term, intermediate and long-term actions to protect and educate city residents."

Sygo has been with the DEQ since becoming a water quality specialist in the Saginaw District in 1983. He previously served as interim director of the department.

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http://www.mlive.com/news/flint/index.ssf/2015/10/will_water.html

By: Ron Fonger, October 18

FLINT, MI -- The city's crisis with lead in drinking water is dominating the mayoral election conversation in Flint, and this isn't happy talk.

Both incumbent Mayor Dayne Walling and challenger Karen Weaver agreed that water is the No. 1 issue with voters -- there is no close second.

In less than three weeks, they will find out how that concern and anger translate when voters head to the ballot box on Election Day.

Flint remains in the midst of a public health emergency following spikes in lead levels in tap water and in the blood of infants and children since the decision to change the city's water source from Lake Huron to the Flint River in April 2014.

"The first thing (people) say to me is, 'What are we going to do about the water?' Nine out of 10 times, it's water" voters are talking about, Weaver said. "I believe it's going to continue to be an issue until Nov. 3."

Walling said the water crisis has become the single biggest issue on voters' minds and said he's dealing with it by addressing it head on.

Just weeks ago, state and Flint officials ended their defense of the shift to river water, agreeing to spend an additional $12 million in state and city funding to reconnect the city to Lake Huron water through the Detroit Water and Sewerage Department.

First elected in 2009, Walling has been the city's top elected official since Flint was still buying its drinking water from the Detroit system and still governing itself without state oversight. Walling was re-elected to his second term on the day the state recommended that the governor appoint an emergency financial manager to take over the city in 2011.

The city's previous water arrangement had been in place for decades, but it changed after Gov. Rick Snyder declared the financial emergency in Flint and appointed a series of emergency managers to run the city.

Direct state control of the city ended just five months ago, but Walling is still blamed by some residents for decisions made by emergency managers and how he reacted to them.

Walling said he's never worked harder to fix a problem than he has on Flint water, but he's also trying to tell voters that the decision to use the Flint River as a water source wasn't his.

"I do ask the voters to look carefully at my record and others who have influenced this situation, including the four emergency managers and the state and federal government," he said.

"I raised my concerns internally. At the point that the city was moving forward (with using the river) I did," said Walling. He said the decision was made by former emergency manager Ed Kurtz.

In March 2013, the mayor said, he and members of City Council were given financial projections for joining the Karegnondi Water Authority, which is building a new pipeline that will serve the region with water from Lake Huron. At the time they received those projections, the plan was that the city would continue to buy Lake Huron water from the Detroit water system until the new pipeline construction was finished.

After Detroit canceled its contract with Flint because the city joined KWA, Walling said Kurtz changed the plan without consulting him. The former emergency manager signed an order in June 2013 with an engineering firm to help prepare the city's water treatment plant for processing river water.

The Flint Journal could not reach Kurtz for comment.

Although the mayor said he raised objections behind closed doors, he supported the decision in public, joining former emergency manager Darnell Earley in a celebratory toast of Flint River water and pushing the button at the city water plant that turned off the lake water supply from the Detroit system.

Walling's decision not to speak out against the switch in water sources is a common criticism from Weaver, who said the incumbent's position only changed when city and state officials acknowledged rising lead levels in city water.

"We were being told by Walling the water is OK ... We were told everything was fine for over a year and a half..." Weaver said. "A huge issue underlying all that is the trust has been broken and damaged. He did not speak up and speak out."

For his part, Walling has said Weaver "doesn't understand the full issue and doesn't know what it will take to truly fix the problem."

Inside Michigan Politics Associate Editor Bill Ballenger said there's no doubt water is the issue on voters' minds heading into the final weeks of the mayoral campaign.

"It has just about blotted out the sun," Ballenger said of the attention drinking water has received. "I could easily see Walling losing on this issue."

Ballenger said he's not certain Weaver is in a position to capitalize on it.

"She's almost invisible (and) this is like a gift from heaven," Ballenger said of the challenger, who is making her first run at public office. "It's almost like Walling is running against himself."

Weaver finished second to Walling in the primary election, earning the right to face the incumbent Nov. 3, but her campaign was left with less than $200 in the bank, according to her most recent campaign finance report.

In that August primary, Walling collected 3,530 votes, Weaver 2,364 votes, city Councilman Eric Mays won 1,194 votes and Councilman Wantwaz Davis finished with 763 votes.

Flint's drinking water was an issue in that election -- but not the issue it has become since rising lead levels have become public.

At Freeman Elementary School, testing in recent weeks showed lead levels that were six times higher than the federal threshold.

Four of Flint resident Keith Pemberton's grandchildren are students there.

"I hold (almost) everybody on the City Council, the mayor, the emergency manager, the governor, the (state) Department of Environmental Quality) and the (U.S. Environmental Protection Agency)" responsible for what's happened, said Pemberton. "I hold them all responsible."

Pemberton, a senior citizen from the city's south side, has become politically active because of the water issues.

"If I would have harmed people the way that they did, they would call me a domestic terrorist," he said. "This is the issue that matters to me."

This story has been updated to include a correction of Bill Ballenger's title. He is associate editor of Inside Michigan Politics.

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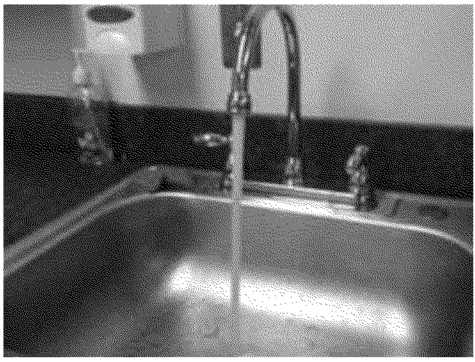
http://www.thetimesherald.com/story/news/2015/10/17/schools-taking-no-chance-face-flint-crisis/74025250/

Syeda Ferguson, Times Herald 5:19 p.m. EDT October 17, 2015


(Photo: Gannett)

2 CONNECT 3 TWEETLINKEDINCOMMENTEMAILMORE

What used to be considered an irrational fear of contaminated drinking water has become a reality in Flint Schools.

Water samples recently taken from three Flint schools had lead levels in excess of federal government standards. The findings have reverberated throughout the state, serving as a wakeup call for Blue Water Area schools.

“Obviously, the health of our children is the No. 1 priority,” Algonac Community Schools superintendent John Strycker said. “Therefore, district officials will meet to discuss a plan of action in handling this situation. What happened in Flint has opened our eyes to possible infrastructure issues here and around the state.”

The concerns at Algonac, along with other Blue Water Area districts is that, even though the waterways of the St. Clair River and Lake Huron might be more pristine than the Flint River, that’s no guarantee of lead-free connections in buildings with older plumbing.

According to best practice guidelines from the Environmental Protection Agency, even if the water meets federal and state standards at the municipal water supply, water pipes and plumbing fixtures can affect the quality of water. School officials and child care providers need to know whether students, teachers and staff consume elevated levels of lead when drinking water in their facility.

Lead in drinking water is primarily from materials and components associated with service lines and facility plumbing. While municipal water suppliers are responsible for providing high quality drinking water, they can't control the materials contained in the plumbing components of older facilities, according to the EPA.

School buildings that were built before the mid-1980s could have lead connections in their plumbing, and testing within school buildings is not something done evenly across the state.

Algonac has three buildings — Pointe Tremble Early Childhood Center, Algonquin Elementary School and Algonac Jr./Sr. High School — that were built before 1980.

Steve Demick, St. Clair County Health Department environmental health director, said older plumbing is associated with higher risk of lead or other contaminants.

“If in doubt, it is always recommended to test,” Demick said in an email. “The situation in Flint has developed because of many unique circumstances. The water from the Flint River contains more organics which requires more chlorine to treat. The additional chlorine creates more corrosive water that reduces a natural bio-film that separated the water from any lead in the distribution system. Switching back to the less corrosive Detroit water supply will allow for that beneficial bio-film layer to be re-established.”

A handful of local districts are taking precautionary measures in response to concerns over water quality related to the age of buildings versus the water source.

Marysville Public Schools is currently working with Testing Engineers & Consultants, Inc. located in Troy to do an analysis of its oldest building, Washington Elementary School.

Superintendent Shawn Wightman said even though the district gets its water from the city’s water treatment plant, which conducts rigorous water quality tests, there hasn’t been testing within the schools.

“As far as testing in our schools, I am looking into having this done. I don’t want anyone to be exposed to the types of contaminates found in Flint’s schools,” Wightman said in an email.

Marysville is also considering testing a building a year and incorporating that within its asbestos inspections as a cost-saving measure.

In Port Huron, in which all of the buildings pre-date the mid-1980s, the district is not required to test at the building level but could do that at its own expense.

Spokesman Keely Baribeau said the city has a lead and copper test done every three years in which 30 high- risk places in the city are checked, and none has ever been near the 15 micro gram per liter worry mark.

She added that the district's water source is near the mouth of the St. Clair River, where the water is not nearly as corrosive as the Flint River.

"Flint's situation has led us to take proactive efforts and confirm the safety of our water. It is safe and we are confident in its safety. We will be testing and monitoring the water on an ongoing basis," Baribeau said.

Districts such as Capac and Yale in St. Clair County operate on wells. While local municipalities regularly test the wells, Capac school buildings have not been tested. Superintendent Stephen Bigelow said Capac is in the process of obtaining kits from the county health department to test its buildings. The school district's water comes from five wells.

Yale Public Schools superintendent Ken Nicholl said schools that operate on wells are required to regularly test for many items on a scheduled basis. Among these tests include lead, arsenic, heavy metals, nitrates, nitrites as well as bacteria. Schools that receive their water from a municipality do not have to test as the responsibility falls upon the municipality which have very stringent water quality thresholds as well, according to the district. Yale uses two well water facilities at the south end of its district and city water on its main campus.

At East China School District, East China Township tests the water at different school sites on a weekly basis, according to the school district.

Memphis Community Schools has contacted the county health department to test for lead at its buildings on an eight-year cycle. The district has had tests done on the school system in 2001 and 2008 at the completion of bond construction projects.

The district uses city water, which already conducts bi-monthly testing for arsenic, lead, bacteria, and other substances. All tests have been in compliance with appropriate levels, Nancy Thomson, co-superintendent and elementary principal at Memphis Community Schools said.

"We use city water, so we rely on them to do required testing for safe drinking water. Our test would only confirm that their safe drinking water going through the school pipes is still coming out in a safe drinking form," Thomson said.

Contact Syeda Ferguson at (810) 989-6276 or email her at syeda@thetimesherald.com. Follow her on Twitter @shossainfe

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http://www.washingtontimes.com/news/2015/oct/19/michigan-official-federal-water-rules-not-followed/

By - Associated Press - Monday, October 19, 2015

FLINT, Mich. (AP) - Federal rules governing drinking water weren't followed properly in Flint, where problems with lead prompted officials to declare a public health emergency, the head of the Michigan Department of Environmental Quality said.

DEQ Director Dan Wyant on Sunday acknowledged mistakes by the state and said "necessary changes" are being made. Officials long maintained that the water met safety standards, but the state recently corroborated findings of elevated lead levels in children and disclosed higher lead amounts in three Flint schools.

"Our actions reflected inexperience, and our public response to criticism was the wrong tone early in this conversation," Wyant said. "But the best we can do with the situation going forward is represented in our present course. We will learn from this."

A state official responsible for the safety of drinking water has been reassigned as officials await the outcome of an independent review of the state's role in Flint's water problems, The Detroit News and Michigan Radio reported. In a statement issued Monday morning, Wyant said he appointed an interim chief of the department's Office of Drinking Water and Municipal A ssistance.

Flint reconnected to Detroit's water system Friday in hopes of resolving the health emergency spurred by a switch to river water that was aimed at saving money but left children with elevated lead levels. Last week, Gov. Rick Snyder approved millions toward the $12 million that returning to Detroit's system will cost through June.

"We are now embarked on an unprecedented effort to safeguard Flint residents and families with near-term, intermediate and long-term actions to protect and educate city residents," Wyant said in Monday's statement.

Flint, a city of about 99,000 people, stopped getting its water from Detroit's system last year in a cost-cutting move. The Flint River was supposed to be an interim source until the city can join a new system getting water from Lake Huron that's scheduled to be completed next year.

The Flint River is more corrosive than Detroit's water from Lake Huron and, because proper controls were not implemented, the river water picked up lead from aging pipes that connect water mains to houses and businesses. If consumed, lead can cause developmental delays and learning disabilities.

On Sunday, Wyant said staffers applied standards of the federal Lead and Copper Rule that were designed to govern testing and monitoring for communities with populations below 50,000 residents. Flint's larger population triggers a different set of criteria to determine proper corrosion controls.

"None of the DEQ staff in this division had ever worked on a water source switch for a community of over 50,000 people," he said Sunday. "It's increasingly clear there was confusion here, but it also is increasingly clear that DEQ staff believed they were using the proper federal protocol and they were not."

###

To: Deltoral, Miguel[deltoral.miguel@epa.gov]; Poy, Thomas[poy.thomas@epa.gov]; Schock, Michael[Schock.Michael@epa.gov]; Kempic, Jeffrey[Kempic.Jeffrey@epa.gov]; Henry, Timothy[henry.timothy@epa.gov]
From: Lytle, Darren
Sent: Mon 10/19/2015 5:05:30 PM
Subject: Fwd: Flint WTP PH2 SEG4 - Corrosion Control

Task group members,

Mike and I got this MDEQ request late last Friday with a very short deadline of this morning. We worked on it over the weekend, put together the attached response and after running very quickly by our management and Jeff Kempic, sent it back. Wanted to make sure everyone saw it. It would have been preferable that more time was provided and we could all have provided comment. Sorry, but we can discuss at our first meeting.

Darren

Sent from my iPhone

Begin forwarded message:

> **From:** "Lytle, Darren" <Lytle.Darren@epa.gov>
> **Date:** October 19, 2015 at 12:05:18 PM EDT
> **To:** "Prysby, Mike (DEQ)" <PRYSBYM@michigan.gov>
> **Cc:** "Schock, Michael" <Schock.Michael@epa.gov>, "Kempic, Jeffrey" <Kempic.Jeffrey@epa.gov>, "Busch, Stephen (DEQ)" <BUSCHS@michigan.gov>
> **Subject: RE: Flint WTP PH2 SEG4 - Corrosion Control**
>
> Mike,
>
> Thank-you for giving us the opportunity to review the city of Flint's corrosion control plan.
>
> We believe it is necessary that Flint boosts orthophosphate dosage. Given that the distribution system has not received orthophosphate in over a year, we expect that orthophosphate will need to be boosted to 1) meet the demand of the distribution system, 2) reach the service lines and other lead-containing components in premise plumbing, and 3) accelerate lead reduction at the consumer's taps. Orthophosphate should preferably be added in the same form as the Detroit source which is phosphoric acid from our understanding. This is the proposed case here, however, a simple test should be performed to make sure that the pH is not impacted in a significant way at the desired target dose.

We have not been able to obtain comprehensive water quality data for the finished water characteristics of the Detroit water that will be fed to Flint, to assess ranges of major chemical characteristic fluctuations. However, based upon the email trail, Detroit water entering the Flint system appears to only contain around 0.4 PO4/L. This concentration range is entirely too low compared to that needed in studies presented and published in the last 20+ years that have focused on lead released directly from lead pipes, and the solubility of the most likely lead orthophosphate pipes scales. We also strongly feel that targeted dose of 0.8 mg PO4/L is also too low, for the very same reason. We would be glad to share with you numerous standard corrosion control and treatment reference works, best practices guides and published results from US and international lead corrosion control field and pilot studies. Secondly, the basis for that target (other communities using Lake Huron source use the same dose) is not scientifically derived nor does it consider water quality and the current state of Flint's distribution system. We have reviewed the original Detroit corrosion study and have seen some of the LCR monitoring data, and besides the fact that it did not directly pertain to this water source, few dosages were tested in the cited 1994 pipe loop study, and the higher dosage than the one implemented in the field currently was more effective. Based on the limited amount of data on the quality of Detroit water, what we know about the history of Detroit corrosion control, we think an orthophosphate residual of 3 to 4 mg PO4/L should be the minimum starting test target residual for pipe passivation. It is likely that, at least initially a higher dosage will be necessary to reach the far ends of the distribution system and sufficiently reduce lead solubility and release from all lead sources. To allow flexibility, we feel the design of the chemical feed and storage systems should be able to consistently deliver a maximum dose of 5 to 6 mg PO4/L, if substantial orthophosphate loss is observed, if the starting dose is set for the desired residual level of 3 to 4 mg/L as PO4. We suggest that jar tests be performed in advance of orthophosphate addition to Detroit water to evaluate the impact of orthophosphate dose on turbidity that could result from interactions between orthophosphate and background Detroit water quality parameters (e.g., aluminum, calcium, etc.).

We want to stress that immediately shifting to Detroit water and adding orthophosphate will not necessarily translate to immediate improvements. Furthermore, this is a change, albeit a return to past conditions. Nonetheless, a period of system upset should be anticipated. The need for a communication strategy and a distribution system plan are critical.

Lastly, we see no mention of a water quality monitoring program. Two programs need to be put in place immediately (before return to Detroit water) to 1) identify lead sources, 2) assess treatment effectiveness against lead release from all of the simultaneously operating mechanisms (solubility, particulate release, galvanic corrosion), and 3) assess orthophosphate levels and stability of water quality in the distribution system.

There are multiple sources of lead in the Flint distribution system to the consumers' taps, such as: pipes; leaded brass; leaded solder; accumulations on old galvanized steel pipes; possibly accumulated on copper or some plastic pipes. It is critical that the fate of orthophosphate in the distribution system is understood, and how effective it is against each type of lead source, so dosing adjustment can be properly made. For this purpose, we recommend that a number of residences throughout Flint that meet the following plumbing criteria, be identified for an assessment of the contribution lead from the different potential service line and interior plumbing sources, through detailed mapping of plumbing materials, lengths, sizes, and location and type of inline devices and faucets using profile sampling. For confidence in interpretation, probably at least 5 sites from each of the configurations will be necessary. The configurations we would estimate to be most important (but should be changed or added to if local construction practice indicates it's necessary): Lead service line, galvanized steel interior plumbing; lead service line, copper with leaded solder joints; lead service line, plastic interior plumbing. It is also possible that interior plumbing may differ from the material used for the customer-side service line segment. We would be glad to discuss the specifics of this sampling effort.

For the purpose of assessing stability of water quality in the distribution system and to inform on orthophosphate residual adjustment, we suggest that 8 to 10 locations in the distribution system be selected to measure pH, alkalinity, orthophosphate, turbidity and iron on a weekly basis. These could be collected from TCR sampling locations, or other readily-accessible buildings, should be located at a distribution of locations in the distribution system and should be collected after a flush sufficiently long to assure that "fresh" distribution system water is being measured. Research has shown that over time, orthophosphate can reduce disinfectant demand associated with corroding metallic distribution system materials. These measurements need to be performed in the field and can simply be done with a portable HACH test kit or spectrophotometer.

A lead sampling plan needs to be in place to access the effectiveness of water change and treatment boost. LCR monitoring sites with confirmed lead service lines can be in the sampling pool. Sampling should consist of a 1 liter first draw sample (LCR sample without 5 minute pre-flush), followed by an additional flushed sample or two depending on profile sample results which is intended to capture major lead source(s). The specific details of this effort need to be worked out by the technical committee as soon as possible. We would gladly work with Flint on establishing a water sampling program to identity and verify lead service line sites. The plan and initial sampling effort should be performed before the switch so that one baseline sample set is collected.

Lastly, our strength does not fall under full-scale pump and chemical feed delivery systems.

We would only say that the systems need to be scaled-up in size to accommodate our suggested dosing needs. Also, there is the some discussion about diverting water to the Dort reservoir and an associated orthophosphate feed system. We are not familiar with the reservoir but are wondering if it is an open reservoir?

Of course this is a lot of information to share and we would gladly be available to discuss the technical and scientific basis for our suggestions.

Let us know if you have any questions and thanks again,

Darren and Mike

Darren A. Lytle, Ph.D., P.E.

Branch Chief (Acting)

U.S. Environmental Protection Agency

26 West Martin Luther King Dr.

Cincinnati, Ohio 45268

Phone: (513) 569-7432

Fax: (513) 487-2543

email: lytle.darren@epa.gov

From: Prysby, Mike (DEQ) [mailto:PRYSBYM@michigan.gov]
Sent: Friday, October 16, 2015 1:32 PM
To: Lytle, Darren <Lytle.Darren@epa.gov>; Schock, Michael <Schock.Michael@epa.gov>
Cc: Busch, Stephen (DEQ) <BUSCHS@michigan.gov>
Subject: FW: Flint WTP PH2 SEG4 - Corrosion Control

Darren, Michael

We have received Flint's corrosion control proposal from their consultant. If you have comments, please provide them to me by Monday morning.

Michael Prysby, P.E.

District Engineer

Office of Drinking Water and Municipal Assistance

517 290-8817

From: Matta, Samir [mailto:SFMatta@lan-inc.com]
Sent: Friday, October 16, 2015 12:02 AM
To: Prysby, Mike (DEQ)
Subject: Flint WTP PH2 SEG4 - Corrosion Control

Hi Mike,

Please see attached plans for the Corrosion Control Plan for the City of Flint. I will have the official submittal package to you tomorrow afternoon after I get Brent or Mike's signature on the permit application. I will call you when I get back in Lansing to drop the package. Is three sets of full size plans adequate? Would you like some half size plans? Let me know.

Basis of Design

Given that Flint will require lead and copper corrosion control and given that Detroit utilizes orthophosphate for their corrosion control methodology, and that Flint will be receiving Detroit water for the immediate future, orthophosphate is the appropriate corrosion control methodology for Flint. A dosage of 0.8 mg/l as PO_4 has been recommended for the Detroit water. Numerous utilities utilizing Lake Michigan water have a target dosage of 0.9 mg/l as PO_4. Therefore, a target dosage in the range of 0.8 to 0.9 mg/l appears appropriate.

It is expected that, at least initially, there will be a significant PO_4 demand in the system. This will require a significantly higher dosage until this demand is satisfied and the target residual can be maintained. We are therefore designing for capability of a maximum dosage of 1.5 mg/l.

The arriving Detroit water will likely have some residual PO_4 when it arrives at Flint. It has been reported that this residual will be approximately 0.4 mg/l. The system must therefore be capable of a minimum dosage of 0.4 mg/l.

Based upon the usage of 75% Phosphoric Acid and a flow range of 4 MGD to 25 MGD, with an average day of 16 MGD, the expected feed rate will be 1.35 to 32 gpd. Average Phosphoric Acid feed is expected to be 10.8 gpd, requiring 30 days storage of 325 gal.

Orthophosphate will need to be applied at two locations. Detroit water will enter the Flint system at Control Station CS2, and supplementary phosphate will be applied there. However, on occasion some incoming water may need to be diverted to the Dort Reservoir, bypassing CS2. This water would then be introduced to the system through High Service Pump Station PS4 and phosphate would be introduced at this location.

Please let me know if the information is adequate or you require additional information.

Thanks.

Samir F. Matta, PE

Team Leader

Lockwood, Andrews
& Newnam, Inc.
A LEO A DALY COMPANY

1311 South Linden Road, Suite B • Flint, MI 48532

2121 University Park Dr, Suite 100 • Okemos, MI 48864-6901

D 517.819.2367 **C** 517.819.2367

www.lan-inc.com • sfmatta@lan-inc.com

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To: Kaplan, Robert[kaplan.robert@epa.gov]
From: Hedman, Susan
Sent: Mon 10/19/2015 5:28:38 PM
Subject: Flint Safe Drinking Water Task Force

FLINT SAFE DRINKING WATER TASK FORCE

US EPA is committed to working with our state and local partners to ensure a safe and reliable water supply for the residents of Flint, Michigan. To achieve this, the EPA Region 5 Administrator will establish a Task Force to provide the Agency's technical expertise through regular, but no less than weekly, conversations with designated officials* from MDEQ and the City of Flint to assist with developing and implementing a plan to secure water quality, including measures to optimize corrosion control. Task Force members will be available to consult with MDEQ and the City of Flint on site in Flint as needed. The Task Force will also coordinate as necessary with federal, state and local public health agencies to assist with protection of public health.

Specifically, the Task Force will provide technical assistance to the MDEQ and the City of Flint to reconnect the Flint system to a new source of drinking water (to be supplied by the Great Lakes Water Authority) and to optimize corrosion control for the Flint system, starting in October 2015. The Task Force will also provide technical assistance to the MDEQ and the City of Flint, as needed, in advance of and following connection of the Flint water system to a new source of drinking water (to be supplied by the Karegnondi Water Authority) and to optimize corrosion control for the Flint system, starting in 2016.

Composition of the Task Force

Region 5 Deputy Administrator Bob Kaplan, Chair

Office of Research and Development Scientist Darren Lytle

Office of Research and Development Scientist Michael Schock

Office of Water Lead and Copper Rule Technical Lead Jeff Kempic

Region 5 Water Division Deputy Director Tim Henry

Region 5 Water Division Drinking Water Section Chief Tom Poy

---

* The Governor will be asked to designate the MDEQ official; The Mayor will be asked to designate the Flint official.

Sent from my iPhone

To: Kaplan, Robert[kaplan.robert@epa.gov]
From: Poy, Thomas
Sent: Mon 10/19/2015 7:55:26 PM
Subject: Fwd: Flint WTP PH2 SEG4 - Corrosion Control

Tom Poy
Chief, Ground and Drinking Water Branch
USEPA - Region 5
(312) 886-5991

Begin forwarded message:

From: "Lytle, Darren" <Lytle.Darren@epa.gov>
Date: October 19, 2015 at 12:05:30 PM CDT
To: "Deltoral, Miguel" <deltoral.miguel@epa.gov>, "Poy, Thomas" <poy.thomas@epa.gov>, "Schock, Michael" <Schock.Michael@epa.gov>, "Kempic, Jeffrey" <Kempic.Jeffrey@epa.gov>, "Henry, Timothy" <henry.timothy@epa.gov>
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Of course this is a lot of information to share and we would gladly be available to discuss the technical and scientific basis for our suggestions.

Let us know if you have any questions and thanks again,

Darren and Mike

Darren A. Lytle, Ph.D., P.E.

Branch Chief (Acting)

U.S. Environmental Protection Agency

26 West Martin Luther King Dr.

Cincinnati, Ohio 45268

Phone: (513) 569-7432

Fax: (513) 487-2543

email: lytle.darren@epa.gov

From: Prysby, Mike (DEQ) [mailto:PRYSBYM@michigan.gov]
Sent: Friday, October 16, 2015 1:32 PM
To: Lytle, Darren <Lytle.Darren@epa.gov>; Schock, Michael <Schock.Michael@epa.gov>
Cc: Busch, Stephen (DEQ) <BUSCHS@michigan.gov>
Subject: FW: Flint WTP PH2 SEG4 - Corrosion Control

Darren, Michael

We have received Flint's corrosion control proposal from their consultant. If you have comments, please provide them to me by Monday morning.

Michael Prysby, P.E.

District Engineer

Office of Drinking Water and Municipal Assistance

517 290-8817

From: Matta, Samir [mailto:SFMatta@lan-inc.com]
Sent: Friday, October 16, 2015 12:02 AM

To: Prysby, Mike (DEQ)
Subject: Flint WTP PH2 SEG4 - Corrosion Control

Hi Mike,

Please see attached plans for the Corrosion Control Plan for the City of Flint. I will have the official submittal package to you tomorrow afternoon after I get Brent or Mike's signature on the permit application. I will call you when I get back in Lansing to drop the package. Is three sets of full size plans adequate? Would you like some half size plans? Let me know.

Basis of Design

Given that Flint will require lead and copper corrosion control and given that Detroit utilizes orthophosphate for their corrosion control methodology, and that Flint will be receiving Detroit water for the immediate future, orthophosphate is the appropriate corrosion control methodology for Flint. A dosage of 0.8 mg/l as PO_4 has been recommended for the Detroit water. Numerous utilities utilizing Lake Michigan water have a target dosage of 0.9 mg/l as PO_4. Therefore, a target dosage in the range of 0.8 to 0.9 mg/l appears appropriate.

It is expected that, at least initially, there will be a significant PO_4 demand in the system. This will require a significantly higher dosage until this demand is satisfied and the target residual can be maintained. We are therefore designing for capability of a maximum dosage of 1.5 mg/l.

The arriving Detroit water will likely have some residual PO_4 when it arrives at Flint. It has been reported that this residual will be approximately 0.4 mg/l. The system must therefore be capable of a minimum dosage of 0.4 mg/l.

Based upon the usage of 75% Phosphoric Acid and a flow range of 4 MGD to 25 MGD, with an average day of 16 MGD, the expected feed rate will be 1.35 to 32 gpd. Average Phosphoric Acid feed is expected to be 10.8 gpd, requiring 30 days storage of 325 gal.

Orthophosphate will need to be applied at two locations. Detroit water will enter the Flint system at Control Station CS2, and supplementary phosphate will be applied there. However, on occasion some incoming water may need to be diverted to the Dort Reservoir, bypassing CS2. This water would then be introduced to the system through High Service Pump Station PS4 and phosphate would be introduced at this location.

Please let me know if the information is adequate or you require additional information.

Thanks.

Samir F. Matta, PE

Team Leader

Lockwood, Andrews
& Newnam, Inc.
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1311 South Linden Road, Suite B • Flint, MI 48532

2121 University Park Dr, Suite 100 • Okemos, MI 48864-6901

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To: Robert Kaplan[Kaplan.Robert@epa.gov]
From: Henry, Timothy
Sent: Mon 10/19/2015 8:16:03 PM
Subject: FW: Flint WTP PH2 SEG4 - Corrosion Control

Tim Henry
Deputy Director, Water Division
U.S. EPA (W-15J)
77 W. Jackson Blvd., Chicago, IL 60604-3590
Phone: 312.886.6107 Fax: 312.692.2578

From: Lytle, Darren
Sent: Monday, October 19, 2015 12:06 PM
To: Deltoral, Miguel; Poy, Thomas; Schock, Michael; Kempic, Jeffrey; Henry, Timothy
Subject: Fwd: Flint WTP PH2 SEG4 - Corrosion Control

Task group members,

Mike and I got this MDEQ request late last Friday with a very short deadline of this morning. We worked on it over the weekend, put together the attached response and after running very quickly by our management and Jeff Kempic, sent it back. Wanted to make sure everyone saw it. It would have been preferable that more time was provided and we could all have provided comment. Sorry, but we can discuss at our first meeting.

Darren

Sent from my iPhone

Begin forwarded message:

> **From:** "Lytle, Darren" <Lytle.Darren@epa.gov>
> **Date:** October 19, 2015 at 12:05:18 PM EDT
> **To:** "Prysby, Mike (DEQ)" <PRYSBYM@michigan.gov>
> **Cc:** "Schock, Michael" <Schock.Michael@epa.gov>, "Kempic, Jeffrey"

<Kempic.Jeffrey@epa.gov>, "Busch, Stephen (DEQ)" <BUSCHS@michigan.gov>
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Branch Chief (Acting)

U.S. Environmental Protection Agency

26 West Martin Luther King Dr.

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Phone: (513) 569-7432

Fax: (513) 487-2543

email: lytle.darren@epa.gov

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Sent: Friday, October 16, 2015 1:32 PM
To: Lytle, Darren <Lytle.Darren@epa.gov>; Schock, Michael <Schock.Michael@epa.gov>
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Subject: FW: Flint WTP PH2 SEG4 - Corrosion Control

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District Engineer

Office of Drinking Water and Municipal Assistance

517 290-8817

From: Matta, Samir [mailto:SFMatta@lan-inc.com]
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Team Leader

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To: Hedman, Susan[hedman.susan@epa.gov]; Kaplan, Robert[kaplan.robert@epa.gov]; Hyde, Tinka[hyde.tinka@epa.gov]
Cc: Rowan, Anne[rowan.anne@epa.gov]; Cassell, Peter[cassell.peter@epa.gov]
From: Kelley, Jeff
Sent: Mon 10/19/2015 9:49:52 PM
Subject: From Detroit News: Snyder defends environmental director on Flint crisis

http://www.detroitnews.com/story/news/politics/2015/10/19/snyder-defends-environmental-quality-director-flint-crisis/74229710/

Snyder defends environmental director on Flint crisis

Chad Livengood and Jim Lynch, The Detroit News 4:40 p.m. EDT October 19, 2015

Detroit — Gov. Rick Snyder on Monday defended his environmental department director's handling of the Flint water crisis, but said he's asked for a report on how the agency didn't detect lead-leaching corrosion in the city's aging pipelines.

Dan Wyant, director of Michigan's Department of Environmental Quality, said late Sunday that staff members applied the wrong standards of the federal Lead and Copper Rule that governs testing and monitoring for drinking water.

The result was that proper controls regarding corrosion were not put in place when the city began drawing its water from the Flint River in the spring of 2014, Wyant said.

"The staff made a mistake in terms of some of the classifications that really put a different set of criteria on it — and that was a mistake," Snyder said Monday in an interview with The Detroit News Editorial Board. "So we're taking remedial action to address that."

Wyant is reassigning Liane Shekter Smith, chief of DEQ's Office of Drinking Water and Municipal Assistance, to another position with the state's environmental agency. Smith will be replaced by Jim Sygo, chief deputy in DEQ's Office of Drinking Water and

Municipal Assistance.

Snyder was asked why Wyant still has a job after elevated levels of lead were found in the blood of Flint children, which caused the state to help pay for switching Flint last week back to Detroit's water system.

"I think (Wyant) took some action with respect to his staff," he said. "But as a practical matter, the people that are first being addressed are the people that had a knowledge and expertise to understand those issues. But we're still looking at all of that."

"But Dan Wyant's done a great job in responding to all of that. So I appreciate all of Dan's hard work."

Snyder said he has asked for an "after action report" on the decision-making that went into Flint switching from Detroit water temporarily to the Flint River until a new regional water pipeline could be built. Flint started getting water again from the Detroit Water and Sewerage Department on Friday.

"We'll look at all of those questions," the Republican governor said.

Wyant's actions come after months of rising concerns among Flint residents over the safety of their drinking water. They followed the recent release of inter-agency communications through Freedom of Information Act requests about Flint's situation that demonstrate confusion behind the scenes.

State officials seemingly failed to heed repeated warnings from the U.S. Environmental Protection Agency as far back as February about potential problems with Flint's water system.

Communications released this week between the federal agency and DEQ also show

how an environmental law designed to protect the public allowed the government to use questionable water testing practices and move slowly in addressing problems, all while remaining “in compliance” with regulations.

Senate Minority Leader Jim Ananich, D-Flint, said he has read some of the records that have been unearthed and he found the response of several DEQ employees “troubling.”

“It appears … folks were more concerned about protecting their jobs than they were about protecting folks in my community,” Ananich told The Detroit News on Monday.

Ananich has called on the Republican-controlled Legislature to launch its own investigation into the DEQ’s role in the Flint water crisis.

Problems began with Flint’s water in the spring of 2014, when the city switched to Flint River water. Resident complained the tap water had strange coloring, smell and taste.

In the last month, those concerns were dramatically heightened by studies that show lead levels in some children have risen since the switch from Detroit’s water system. Those studies showed that, in some areas, lead levels in children’s blood samples have doubled and, in two ZIP codes, tripled.

In a Feb. 27 email to two DEQ staffers, Miguel Del Toral, regulations manager for EPA’s Region 5, warned Flint’s water wasn’t being sampled correctly.

“If systems are pre-flushing the tap the night before collecting … samples … (MDEQ still provides these instructions to public water systems) this clears particulate lead out of the plumbing and biases the results low by eliminating the highest lead values,” Del Toral wrote in the email.

“The particulate lead is being flushed away before collecting compliance samples which provides false assurance to resident about the true lead levels in the water.”

Another problem was that Flint and the state did not provide required “optimal corrosion control” — water additives that prevent lead from old plumbing and service lines from leaching into the drinking water.

An April 24 email from one DEQ staffer stated bluntly: “Flint is currently not practicing any corrosion control treatment at the water plant.”

On Sunday, Wyant said staffers applied standards of the Lead and Copper Rule that were designed for populations below 50,000. Flint has a population of roughly 100,000, which triggers a different set of criteria and includes performing two six-month testing programs of local water to determine proper corrosion controls.

“None of the DEQ staff in this division had ever worked on a water source switch for a community of over 50,000 people,” Wyant said. “It’s increasingly clear there was confusion here, but it also is increasingly clear that DEQ staff believed they were using the proper federal protocol and they were not.”

---
Jeff Kelley
Director, Office of External Communications
U.S. EPA Region 5
ph: 312-353-1159

To: Poy, Thomas[poy.thomas@epa.gov]; Deltoral, Miguel[deltoral.miguel@epa.gov]; Schock, Michael[Schock.Michael@epa.gov]; Henry, Timothy[henry.timothy@epa.gov]; Kaplan, Robert[kaplan.robert@epa.gov]
From: Lytle, Darren
Sent: Tue 10/20/2015 1:55:58 PM
Subject: RE: DRAFT DELIBERATIVE. Working Draft - School Sampling Protocol

Thanks. We will take a look. I also wanted to let you know that MDEQ (Steve Busch, Mike Prysby, Pat Cook, and Adam Rosenthal) called this morning with questions for Mike and I regarding our comments on Flint's corrosion control plan. We thought the call went very well and they are moving ahead with our dose recommendations and monitoring suggestions. We took the opportunity to discuss monitoring and testing strategies, and preparedness for future Flint changes. They will be sending a formal response to our comments soon which we will forward to the group.

Darren

Darren A. Lytle, Ph.D., P.E.

Branch Chief (Acting)

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26 West Martin Luther King Dr.

Cincinnati, Ohio 45268

Phone: (513) 569-7432

Fax: (513) 487-2543

email: lytle.darren@epa.gov

From: Poy, Thomas
Sent: Tuesday, October 20, 2015 9:26 AM
To: Deltoral, Miguel <deltoral.miguel@epa.gov>; Lytle, Darren <Lytle.Darren@epa.gov>; Schock, Michael <Schock.Michael@epa.gov>; Henry, Timothy <henry.timothy@epa.gov>; Kaplan, Robert <kaplan.robert@epa.gov>
Subject: FW: DRAFT DELIBERATIVE. Working Draft - School Sampling Protocol

This draft of MDEQ's school sampling plan was sent yesterday afternoon.

Tom Poy

Chief, Ground Water and Drinking Water Branch

USEPA - Region 5

(312) 886-5991

From: Shekter Smith, Liane (DEQ) [mailto:SHEKTERL@michigan.gov]
Sent: Monday, October 19, 2015 3:55 PM
To: Poy, Thomas; Dykema, Linda D. (DHHS); Madziar, Joseph (LARA); jhenry@gchd.us
Cc: Krisztian, George (DEQ); Sygo, Jim (DEQ); Busch, Stephen (DEQ); Cook, Pat (DEQ); Prysby, Mike (DEQ)
Subject: DRAFT DELIBERATIVE. Working Draft - School Sampling Protocol

Please see attached.

Your comments by COB Tuesday (tomorrow) would be appreciated. Sooner would be better!

Liane

To: Lytle, Darren[Lytle.Darren@epa.gov]; Poy, Thomas[poy.thomas@epa.gov]; Deltoral, Miguel[deltoral.miguel@epa.gov]; Schock, Michael[Schock.Michael@epa.gov]; Henry, Timothy[henry.timothy@epa.gov]
From: Kaplan, Robert
Sent: Tue 10/20/2015 4:47:10 PM
Subject: RE: DRAFT DELIBERATIVE. Working Draft - School Sampling Protocol

Thanks for the update. I will let you all know who the calls with the Mayor and MDEQ go today.

- Bob

Robert Kaplan

Deputy Regional Administrator

U.S. EPA Region 5

Phone: (312) 886-1499

Cell: (312) 515-9827

Fax: (312) 692-2075

From: Lytle, Darren
Sent: Tuesday, October 20, 2015 8:56 AM
To: Poy, Thomas; Deltoral, Miguel; Schock, Michael; Henry, Timothy; Kaplan, Robert
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Cincinnati, Ohio 45268

Phone: (513) 569-7432

Fax: (513) 487-2543

email: lytle.darren@epa.gov

From: Poy, Thomas
Sent: Tuesday, October 20, 2015 9:26 AM
To: Deltoral, Miguel <deltoral.miguel@epa.gov>; Lytle, Darren <Lytle.Darren@epa.gov>; Schock, Michael <Schock.Michael@epa.gov>; Henry, Timothy <henry.timothy@epa.gov>; Kaplan, Robert <kaplan.robert@epa.gov>
Subject: FW: DRAFT DELIBERATIVE. Working Draft - School Sampling Protocol

This draft of MDEQ's school sampling plan was sent yesterday afternoon.

Tom Poy

Chief, Ground Water and Drinking Water Branch

USEPA - Region 5

(312) 886-5991

From: Shekter Smith, Liane (DEQ) [mailto:SHEKTERL@michigan.gov]
Sent: Monday, October 19, 2015 3:55 PM
To: Poy, Thomas; Dykema, Linda D. (DHHS); Madziar, Joseph (LARA); jhenry@gchd.us
Cc: Krisztian, George (DEQ); Sygo, Jim (DEQ); Busch, Stephen (DEQ); Cook, Pat (DEQ); Prysby, Mike (DEQ)
Subject: DRAFT DELIBERATIVE. Working Draft - School Sampling Protocol

Please see attached.

Your comments by COB Tuesday (tomorrow) would be appreciated. Sooner would be better!

Liane

To: Deltoral, Miguel[deltoral.miguel@epa.gov]; Henry, Timothy[henry.timothy@epa.gov]; Kaplan, Robert[kaplan.robert@epa.gov]; Kempic, Jeffrey[Kempic.Jeffrey@epa.gov]; Lytle, Darren[Lytle.Darren@epa.gov]; Schock, Michael[Schock.Michael@epa.gov]
From: Poy, Thomas
Sent: Tue 10/20/2015 7:22:41 PM
Subject: FW: Flint corrosion control submittal
Attachment
ATT00001.htm
Attachment
ATT00002.htm
Attachment
ATT00003.htm

Flint's Corrosion Control proposal…

Tom Poy

Chief, Ground Water and Drinking Water Branch

USEPA - Region 5

(312) 886-5991

From: Kaplan, Robert
Sent: Tuesday, October 20, 2015 2:17 PM
To: Henry, Timothy
Cc: Poy, Thomas
Subject: Fwd: Flint corrosion control submittal

Pls see below and fwd to task force members.

Sent from my iPhone

Begin forwarded message:

> **From:** "Busch, Stephen (DEQ)" <BUSCHS@michigan.gov>
> **To:** "Kaplan, Robert" <kaplan.robert@epa.gov>
> **Cc:** "Sygo, Jim (DEQ)" <SygoJ@michigan.gov>
> **Subject: Flint corrosion control submittal**

Bob,

Forwarding Flint Corrosion Control proposal info per Jim's request (see the 3 attached emails).

We had a conference call with Darren Lytle and Mike Schock this morning to get some things clarified and will be summarizing that conversation. I will include you and Jim when that gets sent out. Let us know if you need anything else.

Stephen Busch, P.E.

MDEQ Lansing District Coordinator

Office of Drinking Water and Municipal Assistance

Lansing and Jackson District Supervisor

517-643-2314

buschs@michigan.gov

To: Prysby, Mike (DEQ)[PRYSBYM@michigan.gov]
Cc: Schock, Michael[Schock.Michael@epa.gov]; Kempic, Jeffrey[Kempic.Jeffrey@epa.gov]; Busch, Stephen (DEQ)[BUSCHS@michigan.gov]
From: Lytle, Darren
Sent: Mon 10/19/2015 4:05:18 PM
Subject: RE: Flint WTP PH2 SEG4 - Corrosion Control

Mike,

Thank-you for giving us the opportunity to review the city of Flint's corrosion control plan.

We believe it is necessary that Flint boosts orthophosphate dosage. Given that the distribution system has not received orthophosphate in over a year, we expect that orthophosphate will need to be boosted to 1) meet the demand of the distribution system, 2) reach the service lines and other lead-containing components in premise plumbing, and 3) accelerate lead reduction at the consumer's taps. Orthophosphate should preferably be added in the same form as the Detroit source which is phosphoric acid from our understanding. This is the proposed case here, however, a simple test should be performed to make sure that the pH is not impacted in a significant way at the desired target dose.

We have not been able to obtain comprehensive water quality data for the finished water characteristics of the Detroit water that will be fed to Flint, to assess ranges of major chemical characteristic fluctuations. However, based upon the email trail, Detroit water entering the Flint system appears to only contain around 0.4 PO4/L. This concentration range is entirely too low compared to that needed in studies presented and published in the last 20+ years that have focused on lead released directly from lead pipes, and the solubility of the most likely lead orthophosphate pipes scales. We also strongly feel that targeted dose of 0.8 mg PO4/L is also too low, for the very same reason. We would be glad to share with you numerous standard corrosion control and treatment reference works, best practices guides and published results from US and international lead corrosion control field and pilot studies. Secondly, the basis for that target (other communities using Lake Huron source use the same dose) is not scientifically derived nor does it consider water quality and the current state of Flint's distribution system. We have reviewed the original Detroit corrosion study and have seen some of the LCR monitoring data, and besides the fact that it did not directly pertain to this water source, few dosages were tested in the cited 1994 pipe loop study, and the higher dosage than the one implemented in the field currently was more effective. Based on the limited amount of data on the quality of Detroit water, what we know about the history of Detroit corrosion control, we think an orthophosphate residual of 3 to 4 mg PO4/L should be the minimum starting test target residual for pipe passivation. It is likely that, at least initially a higher dosage will be necessary to reach the far ends of the distribution system and sufficiently reduce lead solubility and release from all lead sources. To allow flexibility, we feel the design of the chemical feed and storage systems should be able to consistently deliver a maximum dose of 5 to 6 mg PO4/L, if substantial orthophosphate loss is observed, if the starting dose is set for the desired residual level of 3 to 4 mg/L as PO4. We suggest that jar tests be performed in advance of orthophosphate addition to Detroit water to evaluate the impact of orthophosphate dose on turbidity that could result from interactions between orthophosphate and background Detroit water quality parameters (e.g., aluminum, calcium, etc.).

We want to stress that immediately shifting to Detroit water and adding orthophosphate will not necessarily translate to immediate improvements. Furthermore, this is a change, albeit a return to past conditions. Nonetheless, a period of system upset should be anticipated. The need for a communication strategy and a distribution system plan are critical.

Lastly, we see no mention of a water quality monitoring program. Two programs need to be put in place immediately (before return to Detroit water) to 1) identify lead sources, 2) assess treatment effectiveness against lead release from all of the simultaneously operating mechanisms (solubility, particulate release, galvanic corrosion), and 3) assess orthophosphate levels and stability of water quality in the distribution system.

There are multiple sources of lead in the Flint distribution system to the consumers' taps, such as: pipes; leaded brass; leaded solder; accumulations on old galvanized steel pipes; possibly accumulated on copper or some plastic pipes. It is critical that the fate of orthophosphate in the distribution system is understood, and how effective it is against each type of lead source, so dosing adjustment can be properly made. For this purpose, we recommend that a number of residences throughout Flint that meet the following plumbing criteria, be identified for an assessment of the contribution lead from the different potential service line and interior plumbing sources, through detailed mapping of plumbing materials, lengths, sizes, and location and type of inline devices and faucets using profile sampling. For confidence in interpretation, probably at least 5 sites from each of the configurations will be necessary. The configurations we would estimate to be most important (but should be changed or added to if local construction practice indicates it's necessary): Lead service line, galvanized steel interior plumbing; lead service line, copper with leaded solder joints; lead service line, plastic interior plumbing. It is also possible that interior plumbing may differ from the material used for the customer-side service line segment. We would be glad to discuss the specifics of this sampling effort.

For the purpose of assessing stability of water quality in the distribution system and to inform on orthophosphate residual adjustment, we suggest that 8 to 10 locations in the distribution system be selected to measure pH, alkalinity, orthophosphate, turbidity and iron on a weekly basis. These could be collected from TCR sampling locations, or other readily-accessible buildings, should be located at a distribution of locations in the distribution system and should be collected after a flush sufficiently long to assure that "fresh" distribution system water is being measured. Research has shown that over time, orthophosphate can reduce disinfectant demand associated with corroding metallic distribution system materials. These measurements need to be performed in the field and can simply be done with a portable HACH test kit or spectrophotometer.

A lead sampling plan needs to be in place to access the effectiveness of water change and treatment boost. LCR monitoring sites with confirmed lead service lines can be in the sampling pool. Sampling should consist of a 1 liter first draw sample (LCR sample without 5 minute pre-flush), followed by an additional flushed sample or two depending on profile sample results which is intended to capture major lead source(s). The specific details of this effort need to be worked out by the technical committee as soon as possible. We would gladly work with Flint on establishing a water sampling program to identity and verify lead service line sites. The plan and initial sampling effort should be performed before the switch so that one baseline sample set is collected.

Lastly, our strength does not fall under full-scale pump and chemical feed delivery systems. We would only say that the systems need to be scaled-up in size to accommodate our suggested dosing needs. Also, there is the some discussion about diverting water to the Dort reservoir and an associated orthophosphate feed system. We are not familiar with the reservoir but are wondering if it is an open reservoir?

Of course this is a lot of information to share and we would gladly be available to discuss the technical and scientific basis for our suggestions.

Let us know if you have any questions and thanks again,

Darren and Mike

Darren A. Lytle, Ph.D., P.E.

Branch Chief (Acting)

U.S. Environmental Protection Agency

26 West Martin Luther King Dr.

Cincinnati, Ohio 45268

Phone: (513) 569-7432

Fax: (513) 487-2543

email: lytle.darren@epa.gov

From: Prysby, Mike (DEQ) [mailto:PRYSBYM@michigan.gov]
Sent: Friday, October 16, 2015 1:32 PM
To: Lytle, Darren <Lytle.Darren@epa.gov>; Schock, Michael <Schock.Michael@epa.gov>
Cc: Busch, Stephen (DEQ) <BUSCHS@michigan.gov>
Subject: FW: Flint WTP PH2 SEG4 - Corrosion Control

Darren, Michael

We have received Flint's corrosion control proposal from their consultant. If you have comments, please provide them to me by Monday morning.

Michael Prysby, P.E.

District Engineer

Office of Drinking Water and Municipal Assistance

517 290-8817

From: Matta, Samir [mailto:SFMatta@lan-inc.com]
Sent: Friday, October 16, 2015 12:02 AM
To: Prysby, Mike (DEQ)
Subject: Flint WTP PH2 SEG4 - Corrosion Control

Hi Mike,

Please see attached plans for the Corrosion Control Plan for the City of Flint. I will have the official submittal package to you tomorrow afternoon after I get Brent or Mike's signature on the permit application. I will call you when I get back in Lansing to drop the package. Is three sets of full size plans adequate? Would you like some half size plans? Let me know.

Basis of Design

Given that Flint will require lead and copper corrosion control and given that Detroit utilizes orthophosphate for their corrosion control methodology, and that Flint will be receiving Detroit water for the immediate future, orthophosphate is the appropriate corrosion control methodology for Flint. A dosage of 0.8 mg/l as PO_4 has been recommended for the Detroit water. Numerous utilities utilizing Lake Michigan water have a target dosage of 0.9 mg/l as PO_4. Therefore, a target dosage in the range of 0.8 to 0.9 mg/l appears appropriate.

It is expected that, at least initially, there will be a significant PO_4 demand in the system. This will require a significantly higher dosage until this demand is satisfied and the target residual can be maintained. We are therefore designing for capability of a maximum dosage of 1.5 mg/l.

The arriving Detroit water will likely have some residual PO_4 when it arrives at Flint. It has been reported that this residual will be approximately 0.4 mg/l. The system must therefore be capable of a minimum dosage of 0.4 mg/l.

Based upon the usage of 75% Phosphoric Acid and a flow range of 4 MGD to 25 MGD, with an average day of 16 MGD, the expected feed rate will be 1.35 to 32 gpd. Average Phosphoric Acid feed is expected to be 10.8 gpd, requiring 30 days storage of 325 gal.

Orthophosphate will need to be applied at two locations. Detroit water will enter the Flint system at Control Station CS2, and supplementary phosphate will be applied there. However, on occasion some incoming water may need to be diverted to the Dort Reservoir, bypassing CS2. This water would then be introduced to the system through High Service Pump Station PS4 and phosphate would be introduced at this location.

Please let me know if the information is adequate or you require additional information.

Thanks.

Samir F. Matta, PE

Team Leader

Lockwood, Andrews
& Newnam, Inc.
A LEO A DALY COMPANY

1311 South Linden Road, Suite B • Flint, MI 48532

2121 University Park Dr, Suite 100 • Okemos, MI 48864-6901

D 517.819.2367 **C** 517.819.2367

www.lan-inc.com • sfmatta@lan-inc.com

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To: Busch, Stephen (DEQ)[BUSCHS@michigan.gov]
From: Prysby, Mike (DEQ)
Sent: Tue 10/20/2015 6:31:00 PM
Subject: Preliminary and Deliberative: FW: Flint WTP PH2 SEG4 - Corrosion Control
Flint WTP PH2 S4 - Corrosion Control.pdf

Samir's updated proposal sent Friday nite…

Michael Prysby, P.E.

District Engineer

Office of Drinking Water and Municipal Assistance

517 290-8817

From: Matta, Samir [mailto:SFMatta@lan-inc.com]
Sent: Monday, October 19, 2015 12:18 AM
To: Prysby, Mike (DEQ)
Subject: Flint WTP PH2 SEG4 - Corrosion Control

Hi Mike,

Please see attached updated plans for the Corrosion Control Plan for the City of Flint. These plans matches the set of plans that was submitted to your office in hard copies on Friday. This submittal is somewhat modified from the set that was submitted to you on Thursday night/Friday morning.

We will address the questions you raised and respond on Monday.

Please let me know if there are other comments that needs our attention.

Thanks for your prompt and quick response to our submittal.

Samir F. Matta, PE

Team Leader

Lockwood, Andrews
& Newnam, Inc.
A LEO A DALY COMPANY

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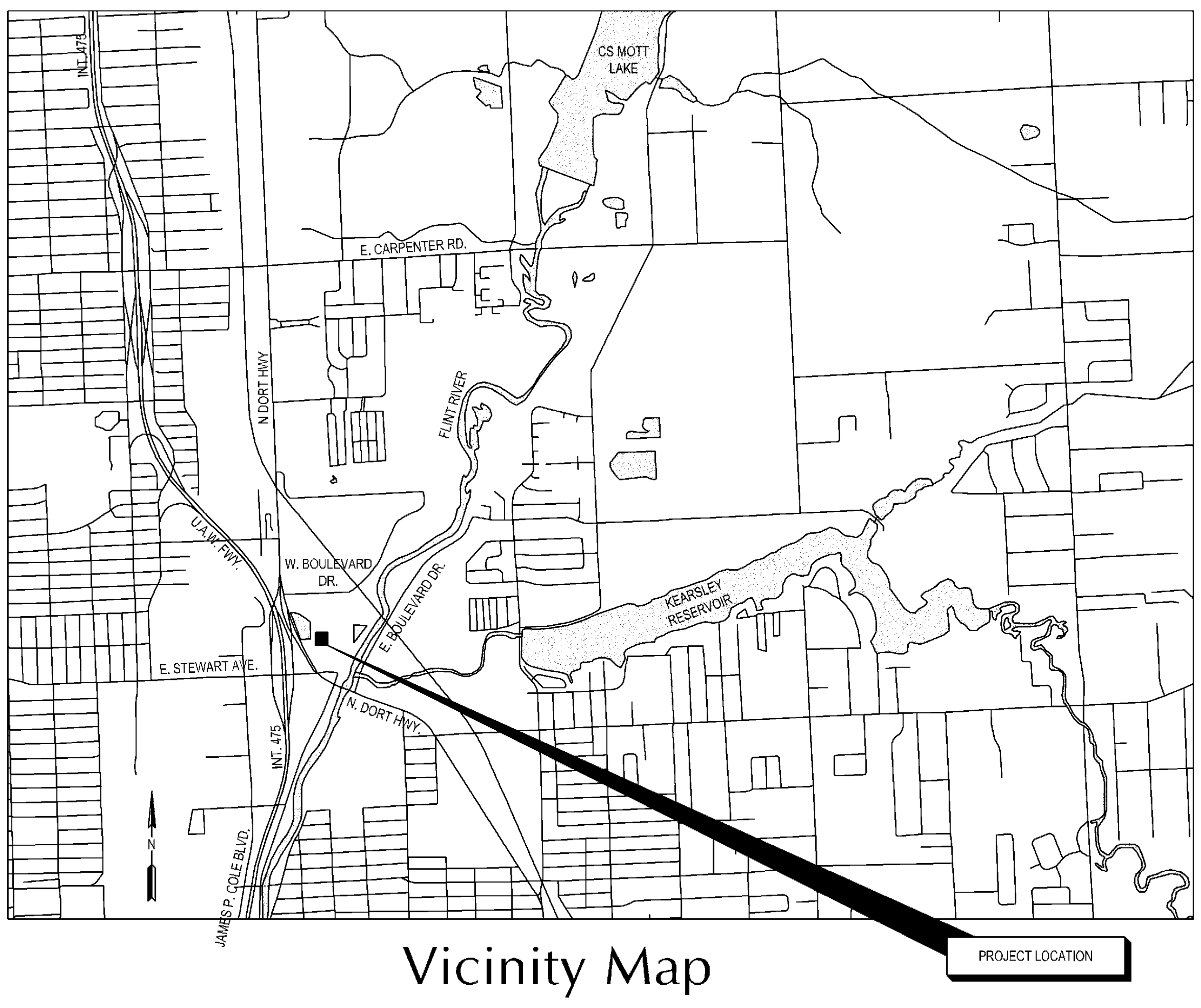
City of Flint, MI
Flint Water Treatment Plant
Phase II, Segment IV - Corrosion Control

4500 North Dort Highway, Flint, MI 48505



Vicinity Map

Jeremy N. Nakashima 10-16-2015

Jeremy N. Nakashima, P.E. Date
Michigan Licensed Professional Engineer
No. 6201058535 Expires October 31, 2016

JEREMY N. NAKASHIMA ENGINEER No. 6201058535

Issued for: Permitting
Issue Date: October 16, 2015

Lockwood, Andrews & Newnam, Inc.
A LEO A DALY COMPANY
PLANNING
ENGINEERING
PROGRAM MANAGEMENT

1311 South Linden Road, Suite B
Flint, MI 48532
Tel 810-820-2682 Fax 810-820-2703

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D-4	PUMP STATION 4 SECTIONS AND DETAILS
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Water Treatment Plant Site

(N.T.S.)

GENERAL NOTES

1. CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND PROTECTING ALL EXISTING PUBLIC AND PRIVATE UTILITIES. UTILITY INFORMATION SHOWN ON PLANS IS NOT GUARANTEED TO BE ACCURATE OR ALL-INCLUSIVE. THE CONTRACTOR SHALL COORDINATE WITH ALL AFFECTED UTILITY COMPANIES TO DETERMINE THE LOCATIONS, THE POSSIBLE NEED FOR RELOCATIONS AND THE ACCEPTABLE MEANS AND METHODS FOR PROTECTING EXISTING UTILITIES. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ANY DAMAGE TO UTILITIES CAUSED BY CONSTRUCTION OPERATIONS.

2. NOTIFICATION OF UTILITIES: CONTRACTOR SHALL NOTIFY ALL UTILITY COMPANIES AT LEAST FORTY-EIGHT (48) HOURS PRIOR TO COMMENCEMENT OF CONSTRUCTION.

3. THE CONTRACTOR SHALL GIVE EACH UTILITY COMPANY AND THE CITY AT LEAST FIVE (5) BUSINESS DAYS PRIOR NOTICE OF PROPOSED UTILITY SHUTDOWNS. CONTRACTOR SHALL NOT OPERATE ON ANY VALVES OR SHUTDOWN ANY UTILITIES. ONLY THE UTILITY OWNERS AND THE CITY SHALL OPERATE VALVES AND SHUTDOWN UTILITIES. CONTRACTOR SHALL PROVIDE THE CITY WITH COPIES OF UTILITY OWNERS' WRITTEN APPROVAL OF PROPOSED SHUTDOWNS.

4. CONTRACTOR SHALL ASSUME COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING CONSTRUCTION OF THIS PROJECT, AND FOR THE SAFETY OF ALL PERSONS AND/OR PROPERTY ON SITE.

5. THE SAFE AND ORDERLY PASSAGE OF PEDESTRIAN AND VEHICULAR TRAFFIC SHALL BE PROVIDED WHERE OPERATIONS ABUT PUBLIC THOROUGHFARES AND ADJACENT PROPERTY.

6. NO ROADS OR ENTRANCES SHALL BE BLOCKED BY CONSTRUCTION, CONSTRUCTION DEBRIS OR EQUIPMENT FOR AN EXTENDED PERIOD OF TIME WITHOUT PRIOR APPROVAL FROM THE CITY OF FLINT. ALL ROADWAYS SHALL BE OPEN TO TRAFFIC AT THE CONCLUSION OF EACH WORK DAY WITH PROPER TRAFFIC SIGNS AND BARRICADES ERECTED FOR SAFETY, UNLESS NOTED OR APPROVED OTHERWISE.

7. CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE REGULATIONS AND REQUIREMENTS.

8. ALL PROPERTY MARKERS AND REFERENCE MARKERS SHALL BE CAREFULLY PRESERVED DURING CONSTRUCTION UNTIL THEIR LOCATION HAS BEEN WITNESSED OR OTHERWISE TIED IN BY AN AUTHORIZED AGENT OR SURVEYOR.

9. INCIDENTAL COSTS: ALL ITEMS SHOWN ON THE PLANS OR IN THE SPECIFICATIONS OR THAT WHICH CAN BE INFERRED AS REQUIRED FOR THE WORK, BUT DO NOT APPEAR IN THE SUMMARY OF QUANTITIES OR SCHEDULES, SHALL BE CONSIDERED INCIDENTAL TO THE COST OF THIS PROJECT.

10. CONTRACTOR SHALL MAKE ARRANGEMENTS FOR THE PROPER BRACING, SHEETING, SHORING AND OTHER REQUIRED PROTECTION OF ALL UTILITIES, PIPELINES AND ROADWAYS BEFORE CONSTRUCTION BEGINS. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO THE ROADWAYS AND ASSOCIATED STRUCTURES AND SHALL MAKE REPAIRS AS NECESSARY TO THE SATISFACTION OF THE OWNER AT THE CONTRACTOR'S EXPENSE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE INSTALLATION AND MAINTENANCE OF ADEQUATE SIGNAGE AND WARNING DEVICES TO INFORM AND PROTECT THE PUBLIC.

11. PROTECTING CONCRETE: CONTRACTOR SHALL PROTECT ALL NEW CONCRETE WORK FROM BEING MARRED, DEFACED, OR DAMAGED ON ITS SURFACE BY PASSERS-BY. REPLACING ANY CONCRETE WORK SO MARKED SHALL BE AT THE CONTRACTOR'S EXPENSE.

12. ALL EXISTING FACILITIES SHALL BE KEPT IN SERVICE DURING CONSTRUCTION, EXCEPT WHERE PERMISSION IS OTHERWISE GRANTED BY THE CITY.

13. CONTRACTOR SHALL BE RESPONSIBLE FOR THE MEANS, METHODS, PROCEDURES, TECHNIQUES AND SEQUENCES OF CONSTRUCTION, INCLUDING SAFETY ON THE JOB SITE. NEITHER THE PROFESSIONAL ACTIVITIES OF THE ENGINEER NOR THE PRESENCE OF THE ENGINEER AT THE CONSTRUCTION SITE SHALL RELIEVE THE CONTRACTOR OF HIS OBLIGATIONS, DUTIES, AND RESPONSIBILITIES, INCLUDING ANY HEALTH AND SAFETY PRECAUTIONS REQUIRED BY ANY REGULATORY AGENCIES.

14. CONTRACTOR SHALL PLACE, GRADE AND MAINTAIN CRUSHED STONE RAMPS AS NEEDED TO PROVIDE SAFE PEDESTRIAN WALKWAYS WHERE ABRUPT CHANGES IN GRADE OCCUR AT ALL TIMES DURING THE CONSTRUCTION PROJECT, AS DIRECTED BY THE CITY'S REPRESENTATIVE.

15. CONTRACTOR SHALL PROVIDE EROSION PROTECTION UNTIL FINAL SURFACE RESTORATION.

16. SEVERAL CONSTRUCTION ITEMS FOR THIS PROJECT INVOLVE MODIFICATIONS TO EXISTING FACILITIES. ELEVATIONS, DIMENSIONS, DETAILS, ETC. HAVE BEEN SHOWN BASED UPON THE BEST AVAILABLE INFORMATION. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS, COORDINATES, AND ELEVATIONS BEFORE PROCEEDING WITH THE WORK., AND SHALL NOTIFY THE OWNER'S REPRESENTATIVE OF ANY DISCREPANCIES IMMEDIATELY. CONTRACTOR SHALL MAKE ADJUSTMENTS NECESSARY TO COMPLETE THE WORK AT NO ADDITIONAL COST TO THE CITY.

17. PAVING TO REMAIN SHALL BE PROTECTED FROM DAMAGE. IF DAMAGED, PAVING SHALL BE REPLACED PROMPTLY AT NO ADDITIONAL COST TO THE CITY

18. ALL DISTURBED GRASS AREAS SHALL BE HYDROMULCHED.

19. ALL EXCAVATIONS AND TRENCHES SHALL COMPLY WITH SPECIFICATION SECTION 02260 - TRENCH SAFETY SYSTEM, AND OSHA REQUIREMENTS FOR EXCAVATIONS CONTAINED IN 29 CFR PART 1926, SUBPART P.

20. THE CONTRACTOR SHALL USE CARE IN GRADING OR EXCAVATING NEAR ANY AND ALL EXISTING ITEMS, WHICH ARE NOT INDICATED TO BE REMOVED. ANY DAMAGE TO THESE EXISTING ITEMS CAUSED BY THE CONTRACTOR'S OPERATIONS SHALL BE REPAIRED TO THE SATISFACTION OF THE CITY AT THE CONTRACTOR'S EXPENSE.

21. BURNING OR INCINERATION OF RUBBISH IS NOT ALLOWED ON SITE.

22. DISPOSAL OF MATERIALS: REFER TO REQUIREMENTS IN SPECIFICATION 01576 - WASTE MATERIAL DISPOSAL. NOTIFY ENGINEER IMMEDIATELY IF CONTAMINATED SOILS OR GROUND WATER ARE ENCOUNTERED. DISPOSAL OF SOILS AND GROUNDWATER SHALL BE IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL REQUIREMENTS. REFER TO REQUIREMENTS IN SPECIFICATION 02136 - WASTE MATERIAL HANDLING AND DISPOSAL.

ProjectWise: PW:\\LADPW.LADCO.INT:PROJECTWISE\DOCUMENTS\PROJECTS\130-10701-001\4-0-PRODUCTION\4-01-DRAWINGS\...
File:L:\130-10701-003\4-0-Production\4-01-Drawings (Phosphate Feed System)\General\G-2.dwg Plotted:10/16/2015 11:34 AM By:Lepore, Samuel

Flint WTP
Phase II, Segment IV
Corrosion Control
Flint MI, 48505

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KEY PLAN

REVISIONS

NO.	DESCRIPTION	DATE

FILE LOG

Manager	SFM
Design	CFL
Draw	SAL
Check	CFL\JNN

STAMP

JEREMY N. NAKASHIMA
ENGINEER
No. 6201058535

Project No. 130-10701-003
Date: October 16, 2015

INDEX OF SHEETS, SITE OVERVIEW AND GENERAL NOTES

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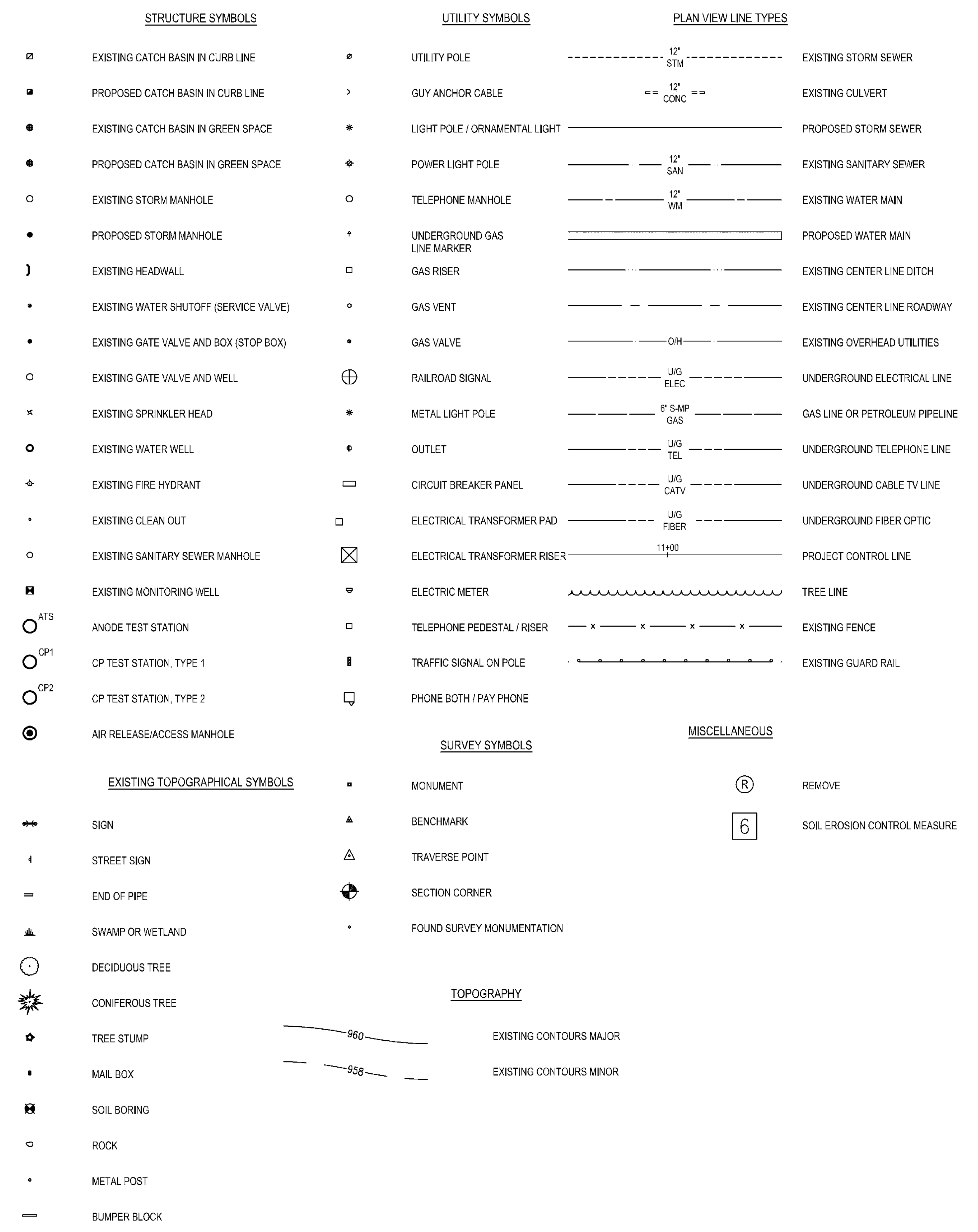
SYMBOLS AND ABBREVIATIONS



AASHTO	AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS
APPROX.	APPROXIMATELY
AWWA	AMERICAN WATER WORKS ASSOCIATION
B	BOLLARD
B.C.	BRICK COLUMN
BFV	BUTTERFLY VALVE
BLDG.	BUILDING
C	CONDUIT
CFE	CITY FURNISHED EQUIPMENT
C.I.P.	CAST IRON PIPE
C.O.	CLEAN OUT
℄	CENTERLINE
CONC.	CONCRETE
CONT.	CONTINUOUS/CONTINUED
CPLG.	COUPLING
CP	CATHODIC PROTECTION TEST STATION
CRT	CONTROLLED RELEASE TERMINAL
D.B.	DUCTBANK
DEG.	DEGREE
DET.	DETAIL
DIA.	DIAMETER
D.I.P.	DUCTILE IRON PIPE
DWGS	DRAWINGS
DWL	DOWEL
E.	EAST
EA	EACH
E.C.R.	ELECTRIC CONDUIT RISER
E.F.	EACH FACE
EJ	EXPANSION JOINT
E.M.P.	ELECTRIC METER POLE
E.O.P.	END OF PAVEMENT
E.W.	EACH WAY
ECC.	ECCENTRIC
EL.	ELEVATION
ELEC.	ELECTRIC
ELEC. LOC.	UTILITY WAS ELECTRICALLY LOCATED
ELECT.	ELECTRICAL
ELL	ELBOW
EXIST.	EXISTING
F.H.	FIRE HYDRANT
F.I.K.	FLANGE ISOLATION KIT
F.L.	FLOOD LIGHT
F.P.	FLAG POLE
FND.	FOUND
FT.	FEET/FOOT
GA	GAUGE
GALV.	GALVANIZED
HMAC	HOT MIX ASPHALTIC CONCRETE
HORIZ.	HORIZONTAL
HW	HEADWALL
I.	IRON
I.D.	INSIDE DIAMETER
INCL.	INCLUDED
INV.	INVERT
LB	POUND
LG	LENGTH
LT.	LEFT
MBGF	METAL BEAM GUARD FENCE
M.H.	MANHOLE
M.W.	MONITORING WELL
MAX.	MAXIMUM
MIN.	MINIMUM
MON.	MONUMENT
N.	NORTH
NOM.	NOMINAL
NPT	NATIONAL PIPE THREAD
NTS	NOT TO SCALE
O.C.	ON CENTER
O.D.	OUTSIDE DIAMETER
O/H	OVERHEAD
P.	POST
P.C.C.P.	PRESTRESSED CONCRETE CYLINDER PIPE
P.P.	POWER POLE
P/L	PIPELINE
PED.	PEDESTAL
⅊	PLATE
P.O.B.	POINT OF BEGINNING
PSI	POUNDS PER SQUARE INCH
PVMT.	PAVEMENT
R.O.W.	RIGHT-OF-WAY
R.W.	RETAINING WALL
RAD.	RADIUS
RCB	REINFORCED CONCRETE BOX
R.C.P.	REINFORCED CONCRETE PIPE
REINF.	REINFORCEMENT
REQD.	REQUIRED
RGS	RIGID GALVANIZED STEEL
RR	RAILROAD
RT.	RIGHT
S.	SOUTH
SAN.	SANITARY
SCH.	SCHEDULE
SHLDR	SHOULDER
SHT.	SHEET
SIM.	SIMILAR
SR	SHORT RADIUS
SS	STAINLESS STEEL
STA.	STATION
STD.	STANDARD
STL.	STEEL
STM.	STORM
S.V.	SPRINKLER VALVE
T&B	TOP & BOTTOM
TAS	TERMINAL ANCHOR SECTION
T.C.B.	TRAFFIC CONTROL BOX
T.L.S.	TRAFFIC SIGNAL LIGHT SUPPORT
T.P.	TELEPHONE POLE
T.S.L.	TRAFFIC SIGNAL LIGHT
TBM	TEMPORARY BENCH MARK
TEL.	TELEPHONE
THK	THICK
THR.	THREADED
TRANS.	TRANSFORMER
TS&V	TAPPING SLEEVE AND VALVE
MDOT	MICHIGAN DEPARTMENT OF TRANSPORTATION
TYP.	TYPICAL
U.E.B.	UNDERGROUND ELECTRIC BOX
U.G.	UNDERGROUND
U.S.A.C.E.	U.S. ARMY CORP OF ENGINEERS
U.S.C.G.	U.S. COAST GUARD
U.S.G.S.	U.S. GEOLOGICAL SURVEY
U.T.B.	UNDERGROUND TRAFFIC BOX
VERT.	VERTICAL
W.	WEST
W.B.O.V.	WATER BLOW-OFF VALVE
W.I.	WROUGHT IRON
W.L.	WATERLINE
W.M.	WATER METER
W.V.	WATER VALVE
WWM	WELDED WIRE MESH

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Flint MI, 48505

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KEY PLAN

REVISIONS

NO.	DESCRIPTION	DATE

FILE LOG

Manager	SFM
Design	CFL
Draw	SAL
Check	CFL/JNN

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JEREMY N. NAKASHIMA
No. 6201058535

Project No. 130-10701-003
Date: October 16, 2015

SYMBOLS AND ABBREVIATIONS

G-3

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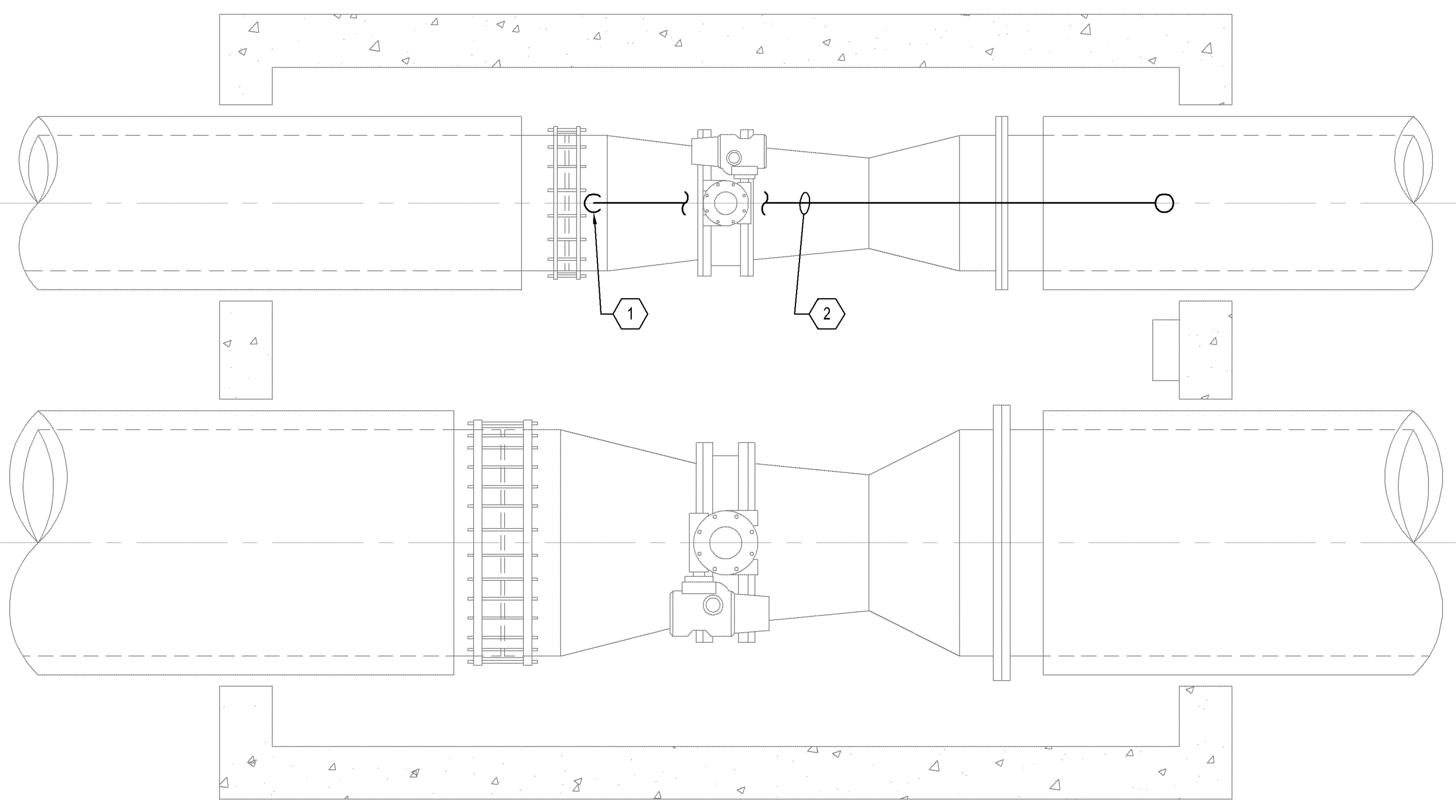


1 CONTROL STATION PLAN - LOWER LEVEL

SCALE: 3/8" = 1'-0"

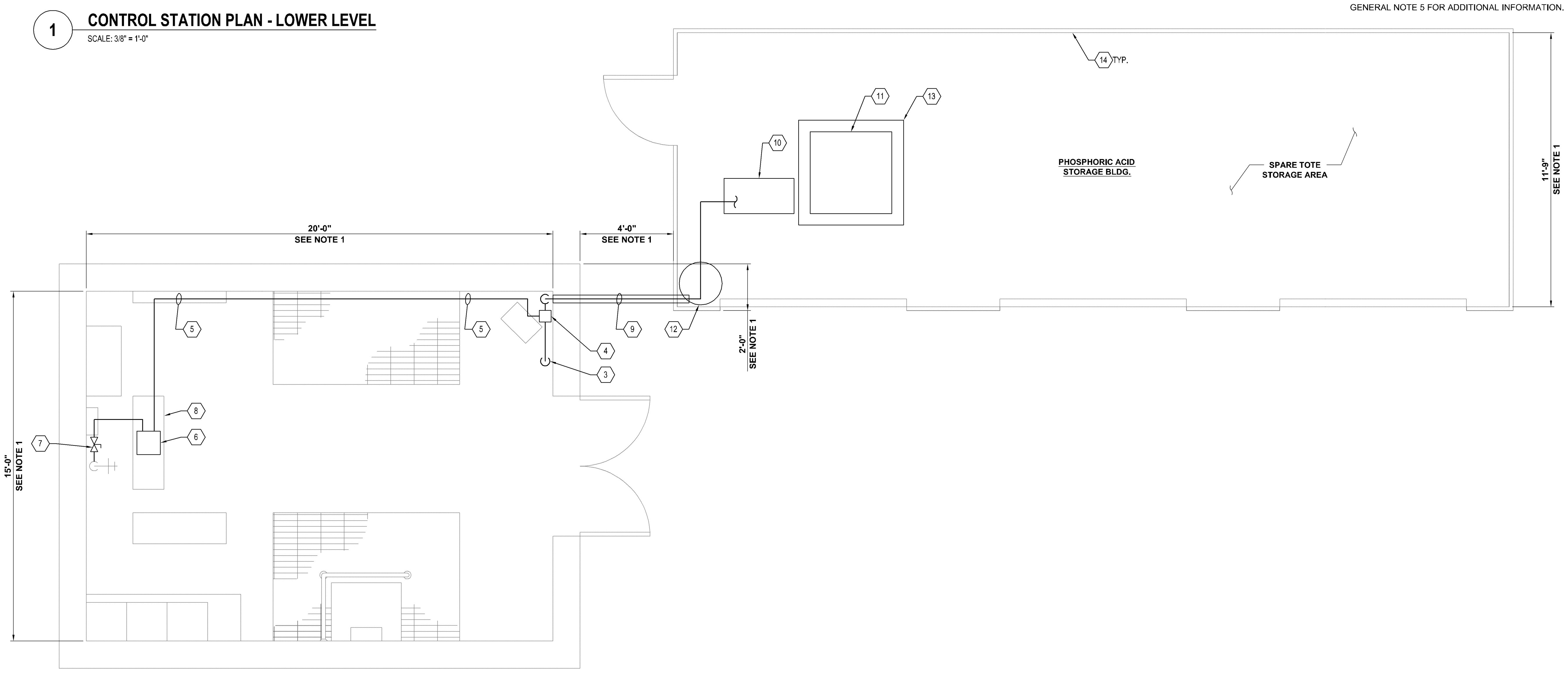
GENERAL NOTES:

1. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS AND ELEVATIONS.
2. DIMENSION SUBJECT TO CHANGE BASED ON FIELD MEASUREMENTS OF EXISTING CONDITIONS. CONTRACTOR SHALL MAKE CHANGES AT NO ADDITIONAL COST. SUBMIT SHOP DRAWINGS FOR APPROVAL.
3. ALL CPVC PIPE JOINTS SHALL BE SOLVENT WELD TYPE.
4. PROVIDE PIPE SUPPORTS MOUNTED OFF PUMP TABLE FOR ALL PIPING AT METERING PUMPS.
5. POLYURETHANE FOAM SHALL BE CLOSED CELL TYPE WITH MINIMUM R VALUE OF 6.5 PER INCH THICKNESS. PROVIDE MINIMUM 3" ON WALLS AND 4" ON CEILING. EXISTING METAL SURFACES SHALL BE THOROUGHLY CLEANED AND PRIMED WITH APPROPRIATE MATERIAL RECOMMENDED BY SPF PRODUCT MANUFACTURER. UPON COMPLETION, PROVIDE A MINIMUM OF 14 MILS OF DC315 (FIREPROOFING PRODUCT BY "PAINT TO PROTECT", OR APPROVED EQUAL) OVER ALL EXPOSED AREAS OF SPRAYED POLYURETHANE FOAM.

KEYED NOTES:

#

1. TAP 36" STEEL PIPE AND PROVIDE CORPORATION STOP MAIN CONNECTION. CONNECT CORPORATION STOP MAIN CONNECTION TO CPVC PIPE WITH 2 LINEAR FEET FLEXIBLE PE TUBING.
2. ¾" SCH 40 CPVC SOLUTION FEED PIPING, ROUTE ALONG CEILING.
3. ¾" SCH 40 CPVC SOLUTION FEED PIPING UP THROUGH FLOOR SLAB FROM BELOW. CORE HOLE AND GROUT ANNULAR SPACE AROUND PIPE WITH NON-SHRINK GROUT.
4. MIXING CHAMBER. MOUNT BELOW EXISTING UNIT HEATER, KEEP VERTICAL PHOSPHATE FEED LINE AS SHORT AS PRACTICAL. SEE DETAIL 2, SHEET D-6.
5. ¾" SCH 40 CPVC WATER SUPPLY PIPING, ROUTE AND SECURE TO WALL BELOW EXISTING WALL MOUNTED INSTRUMENTATION.
6. BOOSTER PUMP. ½" INLET AND ½" OUTLET.
7. ¾" COPPER TUBING. TYPE K, HARD TEMPER TEE INTO HOSE BIBB SUPPLY LINE. PROVIDE BALL TYPE SHUT-OFF VALVE.
8. EXISTING CONCRETE HOUSEKEEPING PAD.
9. ½" SCH 40 CPVC PHOSPHATE FEED PIPING WRAPPED IN HEAT TAPE, ROUTED IN 3" SCH 80 CPVC CASING. PROVIDE DOUBLE LINK SEAL AT CASING TERMINATION WITHIN CONTROL STATION BUILDING. SLOPE CASING BACK TOWARDS PHOSPHORIC ACID STORAGE BUILDING TO OVER BARREL FILLED WITH CRUSHED LIME STONE.
10. PUMP TABLE, SEE DETAIL 1, SHEET D-6 FOR FEED PUMP AND PIPING CONFIGURATION.
11. PHOSPHATE TOTE.
12. BARREL FILLED WITH CRUSHED LIME STONE.
13. SPILL CONTAINMENT PALLET, 365 GAL. SUMP CAPACITY.
14. PROVIDE SPRAY POLYURETHANE FOAM (SPF) INSULATION ON INTERIOR WALLS AND CEILING OF PHOSPHORIC ACID STORAGE BUILDING. PROVIDE MINIMUM 3" ON WALLS AND 4" ON CEILING. SEE GENERAL NOTE 5 FOR ADDITIONAL INFORMATION.



2 CONTROL STATION PLAN - GRADE LEVEL

SCALE: 3/8" = 1'-0"

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KEY PLAN

REVISIONS

NO.	DESCRIPTION	DATE

FILE LOG

Manager	SFM
Design	CFL
Draw	SAL
Check	CFL/JNN

STAMP

JEREMY N. NAKASHIMA ENGINEER No. 6201058535

0 2' 4' 6'
SCALE: 3/8"=1'-0"

Project No. 130-10701-003
Date: October 16, 2015

CONTROL STATION 2 - PLANS

D-1

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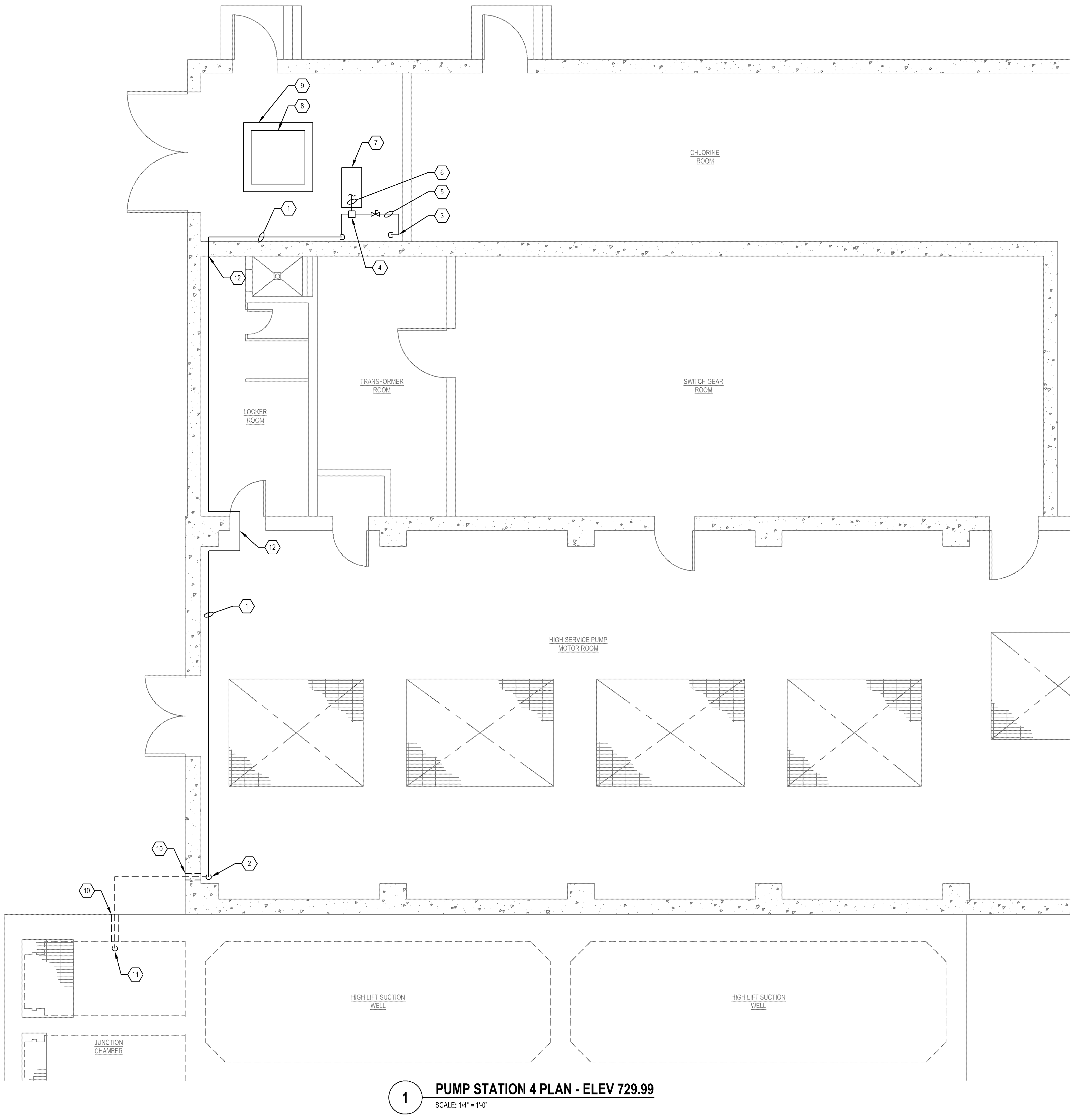

1 **PUMP STATION 4 PLAN - ELEV 729.99**

SCALE: 1/4" = 1'-0"

GENERAL NOTES:

1. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS AND ELEVATIONS.
2. DIMENSION SUBJECT TO CHANGE BASED ON FIELD MEASUREMENTS OF EXISTING CONDITIONS. CONTRACTOR SHALL MAKE CHANGES AT NO ADDITIONAL COST. SUBMIT SHOP DRAWINGS FOR APPROVAL.
3. ALL CPVC PIPE JOINTS SHALL BE SOLVENT WELD TYPE.
4. PROVIDE PIPE SUPPORTS MOUNTED OFF PUMP TABLE FOR ALL PIPING AT METERING PUMPS.

KEYED NOTES:

#

1. ¾" SCH 40 CPVC SOLUTION FEED PIPING, ROUTE ALONG WALL, PIPE ELEVATION TO PASS OVER DOORWAY.
2. ¾" SCH 40 CPVC SOLUTION FEED PIPING DOWN THROUGH FLOOR SLAB 6 FEET BELOW GRADE. CORE HOLE AND GROUT ANNULAR SPACE AROUND PIPE WITH NON-SHRINK GROUT.
3. ¾" SCH 40 CPVC WATER SUPPLY PIPING FEED PIPING UP THROUGH FLOOR SLAB FROM BELOW. CORE HOLE AND GROUT ANNULAR SPACE AROUND PIPE WITH NON-SHRINK GROUT.
4. MIXING CHAMBER. MOUNT ON END OF PUMP TABLE.
5. ¾" SCH 40 CPVC WATER SUPPLY PIPING.
6. ½" SCH 40 CPVC PHOSPHATE FEED PIPING, SEE DETAIL 1, SHEET D-6 FOR FEED PUMP AND PIPING CONFIGURATION.
7. PUMP TABLE, SEE DETAIL 1, SHEET D-6 FOR FEED PUMP AND PIPING CONFIGURATION.
8. PHOSPHATE TOTE.
9. SPILL CONTAINMENT PALLET, 365 GAL SUMP CAPACITY.
10. CORE DRILL HOLE IN FOUNDATION WALL, PROVIDE DOUBLE LINK SEAL.
11. SEE SHEET D-3 FOR PIPING CONTINUATION.
12. CORE DRILL HOLE THROUGH CONCRETE/BLOCK CERAMIC TILED WALL AT AN ELEVATION ABOVE LOCKER ROOM CEILING AND DOORWAYS. GROUT ANNULAR SPACE AROUND PIPE WITH NON-SHRINK GROUT.

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KEY PLAN

REVISIONS

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FILE LOG

Manager	SFM
Design	CFL
Draw	SAL
Check	CFL/JNN

STAMP

JEREMY N. NAKASHIMA
ENGINEER
No. 6201058535

0 4' 8'
SCALE: 1/4"=1'-0"

Project No. 130-10701-003
Date: October 16, 2015

PUMP STATION 4 PLAN -
ELEV 729.99

D-2

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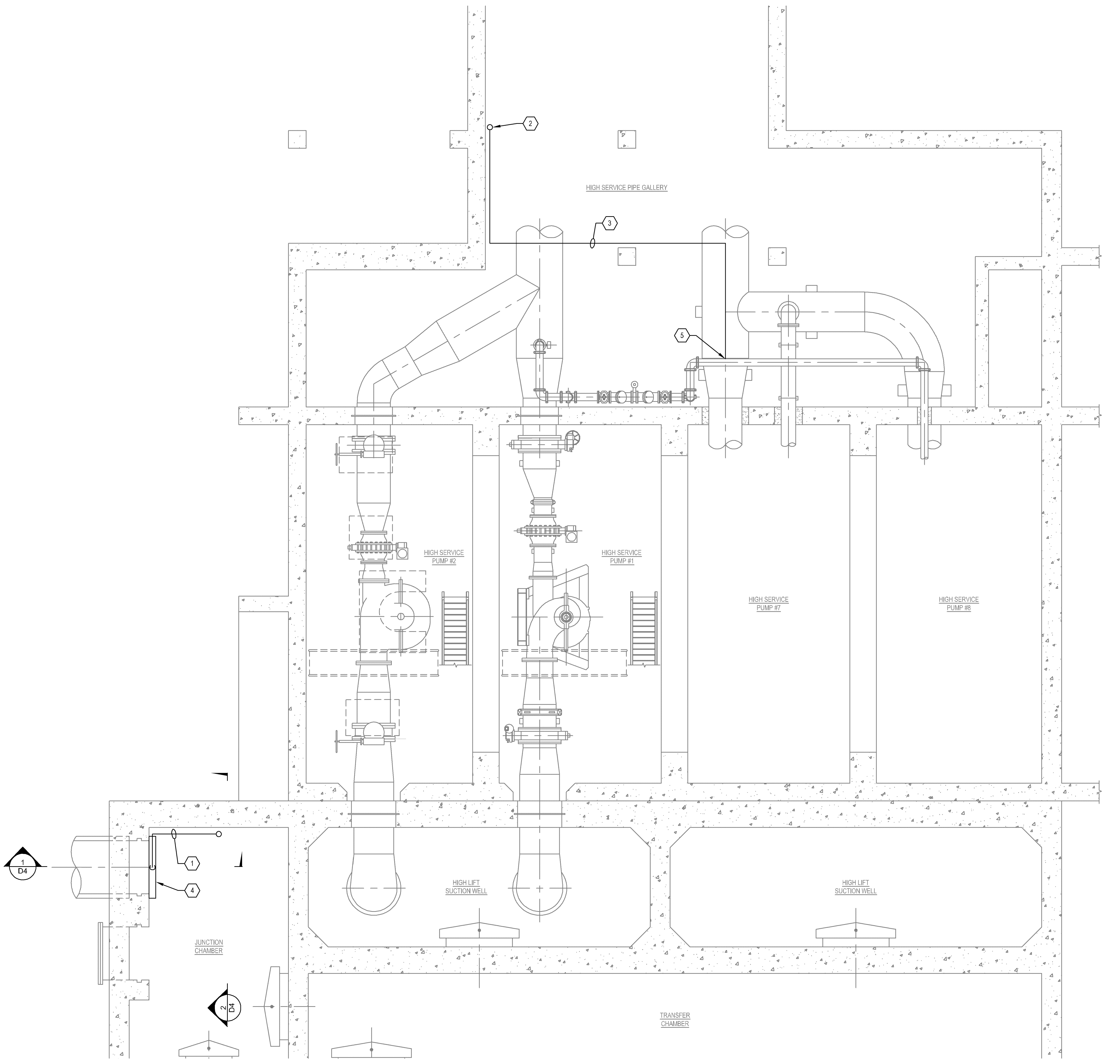

1 **PUMP STATION 4 PLAN - ELEV 704.05**

SCALE: 1/4" = 1'-0"

GENERAL NOTES:

1. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS AND ELEVATIONS.
2. DIMENSION SUBJECT TO CHANGE BASED ON FIELD MEASUREMENTS OF EXISTING CONDITIONS. CONTRACTOR SHALL MAKE CHANGES AT NO ADDITIONAL COST. SUBMIT SHOP DRAWINGS FOR APPROVAL.

KEYED NOTES:

#

1. ¾" SCH 40 CPVC SOLUTION FEED PIPING, ROUTE AND SECURE ALONG WALL.
2. ¾" SCH 40 CPVC WATER SUPPLY PIPING UP THROUGH FLOOR SLAB. CORE HOLE AND GROUT ANNULAR SPACE AROUND PIPE WITH NON-SHRINK GROUT.
3. ¾" SCH 40 CPVC WATER SUPPLY PIPING.
4. 6" x 6" x .125" FIBERGLASS ∠, MOUNT ACROSS FACE OF INLET PIPE, SECURE WITH ½" SS EXPANSION ANCHORS. SECURE ¾" CPVC PIPING TO ANGLE. PIPE SHALL PENETRATE ANGLE AT MIDPOINT. SEE SHEET D-4 FOR ADDITIONAL INFORMATION.
5. TAP EXISTING 6" WATER LINE. INSTALL CORPORATION STOP AND CONNECT TO ¾" WATER SUPPLY LINE.

Flint WTP
Phase II, Segment IV
Corrosion Control
Flint MI, 48505

1855

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KEY PLAN

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Design	CFL
Draw	SAL
Check	JNN

STAMP

JEREMY N. NAKASHIMA
ENGINEER
No. 6201058535

0 4' 8'
SCALE: 1/4"=1'-0"

Project No. 130-10701-003
Date: October 16, 2015

PUMP STATION 4 PLAN - ELEV 704.05

D-3

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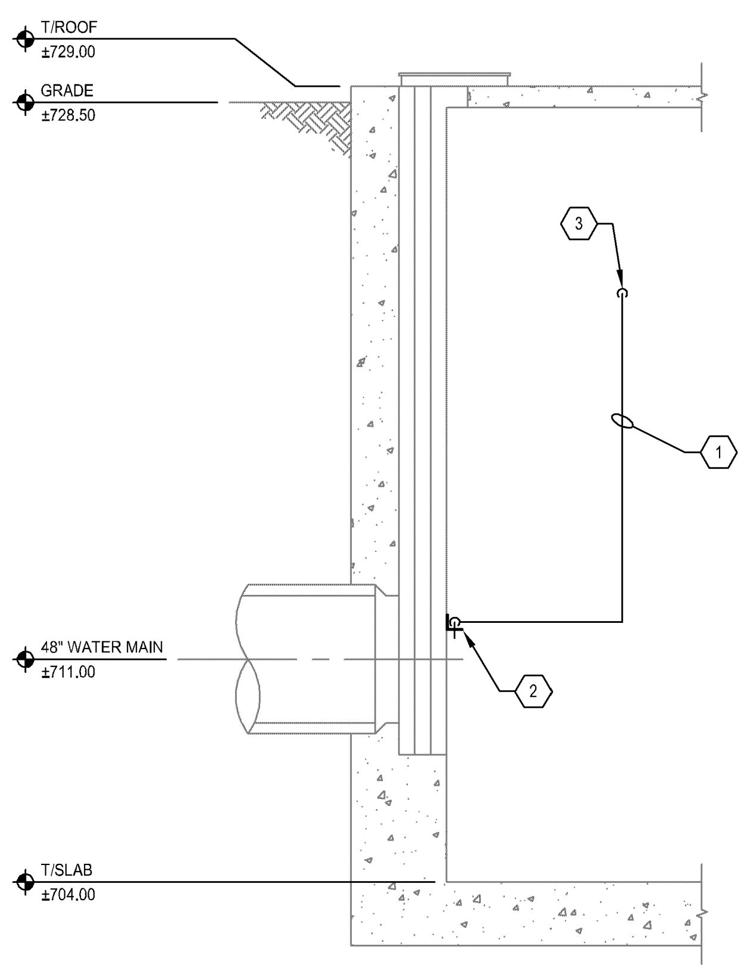
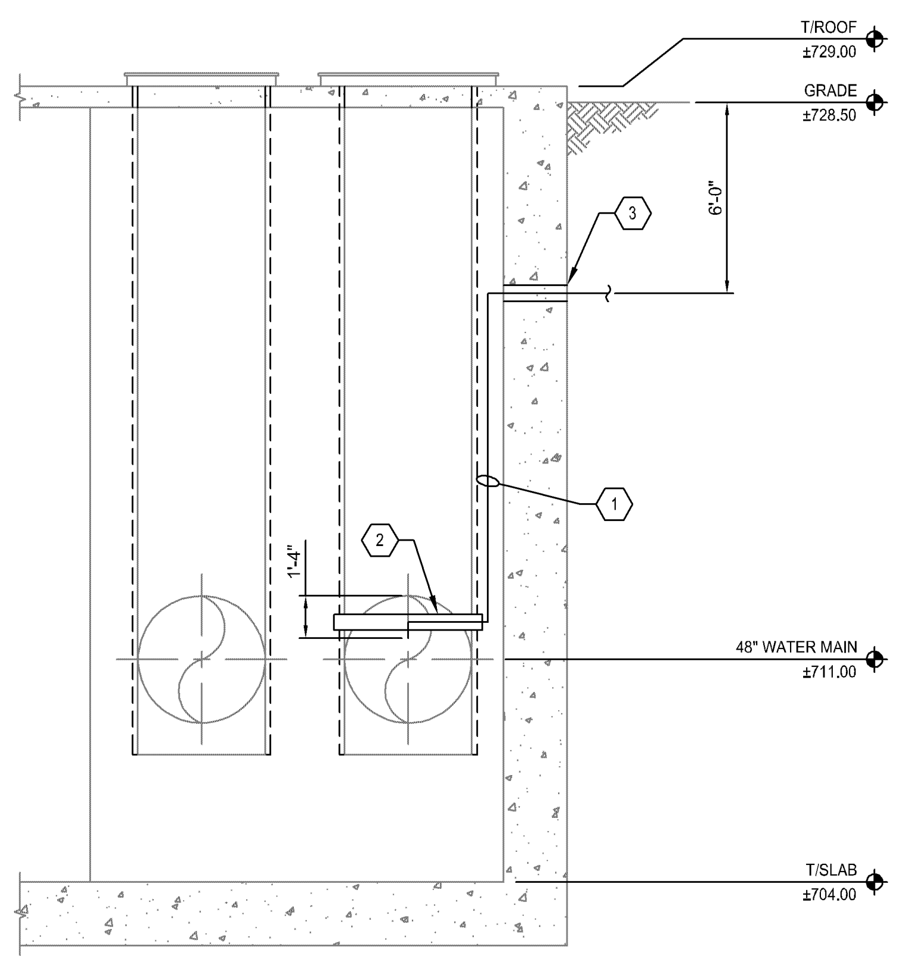
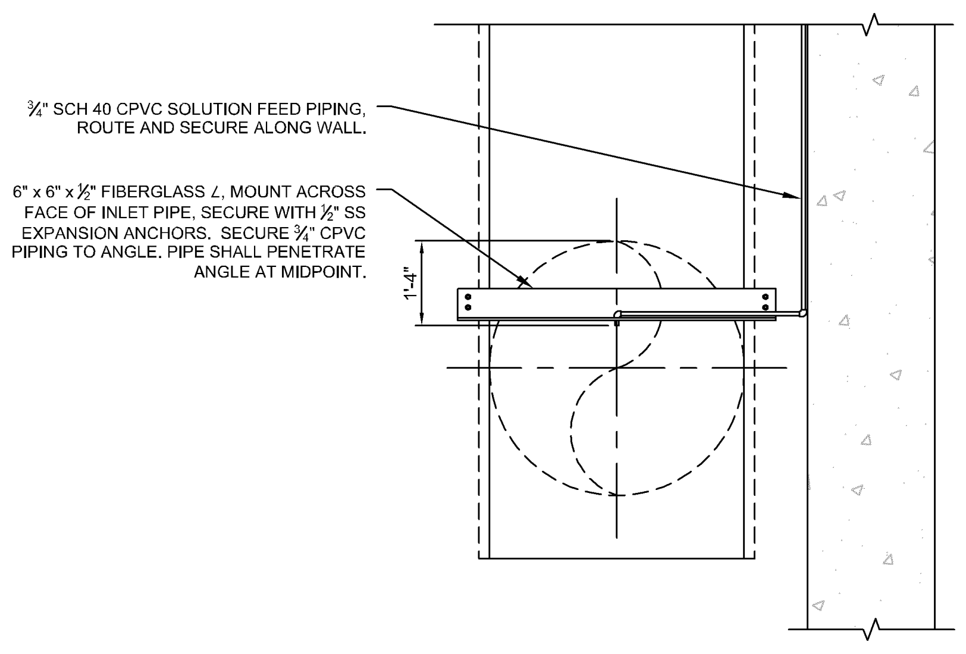


1 **JUNCTION CHAMBER SECTION**
SCALE: 1/4" = 1'-0"



2 **JUNCTION CHAMBER SECTION**
SCALE: 1/4" = 1'-0"


¾" SCH 40 CPVC SOLUTION FEED PIPING, ROUTE AND SECURE ALONG WALL.
6" x 6" x ½" FIBERGLASS ∠, MOUNT ACROSS FACE OF INLET PIPE, SECURE WITH ½" SS EXPANSION ANCHORS. SECURE ¾" CPVC PIPING TO ANGLE. PIPE SHALL PENETRATE ANGLE AT MIDPOINT.
1'-4"

3 **PHOSPHATE SOLUTION APPLICATION POINT DETAIL**
SCALE: 1/2" = 1'-0"

GENERAL NOTES:

1. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS AND ELEVATIONS.
2. DIMENSION SUBJECT TO CHANGE BASED ON FIELD MEASUREMENTS OF EXISTING CONDITIONS. CONTRACTOR SHALL MAKE CHANGES AT NO ADDITIONAL COST. SUBMIT SHOP DRAWINGS FOR APPROVAL.
3. ALL CPVC PIPE JOINTS SHALL BE SOLVENT WELD TYPE.

KEYED NOTES:

#

1. ¾" SCH 40 CPVC SOLUTION FEED PIPING, ROUTE AND SECURE ALONG WALL.
2. 6" x 6" x ½" FIBERGLASS ∠, SEE DETAIL 3, THIS SHEET FOR ADDITIONAL INFORMATION.
3. CORE DRILL HOLE IN FOUNDATION WALL, PROVIDE DOUBLE LINK SEAL.

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KEY PLAN

REVISIONS

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FILE LOG

Manager	SFM
Design	CFL
Draw	SAL
Check	JNN

STAMP

JEREMY N. NAKASHIMA
ENGINEER
No. 6201058535

0 4' 8'
SCALE: 1/4"=1'-0"

Project No. 130-10701-003
Date: October 16, 2015

PUMP STATION 4
SECTIONS AND DETAILS

D-4

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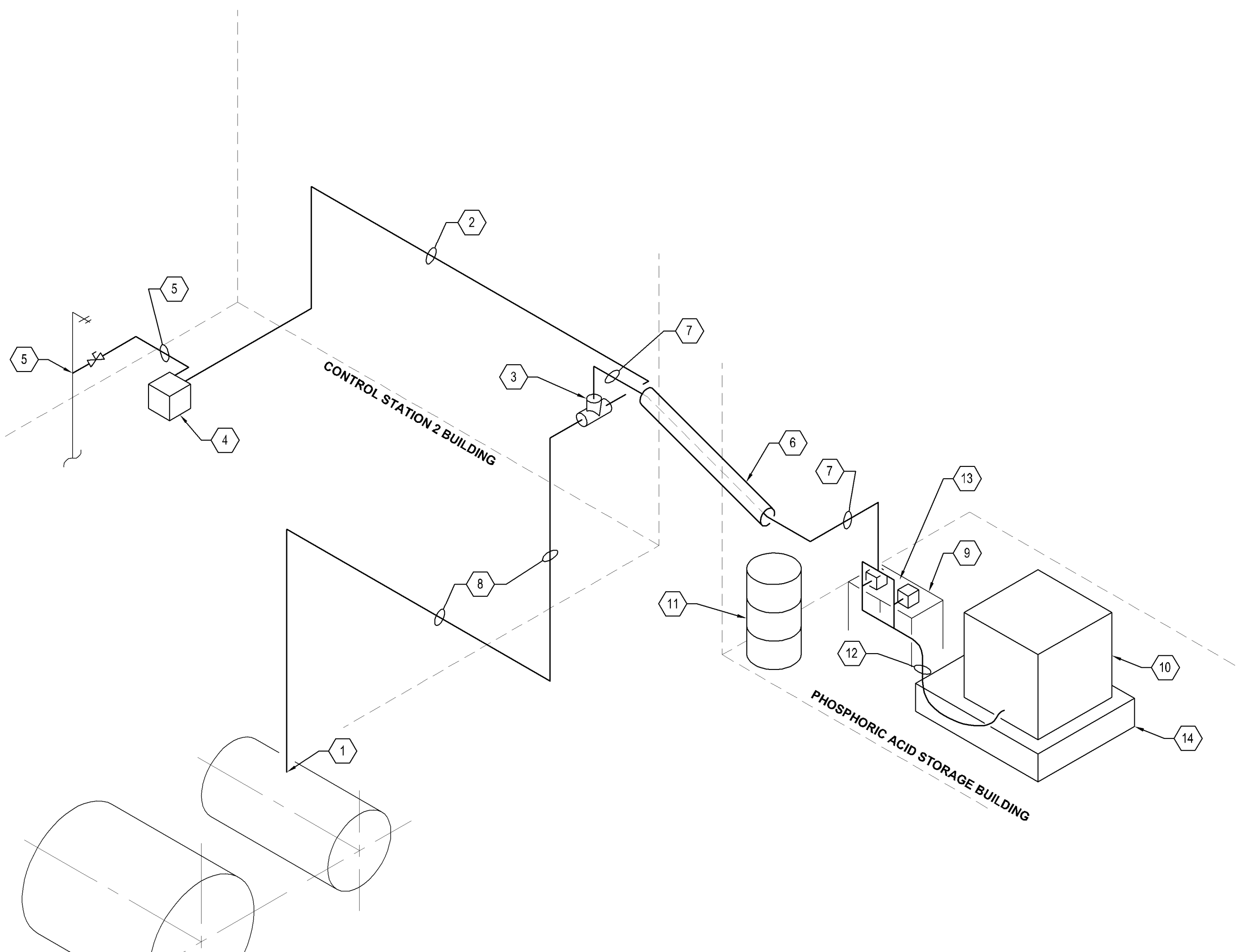
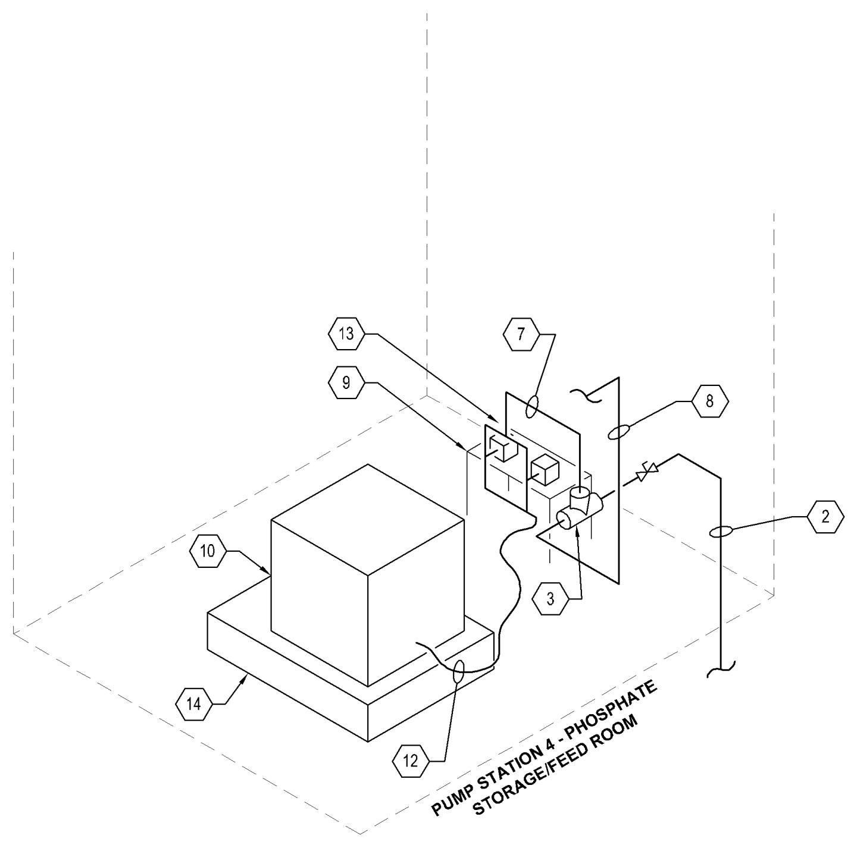


1 CS2 PHOSPHATE FEED SYSTEM SCHEMATIC

SCALE: NO SCALE



2 PUMP STATION 4 PHOSPHATE FEED SYSTEM SCHEMATIC

SCALE: NO SCALE

GENERAL NOTES:

1. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS AND ELEVATIONS.
2. DIMENSION SUBJECT TO CHANGE BASED ON FIELD MEASUREMENTS OF EXISTING CONDITIONS. CONTRACTOR SHALL MAKE CHANGES AT NO ADDITIONAL COST. SUBMIT SHOP DRAWINGS FOR APPROVAL.
3. ALL CPVC PIPE JOINTS SHALL BE SOLVENT WELD TYPE.
4. PROVIDE PIPE SUPPORTS MOUNTED OFF PUMP TABLE FOR ALL PIPING AT METERING PUMPS.

KEYED NOTES:

#

1. TAP 36" STEEL PIPE AND PROVIDE CORPORATION STOP MAIN CONNECTION. CONNECT CORPORATION STOP MAIN CONNECTION TO CPVC PIPE WITH 2 LINEAR FEET FLEXIBLE PE TUBING.
2. ¾" CPVC WATER SUPPLY PIPING.
3. MIXING CHAMBER. MOUNT BELOW EXISTING UNIT HEATER, KEEP VERTICAL PHOSPHATE FEED LINE AS SHORT AS PRACTICALLY POSSIBLE. SEE DETAIL 2, SHEET D-6.
4. BOOSTER PUMP. ½" INLET AND ½" OUTLET, $\frac{1}{25}$ HP 120V AC SINGLE PLUG, 1.3 AMP.
5. ¾" COPPER TUBING. TYPE K, HARD TEMPER TEE INTO HOSE BIBB SUPPLY LINE. PROVIDE BALL TYPE SHUT-OFF VALVE.
6. ½" SCH 40 CPVC PHOSPHATE FEED PIPING WRAPPED IN HEAT TAPE, ROUTED IN 3" SCH 80 CPVC CASING. PROVIDE DOUBLE LINK SEAL AT CASING TERMINATION WITHIN CONTROL STATION BUILDING. SLOPE CASING BACK TOWARDS PHOSPHORIC ACID STORAGE BUILDING TO OVER BARREL FILLED WITH CRUSHED LIME STONE.
7. ½" SCH 40 CPVC PHOSPHATE PIPING.
8. ¾" SCH 40 CPVC SOLUTION FEED PIPING.
9. PUMP TABLE.
10. PHOSPHATE TOTE.
11. BARREL FILLED WITH CRUSHED LIME STONE.
12. ⅜" FLEXIBLE PE TUBING.
13. METERING PUMPS ASSEMBLY, SEE DETAIL 1, SHEET D-6.
14. SPILL CONTAINMENT PALLET, 365 GAL. SUMP CAPACITY.

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KEY PLAN

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FILE LOG

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Design	CFL
Draw	SAL
Check	CFL/JNN

STAMP

STATE OF MICHIGAN
JEREMY N. NAKASHIMA
ENGINEER
No. 6201058535
LICENSED PROFESSIONAL ENGINEER

Project No. 130-10701-003
Date: October 16, 2015

PHOSPHATE FEED SYSTEM SCHEMATICS

D-5

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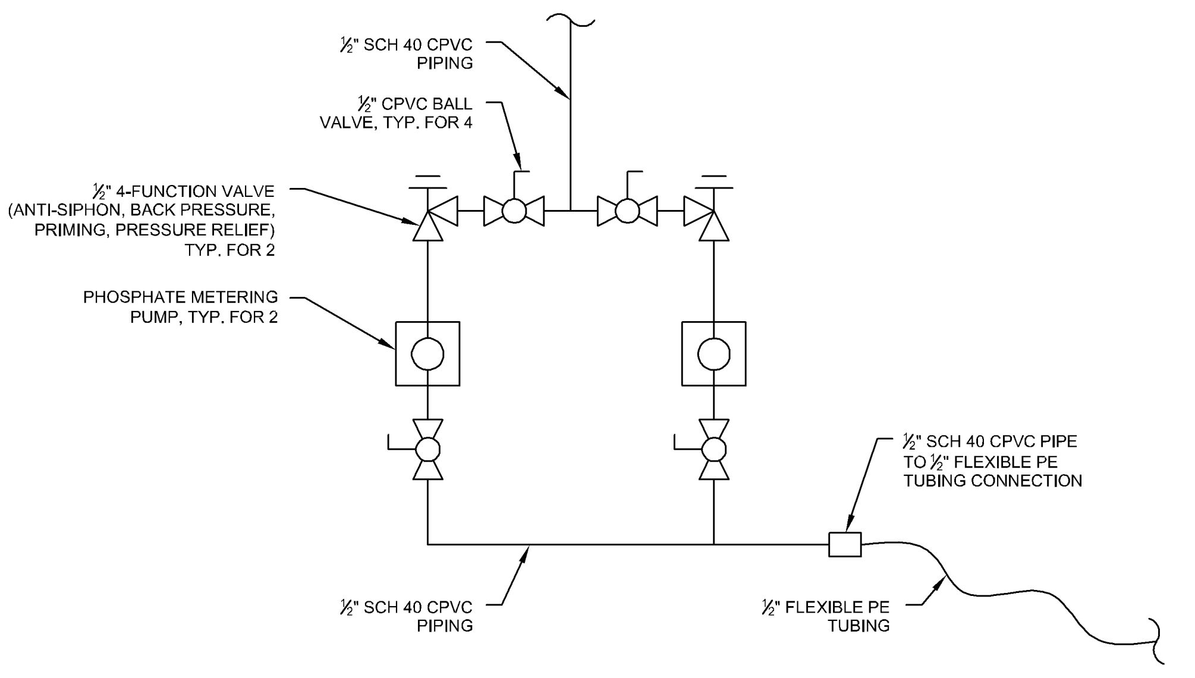
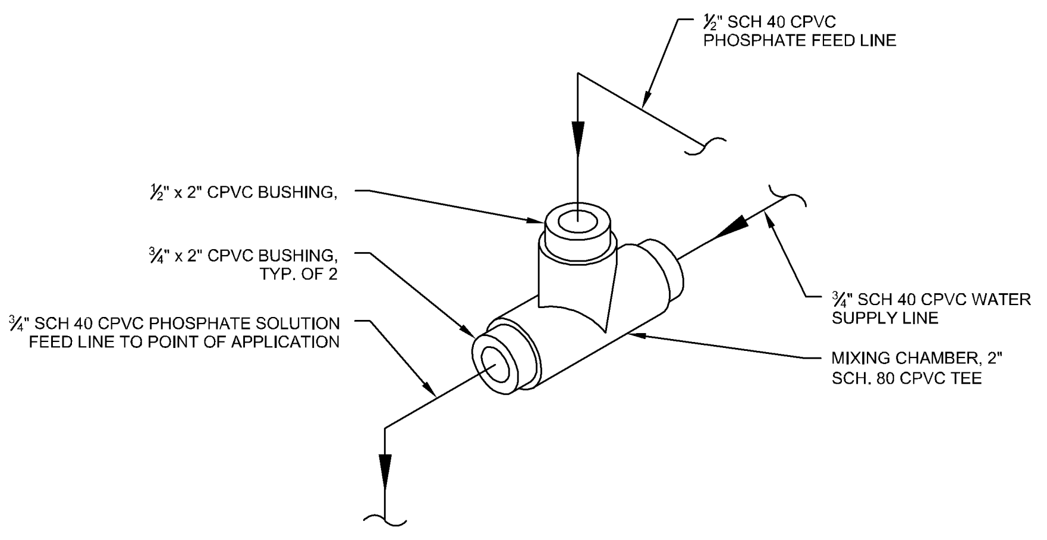

½" SCH 40 CPVC PIPING
½" CPVC BALL VALVE, TYP. FOR 4
½" 4-FUNCTION VALVE (ANTI-SIPHON, BACK PRESSURE, PRIMING, PRESSURE RELIEF) TYP. FOR 2
PHOSPHATE METERING PUMP, TYP. FOR 2
½" SCH 40 CPVC PIPE TO ½" FLEXIBLE PE TUBING CONNECTION
½" SCH 40 CPVC PIPING
½" FLEXIBLE PE TUBING

① METERING PUMPS ASSEMBLY DETAIL

SCALE: NO SCALE


½" SCH 40 CPVC PHOSPHATE FEED LINE
½" x 2" CPVC BUSHING,
¾" x 2" CPVC BUSHING, TYP. OF 2
¾" SCH 40 CPVC PHOSPHATE SOLUTION FEED LINE TO POINT OF APPLICATION
¾" SCH 40 CPVC WATER SUPPLY LINE
MIXING CHAMBER, 2" SCH. 80 CPVC TEE

② MIXING CHAMBER DETAIL

SCALE: NO SCALE

CS2 BILL OF MATERIALS

ITEM DESCRIPTION	MANUFACTURER & MODEL #	QUANTITY	COMMENTS
METERING PUMPS	LMI - AA951-92S	2	24 GPD MAX OUTPUT, 110 PSI MAX. PRESSURE, WITH 4-20 mA INPUT
BOOSTER PUMP	MCMASTER CARR #99095K51	2	HEAVY-DUTY EXTENDED-LIFE PLASTIC PUMP FOR WATER/COOLANTS, 1/25 HP, 120V AC. 6GPM @ 10 FT. HEAD 1 INSTALLED, 1 SPARE IN INVENTORY
PUMP TABLE	MCMASTER CARR #46715T17	1	GREY PAINTED STEEL TABLE 24"x36", 30"H
CORPORATION STOP MAIN CONNECTION	LMI - #49287	1	¾" NPT BRONZE CORP STOP ASSEMBLY WITH CPVC NOZZLE ASSEMBLY
¾" BRASS BALL VALVE	--	1	--
2" SCH 80 CPVC TEE	--	1	--
¾" x 2" CPVC BUSHING	--	2	--
½" x 2" CPVC BUSHING	--	1	--
½" CPVC BALL VALVE	--	4	--
4-FUNCTION VALVE	--	2	PUMP MOUNTED VALVE PROVIDING ANTI-SIPHON, BACKPRESSURE, PRIMING AND PRESSURE RELIEF FUNCTIONS
¾" COPPER PIPE AND FITTINGS	--	AS REQUIRED	TYPE K, HARD TEMPER
¾" SCH 40 CPVC PIPE AND FITTINGS	--	AS REQUIRED	--
½" SCH 40 CPVC PIPE AND FITTINGS	--	AS REQUIRED	--
3" SCH 80 CPVC PIPE	--	AS REQUIRED	--
½" FLEXIBLE POLY HOSE AND FITTINGS	--	AS REQUIRED	--
LINK SEAL	--	NO. OF SEGMENTS AS REQUIRED TO SEAL CASING PIPE	--
POLYETHYLENE BARREL	MCMASTER CARR #43235T7	--	55 GAL POLY DRUM - FILL WITH CRUSHED LIMESTONE
SPILL CONTAINMENT PALLET	ULTRA-IBC SPILLPALLET PLUS #1158	2	SPILL CONTAINMENT PALLET 365 GAL. CAPACITY 62" x 62" x 28" WITH DRAIN

PUMP STATION 4 BILL OF MATERIALS

ITEM DESCRIPTION	MANUFACTURER & MODEL #	QUANTITY	COMMENTS
METERING PUMPS	LMI - AA951-92S	2	24 GPD MAX OUTPUT, 110 PSI MAX. PRESSURE, WITH 4-20 mA INPUT
PUMP TABLE	MCMASTER CARR #46715T17	1	GREY PAINTED STEEL TABLE 24"x36", 30"H
2" SCH 80 CPVC TEE	--	1	--
¾" x 2" CPVC BUSHING	--	2	--
½" x 2" CPVC BUSHING	--	1	--
½" CPVC BALL VALVE	--	4	--
4-FUNCTION VALVE	--	2	PUMP MOUNTED VALVE PROVIDING ANTI-SIPHON, BACKPRESSURE, PRIMING AND PRESSURE RELIEF FUNCTIONS
¾" SCH 40 CPVC PIPE AND FITTINGS	--	AS REQUIRED	--
½" SCH 40 CPVC PIPE AND FITTINGS	--	AS REQUIRED	--
¾" SCH 40 CPVC PIPE AND FITTINGS	--	AS REQUIRED	--
½" SCH 40 CPVC PIPE AND FITTINGS	--	AS REQUIRED	--
½" FLEXIBLE POLY HOSE AND FITTINGS	--	AS REQUIRED	--
LINK SEAL	--	NO. OF SEGMANTS AS REQUIRED	--
SPILL CONTAINMENT PALLET	ULTRA-IBC SPILLPALLET PLUS #1158	1	SPILL CONTAINMENT PALLET 365 GAL. CAPACITY 62" x 62" x 28" WITH DRAIN

GENERAL NOTES:

1. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS AND ELEVATIONS.
2. DIMENSION SUBJECT TO CHANGE BASED ON FIELD MEASUREMENTS OF EXISTING CONDITIONS. CONTRACTOR SHALL MAKE CHANGES AT NO ADDITIONAL COST. SUBMIT SHOP DRAWINGS FOR APPROVAL.
3. ALL CPVC PIPE JOINTS SHALL BE SOLVENT WELD TYPE.
4. PROVIDE PIPE SUPPORTS MOUNTED OFF PUMP TABLE FOR ALL PIPING AT METERING PUMPS.

Flint WTP
Phase II, Segment IV
Corrosion Control
Flint MI, 48505

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& Newnam, Inc.
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KEY PLAN

REVISIONS

NO.	DESCRIPTION	DATE

FILE LOG

Manager	SFM
Design	CFL
Draw	SAL
Check	CFL/JNN

STAMP

STATE OF MICHIGAN
JEREMY N.
NAKASHIMA
ENGINEER
No.
6201058535
LICENSED PROFESSIONAL ENGINEER

Project No. 130-10701-003
Date: October 16, 2015

PHOSPHATE FEED SYSTEM DETAILS
AND BILL OF MATERIALS

D-6

ProjectWise: PW:\\LADPW.LADCO.INT:PROJECTWISE\DOCUMENTS\PROJECTS\130-10701-001\4-0-PRODUCTION\4-01-DRAWINGS\...
File: L:\130-10701-003\4-0-Production\4-01-Drawings (Phosphate Feed System)\Process\D-6.dwg Plotted: 10/16/2015 11:21 AM By: Lepore, Samuel

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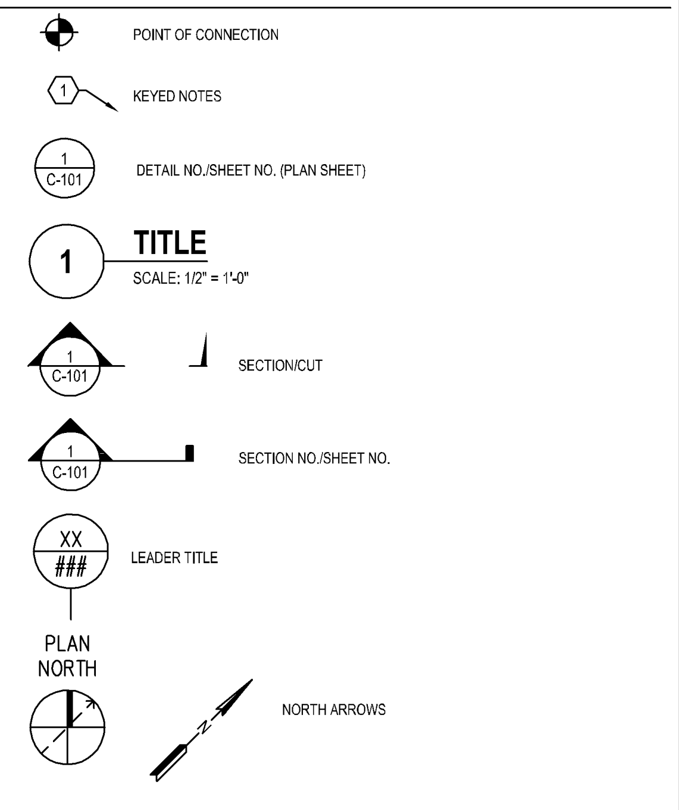
ABBREVIATIONS

A	AMMETER, AMPERE, AMBER
AF	AMPERE FRAME
AFD	ADJUSTABLE FREQUENCY DRIVE
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AS	AMMETER SWITCH, AMPERE SENSOR
ASU	AIR SUPPLY UNIT
AT	AMPERE TRIP
ATC	AUTOMATIC THROWOVER CONTROL
ATS	AUTOMATIC TRANSFER SWITCH
BC	BARE COPPER
BRKR	BREAKER
BUP	BACK UP PANEL
BV	BUTTERFLY VALVE
C	CONDUIT, CONTACTOR
CB	CIRCUIT BREAKER
CC	CONTROL CABLE
CFE	CITY FURNISHED EQUIPMENT
CKT	CIRCUIT
CP	CONTROL PANEL
CPT	CONTROL POWER TRANSFORMER
CR	CONTROL RELAY
CRE	CORROSION-RESISTANT
CRS	COATED RIGID STEEL CONDUIT
CT	CURRENT TRANSFORMER
DC	DIRECT CURRENT
DIV	DIVISION
E	EMPTY
EHH	ELECTRIC HAND HOLD
ELEC	ELECTRIC
EMH	ELECTRIC MANHOLE
EO	ELECTRIC OPERATOR
EQPT	EQUIPMENT
ESS	EMERGENCY SHUTDOWN SWITCH
ETM	ELAPSED TIME METER
EXST	EXISTING
F	FUSE
FDR	FEEDER
FIT	FLOW INDICATING TRANSMITTER
FLR	FLOOR
FLUOR	FLUORESCENT
F0	FIBER OPTIC
FVNR	FULL VOLTAGE NON-REVERSING
FVR	FULL VOLTAGE REVERSING
G	GREEN, GROUND
GALV	GALVANIZED
GFCI	GROUND FAULT CIRCUIT INTERRUPTER 5MA
GFI	GROUND FAULT INTERRUPTER-EQUIPMENT-30MA
GFR	GROUND FAULT RELAY
GND	GROUND
GV	GLOBE VALVE
H	HIGH SPEED
HH	HANDHOLE
HID	HIGH INTENSITY DISCHARGE
HPS	HIGH PRESSURE SODIUM
HS	HAND SWITCH
HSP	HIGH SERVICE PUMP
IC	INTERRUPTING CAPACITY
I & C	INSTRUMENTATION AND CONTROL
INCAND	INCANDESCENT
JB	JUNCTION BOX
L	LIGHTING CONTACTOR, LOW SPEED
LIT	LEVEL INDICATING TRANSMITTER
LN OR LIN	LIQUID NITROGEN
LOS	LOCKOUT STOP PUSH BUTTON
LOX	LIQUID OXYGEN
LR	LATCHING RELAY
LT FLEX	LIQUID TIGHT FLEX CONDUIT
LTS	LIGHTS
KV	KILOVOLT
KVA	KILOVOLT-AMPERE
M	MAGNETIC CONTACTOR COIL
MCC	MOTOR CONTROL CENTER
MCP	MAIN CONTROL PANEL
MH	MANHOLE, METAL HALIDE
MO	MOTOR OPERATOR
MS	MOTOR STARTER
MT	MOUNT
MTD	MOUNTED
MV	MEDIUM VOLTAGE
N	NEUTRAL
NA	NON-AUTOMATIC
NC	NORMALLY CLOSED
NL	NIGHT LIGHT
NO	NORMALLY OPEN
NP	NAMEPLATE
OC	ON CENTER
OL	OVERLOAD RELAY
PB	PULL BOX, PUSH BUTTON SWITCH
PC	PHOTOCELL
PH	PHASE
PIT	PRESSURE INDICATING TRANSMITTER
PMR	PHASE MONITOR RELAY
PNL	PANEL
PR	PAIR
PS	PRESSURE SWITCH
PT	POTENTIAL TRANSFORMER
PVC	POLYVINYL CHLORIDE CONDUIT
R	RED
RCPT	RECEPTACLE
RIO	REMOTE I/O
RS	RIGID STEEL CONDUIT
RT	REMOTE TELEMETRY
RVNR	REDUCED VOLTAGE NON-REVERSING
RVR	REDUCED VOLTAGE REVERSING
SA	SURGE ARRESTOR
SCCR	SHORT CIRCUIT CURRENT RATING
S/N	SOLID NEUTRAL
S.S.	STAINLESS STEEL
STP	SHIELDED TWISTED PAIR
STT	SHIELDED TWISTED TRIAD
SV	SOLENOID VALVE
SW	SWITCH
TB	TERMINAL BOARD
TC	TIME CLOSE
TDR	TIME DELAY RELAY
TIT	TEMPERATURE INDICATING TRANSMITTER
TJB	TERMINAL JUNCTION BOX
T.O.	TIME OPEN
TP	TWISTED PAIR
TS	AUTO TRANSFORMER TEMPERATURE SWITCH
TSP	TWISTED SHIELDED PAIR
TST	TWISTED SHIELDED TRIAD
TYP	TYPICAL
UH	UNIT HEATER
UON	UNLESS OTHERWISE NOTED
WP	WEATHER PROOF WHILE IN USE

DRAWING SYMBOLS



- POINT OF CONNECTION
- KEYED NOTES
- DETAIL NO./SHEET NO. (PLAN SHEET)
- TITLE SCALE: 1/2" = 1'-0"
- SECTION/CUT
- SECTION NO./SHEET NO.
- LEADER TITLE
- NORTH ARROWS

GENERAL NOTES

A. THIS SET OF ELECTRICAL DRAWINGS SHOULD ACCOMPANY A WRITTEN SET OF DIVISION SPECIFICATIONS WITH WHICH THE CONTRACTOR MUST COMPLY.

B. MAINTAIN A COMPLETE SET OF AS-BUILT DOCUMENTS THROUGHOUT CONSTRUCTION INDICATING CONDUIT ROUTING, JUNCTION BOX LOCATIONS AND ACTUAL CIRCUIT NUMBER USED AT EACH ELECTRICAL DEVICE. AS-BUILT DRAWINGS SHALL ACCURATELY REFLECT NEW AND EXISTING CONDITIONS.

C. UPON PROJECT COMPLETION PROVIDE TWO SETS OF ALL AS-BUILT DOCUMENTS (AS ELECTRONIC FORMAT AND FULL SIZE DRAWINGS) TO BUILDING ENGINEER.

D. PROVIDE ACCURATE UPDATED PANELBOARD DIRECTORIES FOR ALL AFFECTED PANELS, INDICATE NEW AND EXISTING CIRCUITS AS WELL AS SPARE CIRCUITS AND BREAKER SPACES. TURN 'OFF' ALL SPARE BREAKERS.

E. ELECTRICAL EQUIPMENT SHALL BE UL LISTED

F. NO PIPING, DUCTS, OR EQUIPMENT FOREIGN TO ELECTRICAL EQUIPMENT SHALL BE PERMITTED TO BE LOCATED WITHIN THE DEDICATED SPACE ABOVE THE ELECTRICAL EQUIPMENT.

G. PROVIDE AND MAINTAIN REQUIRED WORK SPACE, ADEQUATE ILLUMINATION, ACCESS TO WORK SPACE AND HEAD ROOM ABOUT ELECTRICAL EQUIPMENT.

H. ELECTRICAL DISTRIBUTION EQUIPMENT AND OVERCURRENT PROTECTION SYSTEM SHALL BE A FULLY RATED SYSTEM FOR SHORT CIRCUIT PROTECTION.

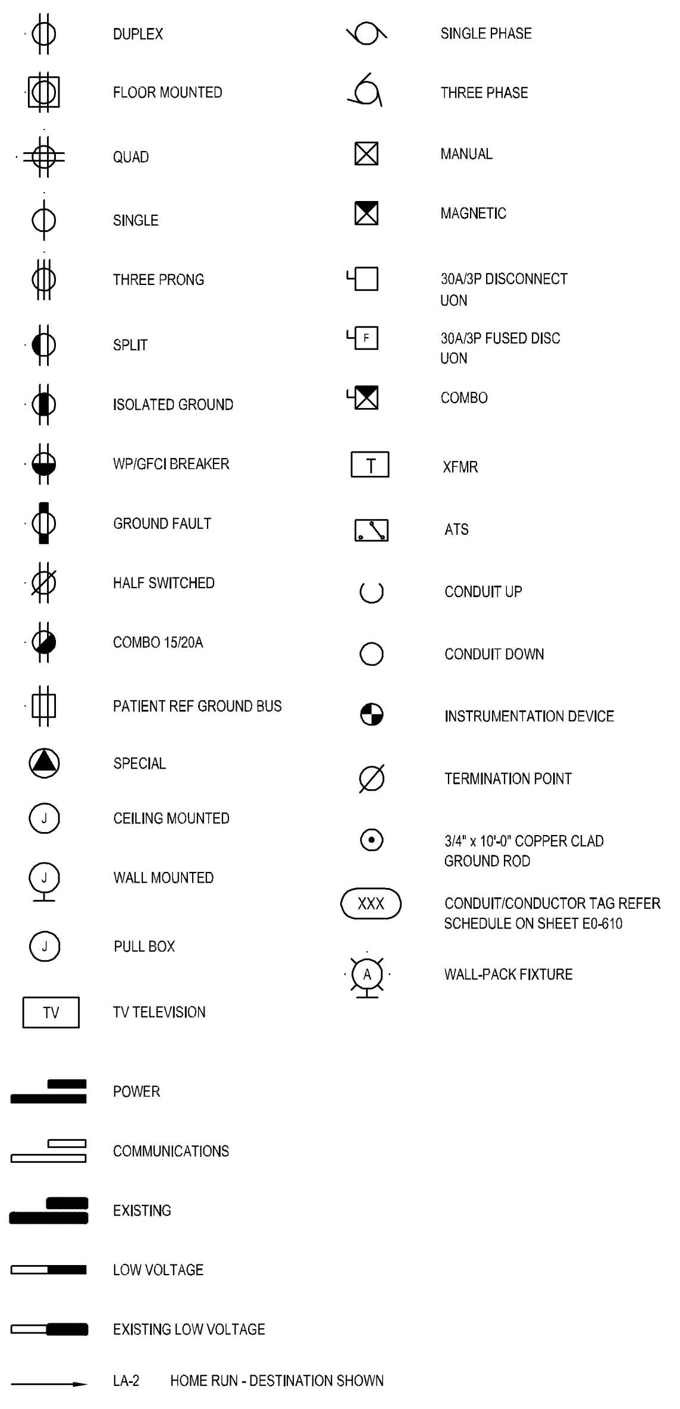
I. ALL EQUIPMENT FASTENED IN PLACE OR CONNECTED BY PERMANENT WIRING METHOD SHALL BE GROUNDED. SEE CONDUIT SCHEDULE AND ONE LINE DIAGRAM SHEETS FOR REQUIRED SIZES OF EQUIPMENT GROUNDING CONDUCTORS.

J. VERIFY ALL EXISTING FIELD CONDITIONS IN THE DEMOLITION AREAS PRIOR TO SUBMITTING A BID. INCLUDE IN THE BID THE COST OF REPLACEMENT, REPAIR, RELOCATION OR REMOVAL OF EXISTING MEP ELEMENTS AS REQUIRED TO COMPLETE INSTALLATION OF ALL SYSTEMS AS SPECIFIED, AND AS SHOWN ON THESE DRAWINGS. THE CONTRACTOR, BY SUBMITTING THEIR PROPOSAL, AGREES TO ACCEPT ALL EXISTING SITE CONDITIONS NOT SPECIFICALLY EXCEPTED. RETURN REUSABLE ITEMS REMOVED FROM THE DEMOLITION AREA TO THE OWNERS STOCK. REUSE OF ANY EXISTING ITEM ON THIS PROJECT, INCLUDING THOSE INDICATED ON THE DRAWING TO BE RELOCATED, SHALL BE APPROVED BY THE ENGINEER AND SHALL BE IN ACCORDANCE WITH ALL APPLICABLE CODES AND STANDARDS. WHERE THESE DRAWINGS CONFLICT WITH EXISTING FIELD CONDITIONS, A RECORD OF THE FIELD CONDITIONS SHALL BE MADE AVAILABLE TO THE OWNER AND ENGINEER.

K. EQUIPMENT SUPPLIED BY CONSUMERS ELECTRIC SHALL BE INSTALLED BY THE CONTRACTOR TO CONSUMER'S ELECTRIC'S STANDARDS AND AVAILABLE FOR INSPECTION.

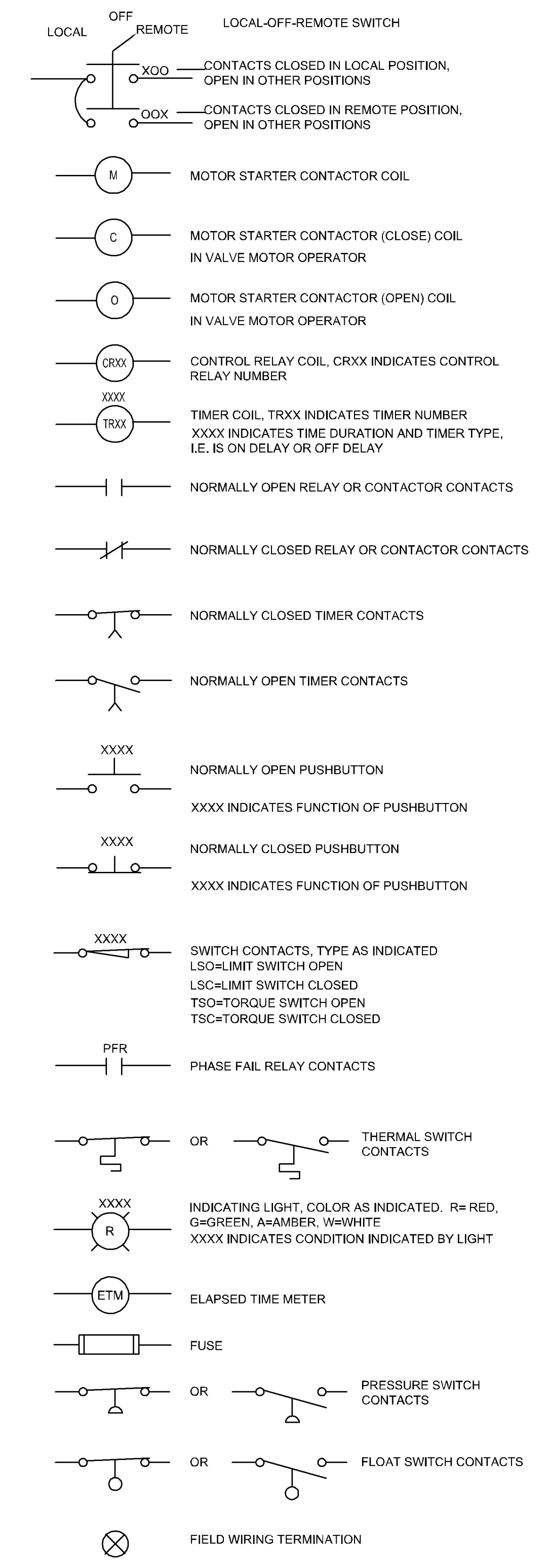
L. PROVIDE ARC FLASH LABELS TO THE PROPOSED EQUIPMENT PER THE CITY FURNISHED ELECTRICAL ELECTRONIC TEMPLATE. PROVIDE A DURABLE VINYL LABEL THAT RESISTS UV, MOISTURE, ABRASION AND IS SUITABLE TO THE APPLICATION IN A WATER TREATMENT PLANT, DURALABEL TORO PREMIUM VINYL TAPE OR APPROVED EQUAL.

POWER PLAN SYMBOLS



- DUPLEX
- FLOOR MOUNTED
- QUAD
- SINGLE
- THREE PRONG
- SPLIT
- ISOLATED GROUND
- WP/GFCI BREAKER
- GROUND FAULT
- HALF SWITCHED
- COMBO 15/20A
- PATIENT REF GROUND BUS
- SPECIAL
- CEILING MOUNTED
- WALL MOUNTED
- PULL BOX
- TV TELEVISION
- POWER
- COMMUNICATIONS
- EXISTING
- LOW VOLTAGE
- EXISTING LOW VOLTAGE
- LA-2 HOME RUN - DESTINATION SHOWN
- SINGLE PHASE
- THREE PHASE
- MANUAL
- MAGNETIC
- 30A/3P DISCONNECT UON
- 30A/3P FUSED DISC UON
- COMBO
- XFMR
- ATS
- CONDUIT UP
- CONDUIT DOWN
- INSTRUMENTATION DEVICE
- TERMINATION POINT
- 3/4" x 10'-0" COPPER CLAD GROUND ROD
- CONDUIT/CONDUCTOR TAG REFER SCHEDULE ON SHEET E0-610
- WALL-PACK FIXTURE

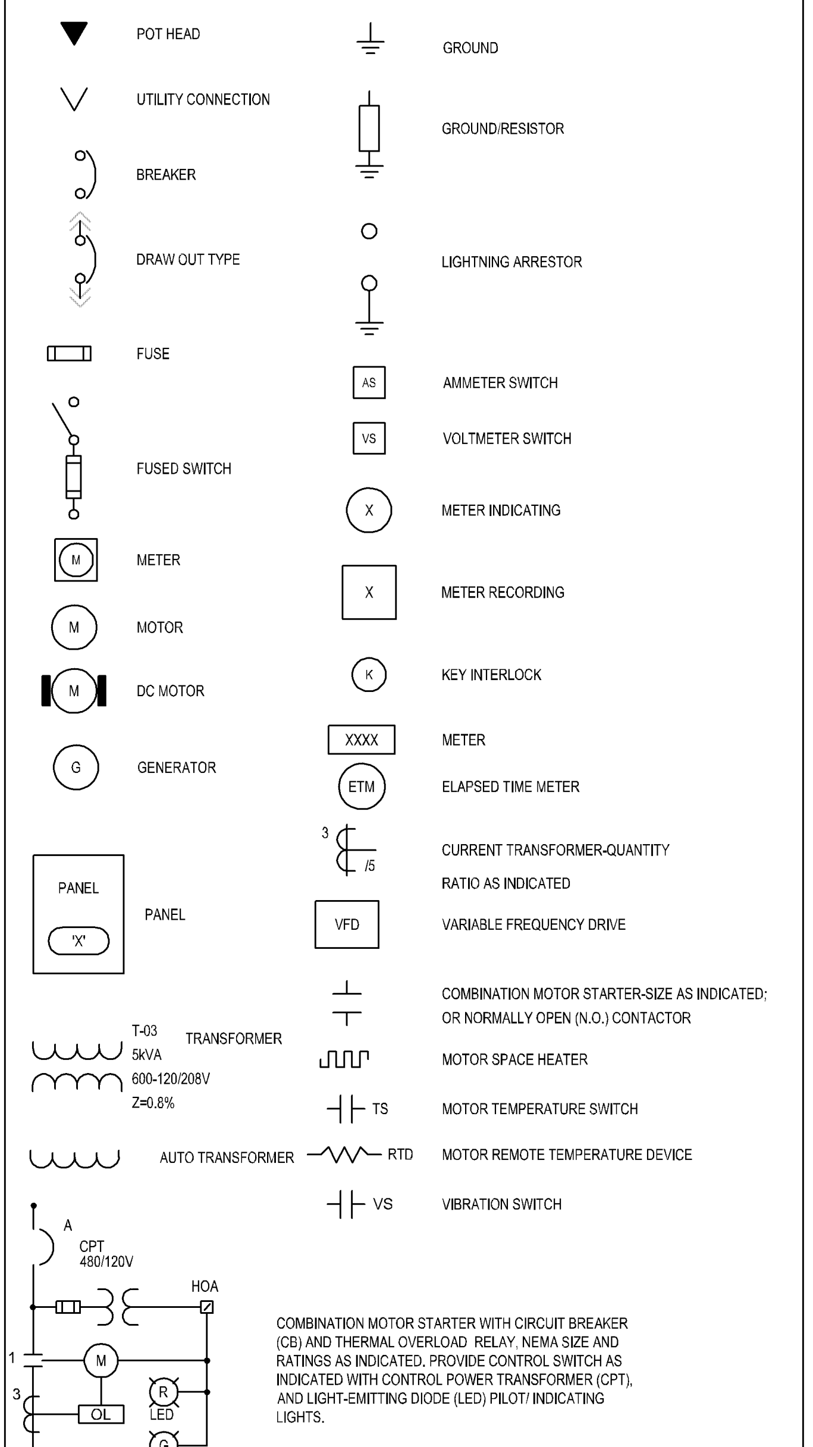
CONTROL SCHEMATIC SYMBOLS



- LOCAL-OFF-REMOTE SWITCH
- CONTACTS CLOSED IN LOCAL POSITION, OPEN IN OTHER POSITIONS
- CONTACTS CLOSED IN REMOTE POSITION, OPEN IN OTHER POSITIONS
- MOTOR STARTER CONTACTOR COIL
- MOTOR STARTER CONTACTOR (CLOSE) COIL IN VALVE MOTOR OPERATOR
- MOTOR STARTER CONTACTOR (OPEN) COIL IN VALVE MOTOR OPERATOR
- CONTROL RELAY COIL, CRXX INDICATES CONTROL RELAY NUMBER
- TIMER COIL, TRXX INDICATES TIMER NUMBER XXXX INDICATES TIME DURATION AND TIMER TYPE, I.E. IS ON DELAY OR OFF DELAY
- NORMALLY OPEN RELAY OR CONTACTOR CONTACTS
- NORMALLY CLOSED RELAY OR CONTACTOR CONTACTS
- NORMALLY CLOSED TIMER CONTACTS
- NORMALLY OPEN TIMER CONTACTS
- NORMALLY OPEN PUSHBUTTON
  XXXX INDICATES FUNCTION OF PUSHBUTTON
- NORMALLY CLOSED PUSHBUTTON
  XXXX INDICATES FUNCTION OF PUSHBUTTON
- SWITCH CONTACTS, TYPE AS INDICATED
  LSO=LIMIT SWITCH OPEN
  LSC=LIMIT SWITCH CLOSED
  TSO=TORQUE SWITCH OPEN
  TSC=TORQUE SWITCH CLOSED
- PHASE FAIL RELAY CONTACTS
- THERMAL SWITCH CONTACTS
- INDICATING LIGHT, COLOR AS INDICATED. R= RED, G=GREEN, A=AMBER, W=WHITE
  XXXX INDICATES CONDITION INDICATED BY LIGHT
- ELAPSED TIME METER
- FUSE
- PRESSURE SWITCH CONTACTS
- FLOAT SWITCH CONTACTS
- FIELD WIRING TERMINATION

NOT ALL SYMBOLS ARE USED ON THIS PROJECT

ONE-LINE DIAGRAM SYMBOLS



- POT HEAD
- UTILITY CONNECTION
- BREAKER
- DRAW OUT TYPE
- FUSE
- FUSED SWITCH
- METER
- MOTOR
- DC MOTOR
- GENERATOR
- PANEL
- TRANSFORMER
- AUTO TRANSFORMER
- GROUND
- GROUND/RESISTOR
- LIGHTNING ARRESTOR
- AMMETER SWITCH
- VOLTMETER SWITCH
- METER INDICATING
- METER RECORDING
- KEY INTERLOCK
- METER
- ELAPSED TIME METER
- CURRENT TRANSFORMER-QUANTITY RATIO AS INDICATED
- VARIABLE FREQUENCY DRIVE
- COMBINATION MOTOR STARTER-SIZE AS INDICATED; OR NORMALLY OPEN (N.O.) CONTACTOR
- MOTOR SPACE HEATER
- MOTOR TEMPERATURE SWITCH
- MOTOR REMOTE TEMPERATURE DEVICE
- VIBRATION SWITCH

COMBINATION MOTOR STARTER WITH CIRCUIT BREAKER (CB) AND THERMAL OVERLOAD RELAY, NEMA SIZE AND RATINGS AS INDICATED. PROVIDE CONTROL SWITCH AS INDICATED WITH CONTROL POWER TRANSFORMER (CPT), AND LIGHT-EMITTING DIODE (LED) PILOT/ INDICATING LIGHTS.

Flint WTP
Phase II, Segment IV
Corrosion Control

Flint MI, 48505

1855

Lockwood, Andrews & Newnam, Inc.
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KEY PLAN

REVISIONS

NO.	DESCRIPTION	DATE

FILE LOG

Manager	SFM
Design	JPD
Draw	SAL
Check	JNN

STAMP

JEREMY N. NAKASHIMA
ENGINEER
No.
6201058535

Project No. 130-10701-003
Date: October 16, 2015

ELECTRICAL SYMBOLS AND ABBREVIATIONS

E-0

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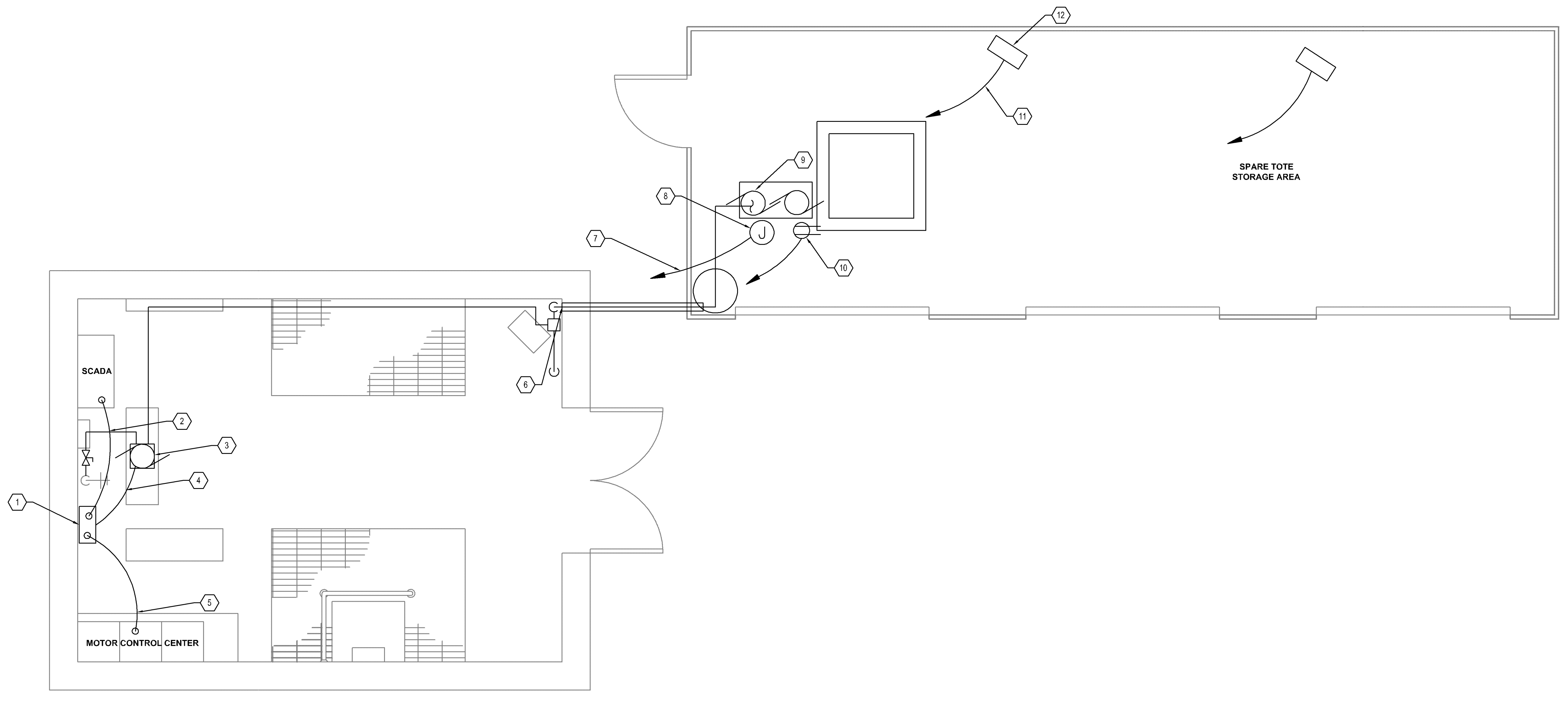
File: L:\130-10701-003\4-0-Production\4-01-Drawings (Phosphate Feed System)\Electrical\E-0.dwg Plotted:10/16/2015 11:21 AM By:Lepore, Samuel

GENERAL NOTES:

1. ALL ELECTRICAL WORK SHALL BE IN ACCORDANCE WITH NEC 2014 AND LOCAL CODES.
2. ALL CONDUIT SHALL BE GALVANIZED RIGID CONDUIT OR LIQUIDTIGHT FLEXIBLE CONDUIT AS NOTED.
3. ALL WIRING SHALL BE TYPE THHN, OR EQUAL.
4. ALL ELECTRICAL BOXES SHALL BE 304 STAINLESS STEEL, NEMA 4X.

KEYED NOTES:

1. PROVIDE S.S. NEMA 4X LOCAL CONTROL PANEL FOR BOOSTER PUMP WITH H-O-A SWITCH. BOOSTER PUMP TO RUN IN HAND POSITION, AND IN AUTO POSITION, START BY REMOTE CONTACT CLOSURE FROM SCADA PANEL.
2. PROVIDE 2#12 & 1#12 GRND (PUMP RUN SIGNAL) IN $\frac{3}{4}$" RGS CONDUIT FROM SCADA PANEL TO BOOSTER PUMP CONTROL PANEL.
3. PROPOSED 120 V BOOSTER PUMP.
4. PROVIDE 2#12 & 1#12 GRND IN $\frac{3}{4}$" LIQUIDTIGHT FLEXIBLE CONDUIT FROM BOOSTER CONTROL PANEL TO BOOSTER PUMP.
5. PROVIDE 2#12 & 1#12 GRND IN $\frac{3}{4}$" RGS CONDUIT FROM BOOSTER CONTROL PANEL TO EXISTING LIGHTING PANEL LOCATED IN ADJACENT MOTOR CONTROL CENTER.
6. PLUG IN HEAT TAPE FOR EXTERNAL SCHEDULE 80 PIPING INTO LOCAL EXISTING 120 V RECEPTACLE.
7. PROVIDE 1" RGS CONDUIT WITH 2-PR #18 TSP (FLOW PACE SIGNAL) AND 12#14, 1#12 GRND (RUN COMMAND, FAIL SIGNAL, FLOW PULSE) FOR EACH METERING PUMP TO SCADA PANEL.
8. PROVIDE LOCAL JUNCTION BOX TO CONNECT EACH METERING PUMP WITH $\frac{3}{4}$" LIQUIDTIGHT FLEXIBLE CONDUIT AND ASSOCIATED WIRING.
9. PROPOSED 120 VOLT CHEMICAL METERING PUMP (TYP 0F TWO).
10. PROVIDE LOCAL DUPLEX RECEPTACLE FOR POWER TO METERING PUMPS. PROVIDE 2#12 & 1#12 GRND IN $\frac{3}{4}$" RGS CONDUIT TO EXISTING LIGHTING PANEL LOCATED IN MOTOR CONTROL CENTER.
11. PROVIDE 3#10 & 1#12 GRND IN $\frac{3}{4}$" RGS CONDUIT FROM CIRCUIT BREAKER IN MOTOR CONTROL CENTER TO PROPOSED UNIT ELECTRIC HEATER (TYPICAL OF TWO).
12. PROVIDE 480V - 3 PHASE UNIT ELECTRIC HEATERS WITH INTEGRAL THERMOSTAT (TYPICAL OF TWO). UNIT ELECTRIC HEATERS TO BE 10 KW, DAYTON HEAVY-DUTY MODEL 2YU70, WITH VERTICAL MOUNTING BRACKET, OR EQUAL. MOUNT UNIT HEATERS FROM EXISTING CEILING BEAMS.



1 **CONTROL STATION ELECTRICAL PLAN**
SCALE: 3/8" = 1'-0"

Flint WTP
Phase II, Segment IV
Corrosion Control
Flint MI, 48505

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KEY PLAN

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FILE LOG

Manager	SFM
Design	JPD
Draw	SAL
Check	JNN

STAMP

JEREMY N. NAKASHIMA
No. 6201058535

0 2' 4' 6'
SCALE: 3/8"=1'-0"

Project No. 130-10701-003
Date: October 16, 2015

CONTROL STATION 2 -
ELECTRICAL PLAN

E-1

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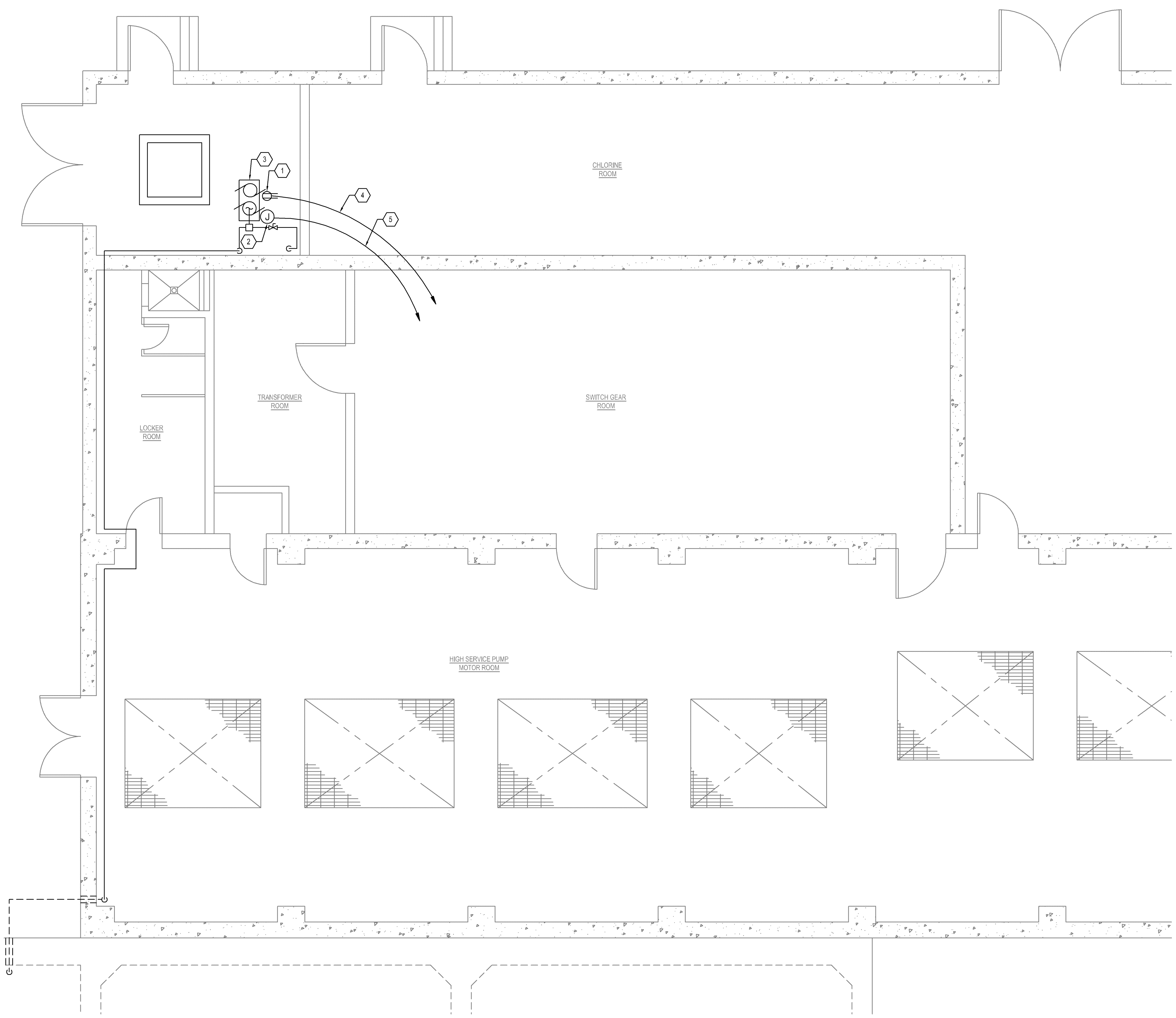

1 PUMP STATION ELECTRICAL PLAN - ELEV 729.99

SCALE: 1/4" = 1'-0"

GENERAL NOTES:

1. ALL ELECTRICAL WORK SHALL BE IN ACCORDANCE WITH NEC 2014 AND LOCAL CODES.
2. ALL CONDUIT SHALL BE GALVANIZED RIGID CONDUIT OR LIQUIDTIGHT FLEXIBLE CONDUIT AS REQUIRED.
3. ALL WIRING SHALL BE TYPE THHN, OR EQUAL.
4. ALL ELECTRICAL BOXES SHALL BE 304 STAINLESS STEEL, NEMA 4X.

KEYED NOTES:

#

1. PROVIDE LOCAL DUPLEX RECEPTACLE FOR POWER TO METERING PUMPS.
2. PROVIDE LOCAL JUNCTION BOX TO CONNECT EACH METERING PUMP WITH $\frac{3}{4}$" LIQUIDTIGHT FLEXIBLE CONDUIT AND ASSOCIATED WIRING.
3. PROPOSED CHEMICAL METERING PUMP (TYPICAL OF TWO).
4. PROVIDE 2#12 & 1#12 GRND IN $\frac{3}{4}$" RGS CONDUIT TO EXISTING LIGHTING PANEL LOCATED IN SWITCHGEAR ROOM.
5. PROVIDE 1" RGS CONDUIT WITH 2-PR #18 TSP (FLOW PACE SIGNAL) AND 12#14, 1#12 GRND (RUN COMMAND, FAIL SIGNAL, FLOW PULSE) FOR EACH METERING PUMP TO SCADA PANEL LOCATED IN SWITCHGEAR ROOM.

Flint WTP
Phase II, Segment IV
Corrosion Control
Flint MI, 48505

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KEY PLAN

REVISIONS

NO.	DESCRIPTION	DATE

FILE LOG

Manager	SFM
Design	CFL
Draw	SAL
Check	JNN

STAMP

JEREMY N. NAKASHIMA
ENGINEER
No. 6201058535

0 4' 8'
SCALE: 1/4"=1'-0"

Project No. 130-10701-003
Date: October 16, 2015

PUMP STATION 4
ELECTRICAL PLAN - ELEV 729.99

E-2

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To: Busch, Stephen (DEQ)[BUSCHS@michigan.gov]
From: Prysby, Mike (DEQ)
Sent: Tue 10/20/2015 6:31:30 PM
Subject: Preliminary and Deliberative: FW: Flint Corrosion Control Plans and MDEQ Preliminary Comments.pdf
Flint Phosphate Calculations.pdf
MDEQ Preliminary Comments with replies (2).pdf
IBC tote scale with containment.pdf

Samir's response to our comments…

Michael Prysby, P.E.

District Engineer

Office of Drinking Water and Municipal Assistance

517 290-8817

From: Matta, Samir [mailto:SFMatta@lan-inc.com]
Sent: Monday, October 19, 2015 3:11 PM
To: Prysby, Mike (DEQ)
Subject: Flint Corrosion Control Plans and MDEQ Preliminary Comments.pdf

Hi Mike,

Please see attached for your file and use. Let me know if the information satisfy your needs and whether you have additional information that you would like us to have answered.

Thanks.

Samir F. Matta, PE

Team Leader

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Flint Phosphate Calculations

Chemical will be 75% NSF certified Phosphoric acid

75% acid has a density of 13.17 #/gal. (5,974 g/gal) 13.17×453.5923

Of this 75% is Phosphoric acid (H_3PO_4) = 4,480 g H_3PO_4/gal 5,974 × 0.75

Molecular weight of H_3PO_4 is 97.9913 g/mole

Moles H_3PO_4 / gal = 45.72 4,480/97.9913

Moles H_3PO_4 = Moles Orthophosphate (PO_4^{-3}) = Moles Phosphorus (P)

Species	Molecular Wt.	Moles / gal	g/gal
H_3PO_4	97.9913	45.72	4,480
PO_4^{-3}	94.9676	45.72	4341.92
P	30.97	45.72	1407.72

Proposed Operating Parameters

	Plant Flow	Dosage as PO_4^{-3}	Dosage as P*
Maximum	25 MGD	1.5 mg/l	0.47 mg/l
Average	16 MGD	0.8 mg/l	0.25 mg/l
Minimum	4 MGD	0.4 mg/	0.13 mg/l

*Equivalent dosage to PO_4^{-3} dosage

Feed Rate Calculations

Maximum feed rate (Max Flow × Max Dosage)

25 MGD × 3782 g/gal H_2O × 1.5 ppm / 4,341.92 g/gal = 32.66 gpd Phosphoric Acid

Average feed rate (Avg Flow × Avg Dosage)

16 MGD × 3782 g/gal H_2O × 0.8 ppm / 4,341.92 g/gal = 11.15 gpd Phosphoric Acid

Minimum feed rate (Min Flow × Min Dosage)

4 MGD × 3782 g/gal H_2O × 0.4 ppm / 4,341.92 g/gal = 1.39 gpd Phosphoric Acid

411 BULLETIN

IBC TOTE SCALE

FOR CHEMICAL IBC TOTES

Safely track chemical usage and tank levels

Warn of dangerous over and under-feed conditions

Prevent system from running empty

4-20mA remote monitoring reduces operator exposure to chemicals

NO FINGER POINTING.
NO FINE PRINT.™
PERFORMANCE GUARANTEED 5 YEAR WARRANTY™

Strict federal and state reporting requirements have created a need for water and wastewater plant operators to easily and accurately track chemical feed rates and usages. The IBC Tote Scale gives you this information along with the assurance that your chemical supply will not unexpectedly run out.

The heavy duty steel platform is protected with our advanced 80 mil thick TUF-COAT™ Environmental Armor. Tuf-Coat is highly resistant to chemicals, abrasion, impact and ultraviolet light degradation making the IBC Tote Scale ideal for even the harshest environments. Options include 316 stainless steel and MaxSense™ high accuracy models.

The IBC Tote Scale utilizes weighing technology to create a highly reliable, non-contacting chemical monitoring system that avoids problems other sensor technologies face caused by irregular tank shapes, corrosive chemical fumes, fluctuating temperatures and changes in specific gravity.

IBC Tote Scale
with integral containment option

FORCE FLOW

411 BULLETIN

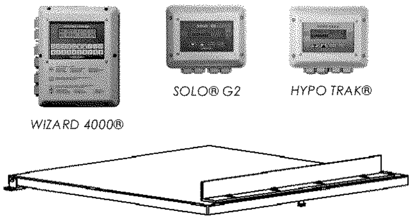
IBC TOTE SCALE

MODELS AND ORDERING INFORMATION

IBC Tote Scales do not include weight indicating instrument. Select from the following: Wizard 4000® Advanced Digital Display (Bulletin 518), the SOLO® G2 Digital Weight Display (Bulletin 516), the SOLO XT® Hydraulic Digital Display (Bulletin 514), the Century Hydraulic dial (Bulletin 519)or Hypo Track® (Bulletin 517). Please order indicator separately.

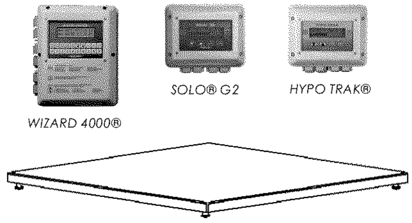
ELECTRONIC **- Single Load Cell Platform** (Includes platform with backstop and electronic load cell with 20 ft. cable. Lengths up to 100 ft. available; request when ordering.)

MODEL	MATERIAL	X	Y	Z	H	ACCURACY
54-DR××TB	TUF-COAT® STEEL	54"	54"	58"	3.25"	1/4 of 1% FS
54-DR××TBS	316 STAINLESS STEEL	54"	54"	58"	3.25"	1/4 of 1% FS
60-DR××TB	TUF-COAT® STEEL	60"	60"	64"	3.25"	1/4 of 1% FS
60-DR××TBS	316 STAINLESS STEEL	60"	60"	64"	3.25"	1/4 of 1% FS



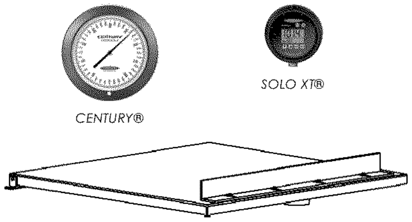
ELECTRONIC **- Hi Accuracy 4-Load Cell Platform** (Includes platform and (4) electronic load cells with 20 ft. of cable. Lengths up to 100 ft. available; request at time of purchase. Backstop not included or necessary on these models but available upon special request.)

MODEL	MATERIAL	X	Y	Z	H	ACCURACY
54-DR××TB-HA4	TUF-COAT® STEEL	54"	54"	N/A	3.25"	1/10 of 1% FS
54-DR××TBS-HA4	316 STAINLESS STEEL	54"	54"	N/A	3.25"	1/10 of 1% FS
60-DR××TB-HA4	TUF-COAT® STEEL	60"	60"	N/A	3.25"	1/10 of 1% FS
60-DR××TBS-HA4	316 STAINLESS STEEL	60"	60"	N/A	3.25"	1/10 of 1% FS

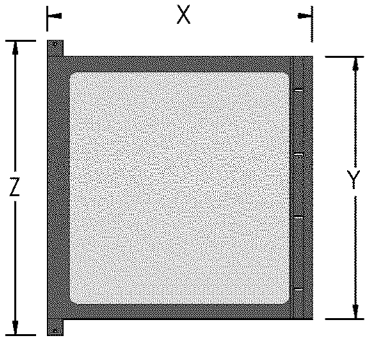


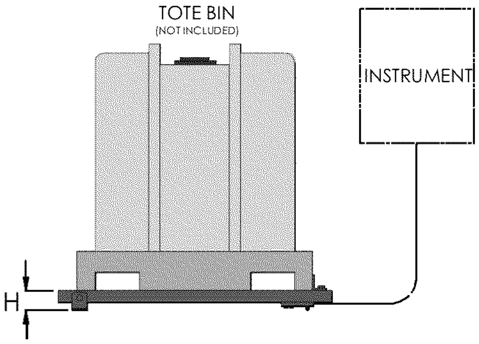
HYDRAULIC **- Single Load Cell Platform** (Includes platform with backstop, and hydraulic load cell with 12 ft. Hose and quick connect. Hose/tubing lengths up to 100 ft. available to allow remote mounting of indicator; request at time of purchase.)

MODEL	MATERIAL	X	Y	Z	H	ACCURACY
54-HY××TB	TUF-COAT® STEEL	54"	54"	58"	3.25"	1/2 of 1% FS
54-HY××TBS	316 STAINLESS STEEL	54"	54"	58"	3.25"	1/2 of 1% FS
60-HY××TB	TUF-COAT® STEEL	60"	60"	64"	3.25"	1/2 of 1% FS
60-HY××TBS	316 STAINLESS STEEL	60"	60"	64"	3.25"	1/2 of 1% FS



×× = CAPACITY: 1000 lbs = "10", 2000 lbs = "20", 3000 lbs = "30", 4000 lbs = "40", 5000 lbs = "50"





SPECIFYING GUIDELINES:

A. For maximum accuracy, size scale capacity to match the gross weight (chemical plus tote tare weight).

B. Tote size should not exceed platform size.

C. Supply connections must be flexible and preferably connected to tote over pivoted side of platform.

Please visit www.forceflow.com for drawings, engineered specifications and manuals.

FORCE FLOW

2430 Stanwell Drive, Concord, CA 94520 USA 925-686-6700 Fax: 925-686-6713 | info@forceflow.com | www.forceflow.com

MODEL NUMBERS (for Load Cell & Platform)

60-DR30TC-HA4	(3,000 Lbs.)	60" x 60" x 3.25"
60-DR40TC-HA4	(4,000 Lbs.)	60" x 60" x 3.25"
60-DR50TC-HA4	(5,000 Lbs.)	60" x 60" x 3.25"
60-DR60TC-HA4	(6,000 Lbs.)	60" x 60" x 3.25"

For Stainless Steel platform, as "S" after "TC", i.e. 60-DR30TCS-HA4.
For other capacities and platform sizes, consult factory.

MODEL NUMBER (for SOLO 1000 Indicator)

SR-1000-1	1-Channel SOLO 1000 Indicator
SR-1000-2	2-Channel SOLO 1000 Indicator

MODEL NUMBER (Containment Unit)

PAK467	400 gal. NEW PIG Poly IBC Containment Unit

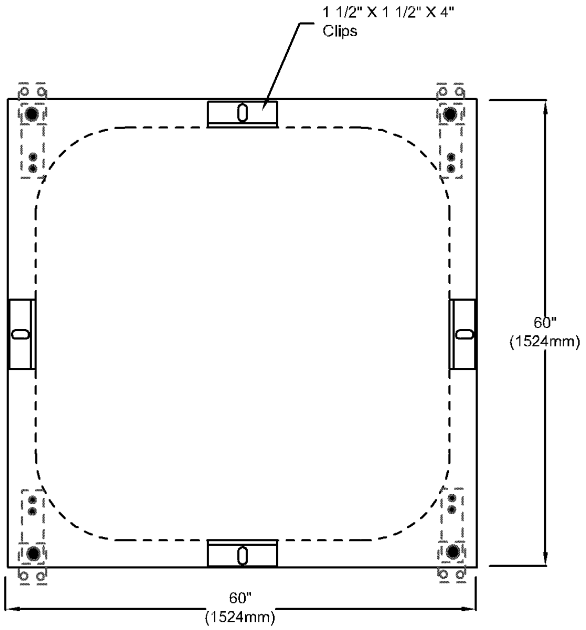
______ Scale Model Number

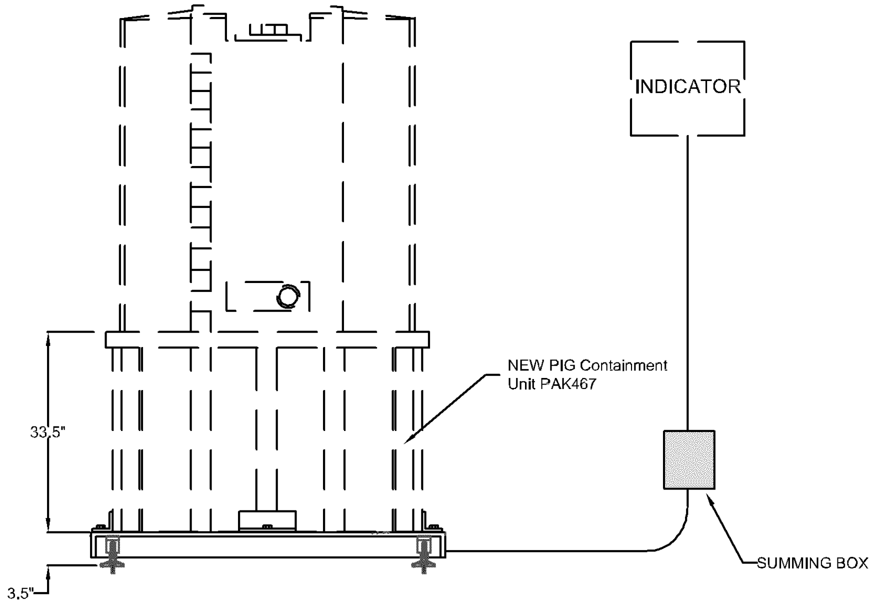
______ Pounds or Kilogram Indication

______ Feet of Cable (20' Standard)

______ Tote Skid Size

400 Containment Size (Gallons)





INSTALLATION NOTE:

We recommend using a forklift to load/unload totes.
If a pallet jack is to be used, scale platform must be pit mounted so deck is flush with floor surface.
Surface mounting with use of inclined load ramps are NOT RECOMMENDED.

FORCE FLOW

2430 Stanwell Dr, Concord, Ca 94520 USA
1-800-893-6723 US & Canada, Fax: 925-686-6713
WWW.forceflow.com / Info@forceflow.com

F:_EMAIL_SUBMITTAL FORMS\Autocad Drawings\31431 HA Tote Bin Scale 60 Containment.dwg

HI-ACCURACY ELECTRONIC
60" TOTE BIN SCALE
CONTAINMENT

Drawn by: KBV
Date: 1/23/09
Revised: 4/13/10
Scale:

Drawing Number
31431

---NOT SUPPLIED BY FORCE FLOW----
For use with Force Flow Scale Model 60-DR100TCHA4

New Pig
Your partner for a clean
and safe workplace.
1-800-HOT-HOGS® (468-4647)

Product Data Sheet

Item Number: PAK467

Item Name: PIG® Poly IBC Containment Unit

Load Capacity UDL:

- 12000 lbs./each (5443.2 kg/each)

Sump Capacity:

- 400 gal./each (1514 L/each)

Options Available:

Item #	Size	Color	Misc. Features	Amount	Length	Width	Height	Depth	Int. Dia.	Ext. Dia.	Weight	Qty/Pallet
PAK467	—	—	—	1 each	58" (147.3cm)	58" (147.3cm)	33.5" (85.1cm)	—	—	—	415lbs. (188.2kg)	1

Color: White/Black

Description:

Polyethylene containment unit used to help meet containment regulations when storing IBCs.

Application:

Used to help meet containment regulations when storing IBCs of 400 gallons or less containing materials compatible with polyethylene. IBCs can be stacked two high.

Product Features:

Super-strong Containment Unit helps you comply with regulations and store IBC tanks safely. Capture leaks, drips and spills to keep floors dry and workers safe.

- Heavy-duty construction permits double-stacking of IBCs to save space
- Solid anti-slip deck holds a variety of IBC sizes; if tank has feet or pegs, be sure to use proper support pads or plates
- Positioning pegs in pedestals keep deck from shifting
- Polyethylene construction resists UV rays, rust, corrosion and most chemicals
- Translucent white sidewalls allow easy visual inspection
- Arrives ready to use with no assembly required

Composition:

- Sump - Polyethylene
- Grates - Injection Molded Polyethylene

This product helps you comply with:

Regulatory Citation	Summary
40 CFR 264.175	Hazardous waste containment systems must be free of structural cracks or gaps, be designed to keep spilled liquids from remaining in contact with the container, prevent run-on and "have sufficient capacity to contain 10% of the volume of the containers, or the volume of the largest container, whichever is greater."

Additional Specifications:

- Dimensions (Grate): 52" L x 52" W

Disclaimers:

- **Flammables Notice:** If using this product with flammable liquids, please consider the regulations that apply to storage and handling of flammable liquids and the safety of this application, specifically flammable vapors, static discharge and heat sources. For further assistance, please call Technical Services.

PDS generated: Jul 14, 2008

One Pork Avenue, Tipton, PA 16684-0304 1-800-HOT-HOGS® (468-4647)
Fax: 1-800-621-PIGS® (621-7447) Email: hothogs@newpig.com Web: newpig.com

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Flint WTP Improvements
Corrosion Control Proposal
MDEQ Comments
October 16, 2015

1. **The compound being referenced is 75% Phosphoric Acid. We are assuming this is the orthophosphate compound. What is the % available orthophosphate as phosphate (P)?** See attached calculations.

2. **What is the density of the phosphate compound in lbs/gal?** 13.17 lb/gal @ 25°C

3. **Water from Detroit is approx. 03 – 0.4 mg/l o orthophosphate as phosphate (P). We will concur with the proposal to add sufficient orthophosphate in order to maintain a 0.5 – 1.0 mg/l as P in the distribution system.** This is the intent of the system. Dosage will be adjusted based upon measured results in the distribution system.

4. **The orthophosphate compound needs to be an NSF Standard 60 approved product.** The specification that will be used for purchase requires NSF certfication.

5. **How will the phosphate dosage be measured? Weigh scale or scada? If scales are to be used, this needs to be included in the proposal.** We will add IBC tote scales with secondary containment. The drawings will be modified to show this; see attached manufacturer's information.

6. **What is the purpose of the boosted water supply that mixes with the phosphate compound?** The boosted water supply is intended to provide sufficient injected volume to ensure complete mixing.

To: Kaplan, Robert[kaplan.robert@epa.gov]
From: Hedman, Susan
Sent: Wed 10/21/2015 1:41:36 AM
Subject: FW: Inquiry from Michigan Radio re Flint drinking water

Hi Bob – In your capacity as chair of the new Flint Safe Drinking Water Task Force, I'd like you to look into the status of the memo that Miguel Deltoral worked on this past summer. I understand that he has been very busy with LCR activities and our efforts to get Flint on the right track – but I think it's important to finalize the memo and to distribute it to MDEQ and the City of Flint. As you can see from the e-mail chain below, we have also gotten press inquiries about the memo. Is the delay due to figuring out how to handle personally identifiable information and health data? If so, can't we just redact that information?

From: Hedman, Susan
Sent: Tuesday, September 29, 2015 10:22 AM
To: Hyde, Tinka
Subject: Fwd: Inquiry from Michigan Radio re Flint drinking water

I am wondering why this memo hasn't been finalized. Is it because events have overtaken it -- in other words, is it the case that the recommendations in the memo have already been/are being implemented?

Sent from my iPhone

Begin forwarded message:

> **From:** "Kelley, Jeff" <kelley.jeff@epa.gov>
> **Date:** September 28, 2015 at 2:48:53 PM CDT
> **To:** "Hedman, Susan" <hedman.susan@epa.gov>
> **Cc:** "Hyde, Tinka" <hyde.tinka@epa.gov>, "Poy, Thomas" <poy.thomas@epa.gov>
> **Subject: Inquiry from Michigan Radio re Flint drinking water**
>
> Susan,
>
> Michigan Radio is asking:
>
> Back in July the ACLU leaked an interim EPA report related to higher than allowable lead levels in the city of Flint. I was told then that because the report had

not been finalized, the EPA could not comment on it beyond a written statement.

Curious if that report has been finalized? If not, do you have any idea when it might be? Obviously it's sort of a hot topic again and we've gotten a few inquiries. If it is, could I get a copy of it? Or would I need to FOIA?

The draft response below is based on input from Tom Poy and the previous approved desk statement:

EPA is working to finalize the field report. In the meantime, EPA and the Michigan Department of Environmental Quality are working closely with the city of Flint to ensure that residents are provided with safe drinking water. In response to EPA and MDEQ recommendations, Flint has decided to implement corrosion control treatment and will receive EPA technical assistance to help with that effort.

EPA advises everyone across the country to flush their pipes before drawing drinking water to reduce exposure to lead. The more time water has been sitting in your home's pipes, the more lead it may contain. Anytime the water in a particular faucet has not been used for six hours or longer, "flush" the cold-water pipes by running the water before drinking and remember to use only cold water for drinking, cooking, and preparing baby formula. Flushing times can vary based on the plumbing configuration in the home and whether the home has a lead service line.

Flint residents that are concerned about lead in their drinking water should contact the water utility and may request sampling. Additional information about lead in drinking water is available at:
http://water.epa.gov/drink/contaminants/basicinformation/lead.cfm.

Jeff Kelley
Director, Office of External Communications

U.S. EPA Region 5
ph: 312-353-1159

To: Hedman, Susan[hedman.susan@epa.gov]
From: Kaplan, Robert
Sent: Wed 10/21/2015 3:40:11 AM
Subject: Re: Inquiry from Michigan Radio re Flint drinking water

Thanks, Susan. I will look into the status of the memo tomorrow and get right back to you. I will also ask the Office of Regional Counsel to review it for PII and other nonreleasable information, and provide advice on the best way to provide the memo to MDEQ and Flint.

- Bob

Sent from my iPhone

On Oct 20, 2015, at 8:41 PM, Hedman, Susan <hedman.susan@epa.gov> wrote:

> Hi Bob – In your capacity as chair of the new Flint Safe Drinking Water Task Force, I'd like you to look into the status of the memo that Miguel Deltoral worked on this past summer. I understand that he has been very busy with LCR activities and our efforts to get Flint on the right track – but I think it's important to finalize the memo and to distribute it to MDEQ and the City of Flint. As you can see from the e-mail chain below, we have also gotten press inquiries about the memo. Is the delay due to figuring out how to handle personally identifiable information and health data? If so, can't we just redact that information?
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>
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>
> Sent from my iPhone
>
> Begin forwarded message:
>
>> **From:** "Kelley, Jeff" <kelley.jeff@epa.gov>
>> **Date:** September 28, 2015 at 2:48:53 PM CDT
>> **To:** "Hedman, Susan" <hedman.susan@epa.gov>
>> **Cc:** "Hyde, Tinka" <hyde.tinka@epa.gov>, "Poy, Thomas" <poy.thomas@epa.gov>

Subject: Inquiry from Michigan Radio re Flint drinking water

Susan,

Michigan Radio is asking:

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Flint residents that are concerned about lead in their drinking water should contact the water utility and may request sampling. Additional information about lead in drinking water is available at: http://water.epa.gov/drink/contaminants/basicinformation/lead.cfm.

Jeff Kelley
Director, Office of External Communications
U.S. EPA Region 5
ph: 312-353-1159

To: Poy, Thomas[poy.thomas@epa.gov]; Lytle, Darren[Lytle.Darren@epa.gov]; Schock, Michael[Schock.Michael@epa.gov]; Henry, Timothy[henry.timothy@epa.gov]; Kaplan, Robert[kaplan.robert@epa.gov]
Cc: Schupp, George[schupp.george@epa.gov]; Wesolowski, Dennis[wesolowski.dennis@epa.gov]
From: Deltoral, Miguel
Sent: Wed 10/21/2015 1:03:20 PM
Subject: Re: DRAFT DELIBERATIVE. Working Draft - School Sampling Protocol

Good morning all.I went through the revised document last night and below are are my comments on the school sampling draft.

General

There is an understandable urgency to assess the situation in schools, but an equally important consideration should be the ability to assess whether progress is being made over time as treatment is introduced and monitored. It is critically important that everyone understand how to collect samples from the different types of outlets, how to interpret the sample results (i.e., what the results mean and what they don't mean) and how to effectively communicate the results to the public.

Additionally, there is always confusion over what threshold lead levels should be used and what the numerical sampling results mean. It is very important that everyone involved in the sampling and communication have proper training so that accurate information is provided to the public from the beginning. My recommendation is that training be provided by ORD as soon as possible to the health department and others that are involved before the school sampling begins. It would also be good to provide the same entities an overview on corrosion and corrosion control so that the objectives of the sampling and capabilities/limitations of the treatment are properly understood by all.

Timing of Sample Collection

The proposed timing indicates that samples should not be collected followed an extended stagnation, such as a weekend. This limitation is more appropriate for samples collected from residences, not schools. DEQ should consider collecting samples on Monday mornings, which would represent the 'worst-case' lead levels found under normal conditions that the children would be exposed to as the water routinely stagnates in the plumbing each weekend that school is in session. While this may not be typical of water usage in a home and collecting samples following extended stagnation in homes is not recommended, collecting samples in schools on Monday does reflect how water is used in schools on a regular/cyclic basis. Collecting samples during this time would provide more consistent 'worst-case' data under normal usage for evaluating the effectiveness of remedial efforts.

Sampling protocol

While I think the proposed end-point sampling is useful and can provide information on whether end-point devices should be replaced, relying solely on the proposed sampling to evaluate the safety of the water in the plumbing overall is not possible. It is essential that we have proper baseline data from throughout the school plumbing, not just the endpoints, to assess the risk as well as the progress of treatment and the best sampling protocol for that would be sequential sampling conducted at 2 or 3 locations in each school. The sequential sampling results would enable an ongoing assessment of the effectiveness of treatment throughout the plumbing network over time. This type of an assessment is not possible to do with single samples and would likely result in more questions and confusion than answers. Certainty is very important at this stage and the CRL has indicated that they can provide analytical support for Flint sampling, so it is my recommendation that Region 5 offer to provide this assistance on sequential sampling to DEQ for the school effort to supplement the work that they are proposing.

Miguel A. Del Toral
Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

From: Poy, Thomas
Sent: Tuesday, October 20, 2015 08:25 AM
To: Deltoral, Miguel; Lytle, Darren; Schock, Michael; Henry, Timothy; Kaplan, Robert
Subject: FW: DRAFT DELIBERATIVE. Working Draft - School Sampling Protocol

This draft of MDEQ's school sampling plan was sent yesterday afternoon.

Tom Poy

Chief, Ground Water and Drinking Water Branch

USEPA - Region 5

(312) 886-5991

From: Shekter Smith, Liane (DEQ) [mailto:SHEKTERL@michigan.gov]
Sent: Monday, October 19, 2015 3:55 PM
To: Poy, Thomas; Dykema, Linda D. (DHHS); Madziar, Joseph (LARA); jhenry@gchd.us
Cc: Krisztian, George (DEQ); Sygo, Jim (DEQ); Busch, Stephen (DEQ); Cook, Pat (DEQ); Prysby, Mike (DEQ)
Subject: DRAFT DELIBERATIVE. Working Draft - School Sampling Protocol

Please see attached.

Your comments by COB Tuesday (tomorrow) would be appreciated. Sooner would be better!

Liane

To: Hedman, Susan[hedman.susan@epa.gov]; Kaplan, Robert[kaplan.robert@epa.gov]; Hyde, Tinka[hyde.tinka@epa.gov]; Henry, Timothy[henry.timothy@epa.gov]; Kelley, Jeff[kelley.jeff@epa.gov]; Rowan, Anne[rowan.anne@epa.gov]
Cc: Beckmann, Ronna Erin[beckmann.ronna@epa.gov]; Deamer, Eileen[deamer.eileen@epa.gov]
From: Fortin, Denise
Sent: Wed 10/21/2015 2:07:48 PM
Subject: Fwd: NEWS RELEASE: Congressman Dan Kildee Calls for Investigation into Flint Water Woes

FYI

Sent from my iPhone

Begin forwarded message:

From: "Dickinson, Jordan" <Jordan.Dickinson@mail.house.gov>
Date: October 21, 2015 at 9:04:00 AM CDT
To: "Davis, CatherineM (Davis.CatherineM@epa.gov)" <Davis.CatherineM@epa.gov>, "Beckmann, Ronna Erin (beckmann.ronna@epa.gov)" <beckmann.ronna@epa.gov>, "Fortin.Denise@epa.gov" <Fortin.Denise@epa.gov>
Subject: FW: NEWS RELEASE: Congressman Dan Kildee Calls for Investigation into Flint Water Woes

From: Rivard, Mitchell
Sent: Wednesday, October 21, 2015 10:00 AM
To: Rivard, Mitchell
Subject: NEWS RELEASE: Congressman Dan Kildee Calls for Investigation into Flint Water Woes

FOR IMMEDIATE RELEASE

Wednesday, October 21, 2015

Contact: Mitchell Rivard, 202-595-4885, mitchell.rivard@mail.house.gov

Congressman Dan Kildee Calls for Investigation into Flint Water Woes

Kildee Demands Answers, Calls Flint Lead Levels "Failure of Government at Every Level"

FLINT – Congressman Dan Kildee (MI-05) today, in his ongoing work to achieve transparency and demand answers for Flint residents, wrote a letter to the Administrator of the U.S. Environmental Protection Agency (EPA), Gina McCarthy, calling for an investigation into the causes of the water problems in Flint. Congressman Kildee called for answers to questions related to EPA's oversight of the Michigan Department of Environmental Quality and its oversight of state delegated authority that contributed to the water crisis. The letter can be viewed here.

"In order to restore confidence, and to ensure that these failures never happen again, I believe that the EPA needs to conduct a thorough investigation into the causes of the water problems in Flint. The failure of government to provide safe drinking water to Flint is unacceptable, and there must be accountability," Congressman Kildee's letter reads.

On Monday, the state of Michigan admitted for the first time that federal rules governing drinking water were not properly followed in Flint.

"Unfortunately, the citizens of Flint are the victims in this situation. They deserve a thorough investigation and answers to these questions," Congressman Kildee said.

Last week, after Congressman Kildee called for federal technical advisors to come to Flint, the EPA established a task force to provide expertise to the city and state.

In March, Congressman Kildee asked the EPA to forgive loans made through the Safe Drinking Water State Revolving Fund in order to free up money to make water infrastructure improvements in Flint. He also has repeatedly fought for additional emergency assistance, including lead-clearing filters and bottled water, from the federal government until a long-term solution can be reached.

###

To: Hedman, Susan[hedman.susan@epa.gov]
Cc: Vaught, Laura[Vaught.Laura@epa.gov]; Meiburg, Stan[Meiburg.Stan@epa.gov]
From: Distefano, Nichole
Sent: Wed 10/21/2015 2:41:05 PM
Subject: Re: NEWS RELEASE: Congressman Dan Kildee Calls for Investigation into Flint Water Woes

Thanks Susan. We just got this as well without any heads up from his office.We'll circle with his staff to get our hands around this and then connect back with you.

Sent from my iPhone

On Oct 21, 2015, at 10:37 AM, Hedman, Susan <hedman.susan@epa.gov> wrote:

> FYI
>
> Sent from my iPhone
>
> Begin forwarded message:
>
> > **From:** "Fortin, Denise" <Fortin.Denise@epa.gov>
> > **Date:** October 21, 2015 at 9:07:48 AM CDT
> > **To:** "Hedman, Susan" <hedman.susan@epa.gov>, "Kaplan, Robert" <kaplan.robert@epa.gov>, "Hyde, Tinka" <hyde.tinka@epa.gov>, "Henry, Timothy" <henry.timothy@epa.gov>, "Kelley, Jeff" <kelley.jeff@epa.gov>, "Rowan, Anne" <rowan.anne@epa.gov>
> > **Cc:** "Beckmann, Ronna Erin" <beckmann.ronna@epa.gov>, "Deamer, Eileen" <deamer.eileen@epa.gov>
> > **Subject: Fwd: NEWS RELEASE: Congressman Dan Kildee Calls for Investigation into Flint Water Woes**
> >
> > FYI
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> > Sent from my iPhone
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> > Begin forwarded message:
> >
> > > **From:** "Dickinson, Jordan" <Jordan.Dickinson@mail.house.gov>
> > > **Date:** October 21, 2015 at 9:04:00 AM CDT
> > > **To:** "Davis, CatherineM (Davis.CatherineM@epa.gov)" <Davis.CatherineM@epa.gov>, "Beckmann, Ronna Erin (beckmann.ronna@epa.gov)" <beckmann.ronna@epa.gov>, "Fortin.Denise@epa.gov" <Fortin.Denise@epa.gov>
> > > **Subject: FW: NEWS RELEASE: Congressman Dan Kildee Calls for**

Investigation into Flint Water Woes

From: Rivard, Mitchell
Sent: Wednesday, October 21, 2015 10:00 AM
To: Rivard, Mitchell
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Kildee Demands Answers, Calls Flint Lead Levels "Failure of Government at Every Level"

FLINT – Congressman Dan Kildee (MI-05) today, in his ongoing work to achieve transparency and demand answers for Flint residents, wrote a letter to the Administrator of the U.S. Environmental Protection Agency (EPA), Gina McCarthy, calling for an investigation into the causes of the water problems in Flint. Congressman Kildee called for answers to questions related to EPA's oversight of the Michigan Department of Environmental Quality and its oversight of state delegated authority that contributed to the water crisis. The letter can be viewed here.

"In order to restore confidence, and to ensure that these failures never happen again, I believe that the EPA needs to conduct a thorough investigation into the causes of the water problems in Flint. The failure of government to provide safe drinking water to Flint is unacceptable, and there must be accountability," Congressman Kildee's letter reads.

On Monday, the state of Michigan admitted for the first time that federal rules governing drinking water were not properly followed in Flint.

"Unfortunately, the citizens of Flint are the victims in this situation. They deserve a thorough investigation and answers to these questions," Congressman Kildee said.

Last week, after Congressman Kildee called for federal technical advisors to come to Flint, the EPA established a task force to provide expertise to the city and state.

In March, Congressman Kildee asked the EPA to forgive loans made through the Safe Drinking Water State Revolving Fund in order to free up money to make water infrastructure improvements in Flint. He also has repeatedly fought for additional emergency assistance, including lead-clearing filters and bottled water, from the federal government until a long-term solution can be reached.

###

To: Porter, Andrea[porter.andrea@epa.gov]; Crooks, Jennifer[crooks.jennifer@epa.gov]; Shoven, Heather[shoven.heather@epa.gov]
Cc: Bair, Rita[bair.rita@epa.gov]; Poy, Thomas[poy.thomas@epa.gov]; Damato, Nicholas[damato.nicholas@epa.gov]; Moriarty, Edward[Moriarty.EdwardJ@epa.gov]; Kempic, Jeffrey[Kempic.Jeffrey@epa.gov]; Glowacki, Joanna[glowacki.joanna@epa.gov]; Viveiros, Edward[Viveiros.Edward@epa.gov]; Banks, Victoria[Banks.Victoria@epa.gov]; Suero, Maryann[suero.maryann@epa.gov]; Master, Edward[master.edward@epa.gov]
From: Deltoral, Miguel
Sent: Wed 10/21/2015 3:07:55 PM
Subject: Re: more flint press --> links

and one more....

http://flintwaterstudy.org/2015/10/congressman-dan-kildee-calls-for-investigation-into-flint-water-woes/

[redacted]

Read more...

Miguel A. Del Toral
Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

From: Deltoral, Miguel
Sent: Wednesday, October 21, 2015 06:42 AM
To: Porter, Andrea; Crooks, Jennifer; Shoven, Heather
Cc: Bair, Rita; Poy, Thomas; Damato, Nicholas; Moriarty, Edward; Kempic, Jeffrey; Glowacki, Joanna; Viveiros, Edward; Banks, Victoria
Subject: Re: more flint press --> links

Some additonal news clip/articles as well...

Newly released e-mails show EPA knew about lead in Flint's drinking water

http://nbc25news.com/news/local/newly-released-e-mails-show-epa-knew-about-lead-in-flints-drinking-water

Michigan DEQ 'completely failed' Flint residents, says Ananich, calling for water investigation

http://www.mlive.com/lansing-news/index.ssf/2015/10/michigan_deq_failed_flint_resi.html

Auditor general looking into state agency responsible for monitoring Flint water

http://michiganradio.org/post/auditor-general-looking-state-agency-responsible-monitoring-flint-water#stream/0

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Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

From: Porter, Andrea
Sent: Tuesday, October 20, 2015 04:04 PM
To: Deltoral, Miguel; Crooks, Jennifer; Shoven, Heather
Cc: Bair, Rita; Poy, Thomas; Damato, Nicholas
Subject: more flint press --> links

Hi All,

Here are more links to Flint articles online:

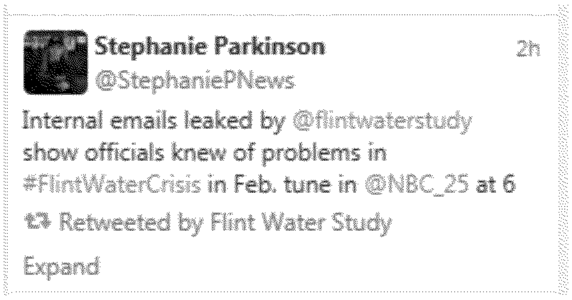
1) **Q+A with Mayor Dayne Walling →** http://flintwaterstudy.org/

2) **Lessons From A Fight To Fix Flint's Water Supply**: Dr. Mona Hanna-Attisha talks to NPR's Michel Martin about her fight to get politicians to fix the water supply in Flint, Mich., after kids started testing positive for higher levels of lead exposure. → http://www.npr.org/2015/10/18/449747061/lessons-from-a-fight-to-fix-flints-water-supply?utm_source=twitter.com&utm_campaign=health&utm_medium=social&utm_term=nprnews

3) **How a Concerned Mother and Her Pediatrician Uncovered Flint, Michigan's Lead-Laden Tap Water**: Toxic tap water is just not acceptable in 2015 (in Flint, Michigan, or anywhere else).-→ http://www.psmag.com/nature-and-technology/how-a-concerned-mother-and-her-pediatrician-uncovered-flint-michigans-lead-laden-tap-water

Also, it looks like a story planned for local TV news tonight --

Source: http://flintwaterstudy.org/



Stephanie Parkinson 2h
@StephaniePNews
Internal emails leaked by @flintwaterstudy show officials knew of problems in #FlintWaterCrisis in Feb. tune in @NBC_25 at 6
Retweeted by Flint Water Study
Expand

Thanks,

Andrea Porter

Environmental Engineer

Ground Water & Drinking Water Branch

U.S. EPA, Region 5 (WG-15J)

77 W. Jackson Blvd.

Chicago, IL 60604

Phone: 312-886-4427

Fax: 312-697-2656

To: Kelley, Jeff[kelley.jeff@epa.gov]; Hedman, Susan[hedman.susan@epa.gov]; Kaplan, Robert[kaplan.robert@epa.gov]; Hyde, Tinka[hyde.tinka@epa.gov]
Cc: Rowan, Anne[rowan.anne@epa.gov]; Beckmann, Ronna Erin[beckmann.ronna@epa.gov]; Harrison, Melissa[Harrison.Melissa@epa.gov]; Abrams, Dan[Abrams.Dan@epa.gov]; Poy, Thomas[poy.thomas@epa.gov]; Fortin, Denise[Fortin.Denise@epa.gov]; Deamer, Eileen[deamer.eileen@epa.gov]; Singer, Joshua[Singer.Joshua@epa.gov]; Arcaute, Francisco[Arcaute.Francisco@epa.gov]; Peterson, John[peterson.john@epa.gov]; Loop, Travis[Loop.Travis@epa.gov]
From: Cassell, Peter
Sent: Wed 10/21/2015 3:18:43 PM
Subject: Flint Clips for Oct. 20-21

FLINT DRINKING WATER CLIPS

US. EPA Region 5 – as prepared by Peter Cassell *(ORA/OEC/PA)* on Oct. 20-21, 2015.

□□□□□□□□□□ Lawmaker calls for hearings on Flint water crisis (Fox Detroit)

□□□□□□□□□□ Flint, Detroit not only U.S. cities vulnerable to water problems (MLive)

□□□□□□□□□□ Flint Lawmakers Calls for Investigation of DEQ (Michigan Public Radio)

□□□□□□□□□□ State Admits Mistake in Flint Water Crisis (WDET)

□□□□□□□□□□ Top Dem calls for hearings, audit on Flint water crisis (Detroit Free Press/AP)

□□□□□□□□□□ Michigan DEQ 'completely failed' Flint residents, says Ananich, calling for water investigation (MLive)

□□□□□□□□□□ Auditor general looking into state agency responsible for monitoring Flint water

□□□□□□□□□□ Lawmaker calls for hearings, audit on Flint water crisis (MNEM CBS 5/AP)

□□□□□□□□□□ Flint water crisis exposes Michigan's infrastructure funding problem (MLive)

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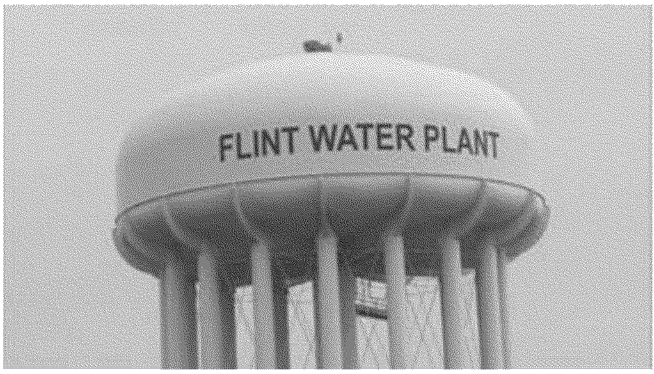
http://www.fox2detroit.com/news/local-news/36767141-story



Posted: Oct 21 2015 07:14AM EDT

Updated: Oct 21 2015 07:14AM EDT

LANSING, Mich. (AP) -- A top Democratic lawmaker called Tuesday for legislative hearings and an audit to probe the state's oversight of drinking water issues in Flint, which he described as "extremely troubling."

Senate Minority Leader Jim Ananich of Flint said regulators' job is to "protect people" and they failed.

Gov. Rick Snyder and the Republican-led Legislature last week approved $9.3 million in aid to address the crisis, which included $6 million to help temporarily reconnect the 99,000-resident city to Detroit's water system after elevated blood-lead levels were found in children.

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"We need to have a thorough investigation before we make any decisions about who should be fired or anything like that," Ananich told reporters. "It's clear that he sees the gravity of the problem in his department. I think he's learning that every day. We have to get to the bottom of how folks in the drinking water division could so blatantly do everything they can in their power to hide the truth from the public."

Senate Majority Leader Arlan Meekhof formed a new Oversight Committee last month. The House has an Oversight and Ethics Committee.

Meekhof spokeswoman Amber McCann, while not immediately committing to Flint water hearings, said he and Ananich will continue talking about "what should be done in the future to prevent this type of situation."

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Ananich wants to know how the office ensures the data it receives is accurate, what accountability measures are in place for staff and if there are policies to "escalate major infractions up the chain of command."

The Flint River is more corrosive than Detroit's water from Lake Huron, and because proper corrosion controls were not implemented after the switch in April 2014, the river water picked up lead from aging pipes that connect water mains to houses and businesses. If consumed, lead can cause developmental delays and learning disabilities.

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http://www.mlive.com/opinion/index.ssf/2015/10/flint_detroit_not_only_us_citi.html

(Kathleen E. Bachynski is a doctoral candidate at Columbia University's Mailman School of Public Health. She grew up in Bloomfield Hills and graduated with bachelor's and master's degrees from the University of Michigan.

Kathleen E. Bachynski

By Kathleen E. Bachynski

Safe drinking water is essential to public health and to living in a modern society. Over the past century, the remarkable decline in deaths from infectious diseases in the United States and across the world can be largely attributed to the provision of clean water. In 1998, Quentin Young, former president of the American Public Health Association, observed, "Turning on any kitchen faucet for a glass of drinking water without hesitation or peril is a silent homage to public health success, which would not have been possible at the start of the twentieth century."

Ensuring a safe water supply should be considered one of the fundamental public health responsibilities of government to its citizens. Yet in the past year, the ability of citizens of two of Michigan's largest cities to access safe water has been seriously threatened. Last year in Detroit, the city began shutting off water to homes where residents could not pay their water bills. This made national headlines, with United Nations experts warning that the water shutoffs were a threat to human rights.

This fall, Michiganders learned that after Flint switched to a new source, the water supply became severely contaminated with lead. In some cases, lead levels were so high as to be classified as hazardous waste. For months, children were poisoned as city and state officials downplayed the complaints of residents and denied reports documenting the water's dangers.

Officials have finally acknowledged the crisis and declared a public health emergency in Flint, but their decisions have caused irrevocable harm. The effects of lead poisoning, from kidney and brain damage to hearing loss, are irreversible.

As a result, well into the 21st century, Americans can no longer assume that they can obtain a clean glass of water from the faucets in their homes. The fundamental failure of state and local government to fulfill this obligation to their citizens is profound.

Furthermore, many of the children most affected by lead poisoning in Flint and elsewhere in the United States are from poor families. They are also far more likely to be black. What does it mean that we as a society are willing to poison these vulnerable children, or to shut off the water to residents in Detroit, one of our poorest cities? Are their lives and health expendable? If we believe that all Americans have the right to grow up safe and free from toxic poisoning, we must confront these urgent questions.

And the egregious failures in Flint and Detroit may only be the tip of the iceberg. Across the United States, safe drinking water is threatened by decaying infrastructure. The American Society of Civil Engineers has warned that we are at risk of "reversing the environmental, public health and economic gains of the last three decades" if we do not address the flaws in our water systems.

It is unconscionable that citizens of the richest country in the world should be poisoned by their own drinking water. It is outrageous that residents of the Great Lakes state, surrounded by the largest group of freshwater lakes on Earth, do not have access to safe water. All Americans should be able to turn to our kitchen faucets for water without hesitation or peril, and the public's health depends on it.

Do you have a guest column on a statewide topic to share? Email Opinion Curator Dan Hawkins at *dhawkins@mlive.com*. And be sure to check out our *guidelines for submission*.

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http://wmuk.org/post/flint-lawmakers-calls-investigation-deq

By Rick Pluta · 13 hours ago

(MPRN-Lansing) A Democratic state lawmaker from Flint is asking the Legislature's A uditor General to look into how the state Department of Environmental Quality handled the city's water crisis.

State Senator Jim Ananich says there's evidence that DEQ ignored warnings about elevated lead levels in the city's drinking water, and then tried to cover it up.

"I think we have to get to the bottom of how folks in the drinking water division could do everything in their power to hide the truth from the public," said Ananich, "and that's pretty much what they did."

Ananich said he would also like to see legislative hearings on what went wrong in Flint.

A DEQ spokesman says the department welcomes and will cooperate with the audit. Governor Rick Snyder has also said he will convene an independent panel to investigate.

Oct. 20, 2015 by Bre'Anna Tinsley

http://www.mlive.com/news/flint/index.ssf/2015/10/will_water.html

The Michigan Department of Environmental Quality is admitting a mistake made while working with Flint on the city's water crisis.

The state says the Office of Drinking Water and Municipal Assistance made an error in testing by following protocols for a city with fewer than 50,000 residents instead of for a city with 100,000 or more.

DEQ Director Dan Wyant says in a statement some department staff lacked experience with corrosion control.

"Simply said we do have to, again, acknowledge our mistake in this. The governor will call for an after-action review, and that review will look at local decision makers, plant operators our own actions on EPA and determine whether others should have taken additional action," Wyant says.

The City of Flint will return to Detroit's water system after months of complaints about water quality and lead exposure.

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http://www.freep.com/story/news/local/michigan/2015/10/20/flint-water-crisis-legislature-reaction-ananich/74308996/

David Eggert, Associated Press 10:44 p.m. EDT October 20, 2015

LANSING – A top Democratic lawmaker called Tuesday for legislative hearings and an audit to probe the state's oversight of drinking water issues in Flint, which he described as "extremely troubling."

Senate Minority Leader Jim Ananich of Flint said regulators' job is to "protect people" and they failed.

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http://www.mlive.com/lansing-news/index.ssf/2015/10/michigan_deq_failed_flint_resi.html

By Jonathan Oosting | joosting@mlive.com
Follow on Twitter
on October 20, 2015 at 2:54 PM, updated October 20, 2015 at 4:46 PM

LANSING, MI — The Michigan Department of Environmental Quality "completely failed" to protect Flint residents from contaminated drinking water, according to Senate Minority Leader Jim Ananich, who is calling for a formal investigation by the Legislature.

Emails released this week show that the federal government warned the DEQ as early as February that Flint River water was causing lead and other contaminants to leach from pipes, posing a health risk for city residents that was not addressed for months.

"It's a cultural problem that people would be more concerned about hiding something than telling the public the truth, and it's really troubling," Ananich, D-Flint, told reporters Tuesday, saying he was troubled by emails sent by both state and federal workers.

"I think a thorough and robust investigation needs to happen, and I think it should happen through the legislative process. But it has to happen, and it has to happen soon to build back confidence in the department and in the state and in government in general."

The email chain is the latest development in the Flint water saga, which included significant state involvement. The city began using Flint River water in April 2014, when it was being run by a state-appointed emergency manager. Gov. Rick Snyder formally announced his plan to address elevated lead levels earlier this month.

DEQ Director Dan Wyant said Monday that his agency enforced the wrong federal standards for treating Flint River water for more than 17 months, failing to require that the city make it less corrosive.

Wyant attributed the "mistake" to drinking water program staff and announced a new interim chief for the Office of Drinking Water and Municipal Assistance.

Snyder has defended Wyant, but the Michigan Democratic Party on Monday called the governor to fire his DEQ director, a request echoed Tuesday by liberal advocacy group Progress Michigan.

Ananich, however, said there should be an investigation before any decisions of that kind are made.

"I think it's clear (Wyant) sees the gravity of the problem in his department, and I think he's learning that everyday," Ananich said. "But I think we have to get to the bottom of how folks in the drinking water division could so blatantly do everything they can in their power to hide the truth from the public, and that's pretty clearly what they did."

Ananich told reporters he has had initial discussions with Senate Majority Leader Arlan Meekhof about a legislative probe of the Flint water crisis.

He suggested the House and Senate oversight committees could hold hearings, and he noted that he's also asked the State Auditor General to expand an audit of the DEQ drinking water division that was already underway.

"I don't think we should have predetermined conditions," Ananich said. "But if things come out that people have been negligent or purposeful in their actions, I think there needs to be very serious consequences."

Jonathan Oosting is a Capitol reporter for MLive Media Group. *Email him*, find him on *Facebook* or follow him on *Twitter*.

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http://michiganradio.org/post/auditor-general-looking-state-agency-responsible-monitoring-flint-water#stream/0

By Steve Carmody · 19 hours ago

A formal review is underway into the state agency that made mistakes in its monitoring

of Flint's drinking water.

Last week, the city of Flint switched back to Detroit water after a year and a half of getting its tap water from the Flint River.

Credit Steve Carmody / Michigan Radio

The state Auditor General's office expects to wrap up its review of the Office of Drinking Water and Municipal Assistance (ODWMA) next year. Specifically, the auditor is reviewing how the office oversees drinking water supplies.

State Sen. Jim Ananich, D-Flint, says he has a few questions he'd like the auditor's office to find answers to. He wants to know how the agency ensures its data is accurate and how the agency ensures accountability among its staffers.

Also in his letter to Auditor General Doug Ringler, Sen. Ananich wants to know:

What accountability measures are in place for ODWMA staff who lie or misrepresent information to the Environmental Protection Agency?

What policies do ODWMA and the Michigan Department of Environmental Quality (MDEQ) have in place to escalate major infractions up the chain of command?

Flint recently switched back to Detroit water, after independent tests confirmed rising lead levels in tap water in many city homes and in the blood of Flint children.

Problems started after the city switched its drinking water source to the Flint River. Government officials insisted from more than a year that their tests showed the water was safe to drink. But independent tests showed problems with the river water that resulted in damage to lead and iron pipes.

MDEQ director Dan Wyant says in the case of Flint, the office made mistakes.

"It's increasingly clear there was confusion here, but it also is increasingly clear that DEQ staff believed they were using the proper federal protocol and they were not," MDEQ Director Dan Wyant told Michigan Radio.

Wyant reassigned the former head of the office.

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http://www.wnem.com/story/30313148/lawmaker-calls-for-hearings-audit-on-flint-water-crisis#ixzz3pDRTO1o1

Posted: Oct 21, 2015 4:12 AM CST Updated: Oct 21, 2015 4:12 AM CST

LANSING, Mich. (AP) -

A top Democrat in Michigan's Legislature is calling for hearings and an audit to probe the state's oversight of drinking water in Flint.

Senate Minority Leader Jim Ananich says environmental regulators' actions are "extremely troubling."

Department of Environmental Quality Director Dan Wyant said Monday a mistake was made and federal drinking water rules were not followed properly when Flint switched its water source. He reassigned the chief of the Office of Drinking Water and Municipal A ssistance.

Ananich said Tuesday that legislative oversight committees should hold hearings. He also sent a letter to Michigan's auditor general asking that he investigate further as part of an already-underway audit of the drinking water office.

Flint has reconnected to Detroit's system to resolve the lead health emergency spurred by a switch to river water.

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October 20, 2015

By Mike Nystrom

It was great to see the Michigan Legislature come together and put politics aside as they voted unanimously in finding a resolution to the recent Flint drinking water crisis. However, this single incident also exposed a major flaw in a system that should ensure that all residents of Michigan have access to clean drinking water, not water that is treated from polluted rivers and is brought to them through aging, deteriorating pipes.

We have all witnessed how difficult it has been for our state leaders to legislate changes in the way we fund roads. It is going to be even more difficult to bring about positive legislation to update our aging underground drinking water systems and failing sewer systems that are out of sight and, thus, out of mind.

We all take for granted that our water supply and sewage disposal systems are in fine working condition and yet, significant troubles lurk just below the literal surface in many, if not most, communities across the state.

The delay in road funding has blemished the image of the state that put the world on wheels. A continued delay in proper funding for our underground infrastructure will also be an embarrassing black eye for the Great Lakes State, whose greatest natural resource is the water in our lakes, rivers and streams.

Flint is not alone with its aging and dilapidated system challenges. Other municipalities throughout Michigan have significant problems, and no one is talking about them publicly, in most cases. Pictures of many drinking water delivery pipes, which can range anywhere from 50 to 100 years old, would horrify most people.

Flint is not alone with its aging and dilapidated system challenges.

Many people would be sickened if they truly understood that most of the beach closings that happen in Michigan on a regular basis are the result of fecal contamination due to leaching sewer systems. Even more disheartening is the fact that with very little state and federal financial support, our underground infrastructure is paid for mainly at the local level, and cash strapped municipalities have not been able to implement necessary rate increases for much needed improvements.

How many more Flint catastrophes need to happen before we wake up and fix the problem?

A comprehensive state plan is sorely needed now to begin the replacement of outdated and failing systems; and, more importantly, to properly fund our ailing underground infrastructure throughout our state. This will take cooperation from the public, as well as local and state leaders -— now – not after another public health emergency.

Clean water is essential, but it costs money. Nothing is more important to life, and nothing is taken more for granted.

The lesson of Flint has been painful and costly. Let's not repeat that hard lesson.

Let's find a solution.

Mike Nystrom is executive vice president of the Michigan Infrastructure & Transportation A ssociation. He can be reached *here*.

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To: Davis, CatherineM[Davis.CatherineM@epa.gov]; Henry, Timothy[henry.timothy@epa.gov]
Cc: Beckmann, Ronna Erin[beckmann.ronna@epa.gov]
From: Fortin, Denise
Sent: Wed 10/21/2015 3:20:15 PM
Subject: FW: Flint Clips for Oct. 20-21

FYI

Denise Fortin

Congressional Liaison

Office of Regional Administrator

U.S. Environmental Protection Agency

312-886-9859

From: Cassell, Peter
Sent: Wednesday, October 21, 2015 10:19 AM
To: Kelley, Jeff; Hedman, Susan; Kaplan, Robert; Hyde, Tinka
Cc: Rowan, Anne; Beckmann, Ronna Erin; Harrison, Melissa; Abrams, Dan; Poy, Thomas; Fortin, Denise; Deamer, Eileen; Singer, Joshua; Arcaute, Francisco; Peterson, John; Loop, Travis
Subject: Flint Clips for Oct. 20-21

FLINT DRINKING WATER CLIPS

US. EPA Region 5 – as prepared by Peter Cassell *(ORA/OEC/PA)* on Oct. 20-21, 2015.

- Lawmaker calls for hearings on Flint water crisis (Fox Detroit)
- Flint, Detroit not only U.S. cities vulnerable to water problems (MLive)
- Flint Lawmakers Calls for Investigation of DEQ (Michigan Public Radio)
- State Admits Mistake in Flint Water Crisis (WDET)
- Top Dem calls for hearings, audit on Flint water crisis (Detroit Free Press/AP)
- Michigan DEQ 'completely failed' Flint residents, says Ananich, calling for water investigation (MLive)
- Auditor general looking into state agency responsible for monitoring Flint water
- Lawmaker calls for hearings, audit on Flint water crisis (MNEM CBS 5/AP)
- Flint water crisis exposes Michigan's infrastructure funding problem (MLive)

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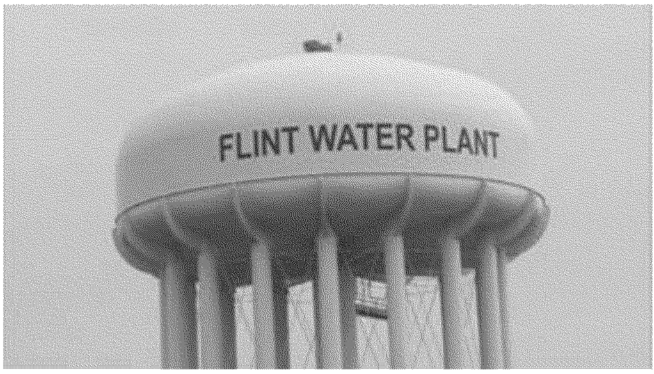
http://www.fox2detroit.com/news/local-news/36767141-story



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Ananich wants to know how the office ensures the data it receives is accurate, what accountability measures are in place for staff and if there are policies to "escalate major infractions up the chain of command."

The Flint River is more corrosive than Detroit's water from Lake Huron, and because proper corrosion controls were not implemented after the switch in April 2014, the river water picked up lead from aging pipes that connect water mains to houses and businesses. If consumed, lead can cause developmental delays and learning disabilities.

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http://www.mlive.com/opinion/index.ssf/2015/10/flint_detroit_not_only_us_citi.html

(Kathleen E. Bachynski is a doctoral candidate at Columbia University's Mailman School of Public Health. She grew up in Bloomfield Hills and graduated with bachelor's and master's degrees from the University of Michigan.

Kathleen E. Bachynski

By Kathleen E. Bachynski

Safe drinking water is essential to public health and to living in a modern society. Over the past century, the remarkable decline in deaths from infectious diseases in the United States and across the world can be largely attributed to the provision of clean water. In 1998, Quentin Young, former president of the American Public Health Association, observed, "Turning on any kitchen faucet for a glass of drinking water without hesitation or peril is a silent homage to public health success, which would not have been possible at the start of the twentieth century."

Ensuring a safe water supply should be considered one of the fundamental public health responsibilities of government to its citizens. Yet in the past year, the ability of citizens of two of Michigan's largest cities to access safe water has been seriously threatened. Last year in Detroit, the city began shutting off water to homes where residents could not pay their water bills. This made national headlines, with United Nations experts warning that the water shutoffs were a threat to human rights.

This fall, Michiganders learned that after Flint switched to a new source, the water supply became severely contaminated with lead. In some cases, lead levels were so high as to be classified as hazardous waste. For months, children were poisoned as city and state officials downplayed the complaints of residents and denied reports documenting the water's dangers.

Officials have finally acknowledged the crisis and declared a public health emergency in Flint, but their decisions have caused irrevocable harm. The effects of lead poisoning, from kidney and brain damage to hearing loss, are irreversible.

As a result, well into the 21st century, Americans can no longer assume that they can obtain a clean glass of water from the faucets in their homes. The fundamental failure of state and local government to fulfill this obligation to their citizens is profound.

Furthermore, many of the children most affected by lead poisoning in Flint and elsewhere in the United States are from poor families. They are also far more likely to be black. What does it mean that we as a society are willing to poison these vulnerable children, or to shut off the water to residents in Detroit, one of our poorest cities? Are their lives and health expendable? If we believe that all Americans have the right to grow up safe and free from toxic poisoning, we must confront these urgent questions.

And the egregious failures in Flint and Detroit may only be the tip of the iceberg. Across the United States, safe drinking water is threatened by decaying infrastructure. The American Society of Civil Engineers has warned that we are at risk of "reversing the environmental, public health and economic gains of the last three decades" if we do not address the flaws in our water systems.

It is unconscionable that citizens of the richest country in the world should be poisoned by their own drinking water. It is outrageous that residents of the Great Lakes state, surrounded by the largest group of freshwater lakes on Earth, do not have access to safe water. All Americans should be able to turn to our kitchen faucets for water without hesitation or peril, and the public's health depends on it.

Do you have a guest column on a statewide topic to share? Email Opinion Curator Dan Hawkins at dhawkins@mlive.com. And be sure to check out our guidelines for submission.

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http://wmuk.org/post/flint-lawmakers-calls-investigation-deq

By Rick Pluta · 13 hours ago

(MPRN-Lansing) A Democratic state lawmaker from Flint is asking the Legislature's A uditor General to look into how the state Department of Environmental Quality handled the city's water crisis.

State Senator Jim Ananich says there's evidence that DEQ ignored warnings about elevated lead levels in the city's drinking water, and then tried to cover it up.

"I think we have to get to the bottom of how folks in the drinking water division could do everything in their power to hide the truth from the public," said Ananich, "and that's pretty much what they did."

Ananich said he would also like to see legislative hearings on what went wrong in Flint.

A DEQ spokesman says the department welcomes and will cooperate with the audit. Governor Rick Snyder has also said he will convene an independent panel to investigate.

Oct. 20, 2015 by Bre'Anna Tinsley

http://www.mlive.com/news/flint/index.ssf/2015/10/will_water.html

The Michigan Department of Environmental Quality is admitting a mistake made while working with Flint on the city's water crisis.

The state says the Office of Drinking Water and Municipal Assistance made an error in testing by following protocols for a city with fewer than 50,000 residents instead of for a city with 100,000 or more.

DEQ Director Dan Wyant says in a statement some department staff lacked experience with corrosion control.

“Simply said we do have to, again, acknowledge our mistake in this. The governor will call for an after-action review, and that review will look at local decision makers, plant operators our own actions on EPA and determine whether others should have taken additional action,” Wyant says.

The City of Flint will return to Detroit’s water system after months of complaints about water quality and lead exposure.

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http://www.freep.com/story/news/local/michigan/2015/10/20/flint-water-crisis-legislature-reaction-ananich/74308996/

David Eggert, Associated Press 10:44 p.m. EDT October 20, 2015

LANSING – A top Democratic lawmaker called Tuesday for legislative hearings and an audit to probe the state’s oversight of drinking water issues in Flint, which he described as “extremely troubling.”

Senate Minority Leader Jim Ananich of Flint said regulators’ job is to “protect people” and they failed.

Gov. Rick Snyder and the Republican-led Legislature last week approved $9.3 million in aid to address the crisis, which included $6 million to help temporarily reconnect the 99,000-resident city to Detroit’s water system after elevated blood-lead levels were found in children.

Ananich stopped short of echoing demands from the Michigan Democratic Party and a liberal advocacy group that state Department of Environmental Quality Director Dan Wyant resign or be removed by Snyder.

Wyant said Monday a mistake was made and federal drinking water rules were not followed properly when Flint switched its water source from Detroit to the Flint River in a cost-cutting move while under state emergency management. He reassigned the chief of the Office of Drinking Water and Municipal Assistance but said he was convinced that program staff believed they were doing their job right.

“We need to have a thorough investigation before we make any decisions about who should be fired or anything like that,” Ananich told reporters. “It’s clear that he sees the gravity of the problem in his department. I think he’s learning that every day. We have to get to the bottom of how folks in the drinking water division could so blatantly do everything they can in their power to hide the truth from the public."

Senate Majority Leader Arlan Meekhof formed a new Oversight Committee last month. The House has an Oversight and Ethics Committee.

Meekhof spokeswoman Amber McCann, while not immediately committing to Flint water hearings, said he and Ananich will continue talking about "what should be done in the future to prevent this type of situation."

Ananich also sent a letter to state Auditor General Doug Ringler asking that he answer specific questions in an audit of the drinking water office. The audit was already underway before Flint's water problems surfaced, he said.

Ananich wants to know how the office ensures the data it receives is accurate, what accountability measures are in place for staff and if there are policies to "escalate major infractions up the chain of command."

The Flint River is more corrosive than Detroit's water from Lake Huron, and because proper corrosion controls were not implemented after the switch in April 2014, the river water picked up lead from aging pipes that connect water mains to houses and businesses. If consumed, lead can cause developmental delays and learning disabilities.

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http://www.mlive.com/lansing-news/index.ssf/2015/10/michigan_deq_failed_flint_resi.html

By Jonathan Oosting | joosting@mlive.com
Follow on Twitter
on October 20, 2015 at 2:54 PM, updated October 20, 2015 at 4:46 PM

LANSING, MI — The Michigan Department of Environmental Quality "completely failed" to protect Flint residents from contaminated drinking water, according to Senate Minority Leader Jim Ananich, who is calling for a formal investigation by the Legislature.

Emails released this week show that the federal government warned the DEQ as early as February that Flint River water was causing lead and other contaminants to leach from pipes, posing a health risk for city residents that was not addressed for months.

"It's a cultural problem that people would be more concerned about hiding something than telling the public the truth, and it's really troubling," Ananich, D-Flint, told reporters Tuesday, saying he was troubled by emails sent by both state and federal workers.

"I think a thorough and robust investigation needs to happen, and I think it should happen through the legislative process. But it has to happen, and it has to happen soon to build back confidence in the department and in the state and in government in general."

The email chain is the latest development in the Flint water saga, which included significant state involvement. The city began using Flint River water in April 2014, when it was being run by a state-appointed emergency manager. Gov. Rick Snyder formally announced his plan to address elevated lead levels earlier this month.

DEQ Director Dan Wyant said Monday that his agency enforced the wrong federal standards for treating Flint River water for more than 17 months, failing to require that the city make it less corrosive.

Wyant attributed the "mistake" to drinking water program staff and announced a new interim chief for the Office of Drinking Water and Municipal Assistance.

Snyder has defended Wyant, but the Michigan Democratic Party on Monday called the governor to fire his DEQ director, a request echoed Tuesday by liberal advocacy group Progress Michigan.

Ananich, however, said there should be an investigation before any decisions of that kind are made.

"I think it's clear (Wyant) sees the gravity of the problem in his department, and I think he's learning that everyday," Ananich said. "But I think we have to get to the bottom of how folks in the drinking water division could so blatantly do everything they can in their power to hide the truth from the public, and that's pretty clearly what they did."

Ananich told reporters he has had initial discussions with Senate Majority Leader Arlan Meekhof about a legislative probe of the Flint water crisis.

He suggested the House and Senate oversight committees could hold hearings, and he noted that he's also asked the State Auditor General to expand an audit of the DEQ drinking water division that was already underway.

"I don't think we should have predetermined conditions," Ananich said. "But if things come out that people have been negligent or purposeful in their actions, I think there needs to be very serious consequences."

Jonathan Oosting is a Capitol reporter for MLive Media Group. *Email him*, find him on *Facebook* or follow him on *Twitter*.

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http://michiganradio.org/post/auditor-general-looking-state-agency-responsible-monitoring-flint-water#stream/0

By Steve Carmody · 19 hours ago

A formal review is underway into the state agency that made mistakes in its monitoring of Flint's drinking water.

Last week, the city of Flint switched back to Detroit water after a year and a half of getting its tap water from the Flint River.

Credit Steve Carmody / Michigan Radio

The state Auditor General's office expects to wrap up its review of the Office of Drinking Water and Municipal Assistance (ODWMA) next year. Specifically, the auditor is reviewing how the office oversees drinking water supplies.

State Sen. Jim Ananich, D-Flint, says he has a few questions he'd like the auditor's office to find answers to. He wants to know how the agency ensures its data is accurate and how the agency ensures accountability among its staffers.

Also in his letter to Auditor General Doug Ringler, Sen. Ananich wants to know:

What accountability measures are in place for ODWMA staff who lie or misrepresent information to the Environmental Protection Agency?

What policies do ODWMA and the Michigan Department of Environmental Quality (MDEQ) have in place to escalate major infractions up the chain of command?

Flint recently switched back to Detroit water, after independent tests confirmed rising lead levels in tap water in many city homes and in the blood of Flint children.

Problems started after the city switched its drinking water source to the Flint River. Government officials insisted from more than a year that their tests showed the water was safe to drink. But independent tests showed problems with the river water that resulted in damage to lead and iron pipes.

MDEQ director Dan Wyant says in the case of Flint, the office made mistakes.

"It's increasingly clear there was confusion here, but it also is increasingly clear that DEQ staff believed they were using the proper federal protocol and they were not," MDEQ Director Dan Wyant told Michigan Radio.

Wyant reassigned the former head of the office.

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http://www.wnem.com/story/30313148/lawmaker-calls-for-hearings-audit-on-flint-water-crisis#ixzz3pDRTO1o1

Posted: Oct 21, 2015 4:12 AM CST Updated: Oct 21, 2015 4:12 AM CST

LANSING, Mich. (AP) -

A top Democrat in Michigan's Legislature is calling for hearings and an audit to probe the state's oversight of drinking water in Flint.

Senate Minority Leader Jim Ananich says environmental regulators' actions are "extremely troubling."

Department of Environmental Quality Director Dan Wyant said Monday a mistake was made and federal drinking water rules were not followed properly when Flint switched its water source. He reassigned the chief of the Office of Drinking Water and Municipal A ssistance.

Ananich said Tuesday that legislative oversight committees should hold hearings. He also sent a letter to Michigan's auditor general asking that he investigate further as part of an already-underway audit of the drinking water office.

Flint has reconnected to Detroit's system to resolve the lead health emergency spurred by a switch to river water.

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October 20, 2015

By Mike Nystrom

It was great to see the Michigan Legislature come together and put politics aside as they voted unanimously in finding a resolution to the recent Flint drinking water crisis. However, this single incident also exposed a major flaw in a system that should ensure that all residents of Michigan have access to clean drinking water, not water that is treated from polluted rivers and is brought to them through aging, deteriorating pipes.

We have all witnessed how difficult it has been for our state leaders to legislate changes in the way we fund roads. It is going to be even more difficult to bring about positive legislation to update our aging underground drinking water systems and failing sewer systems that are out of sight and, thus, out of mind.

We all take for granted that our water supply and sewage disposal systems are in fine working condition and yet, significant troubles lurk just below the literal surface in many, if not most, communities across the state.

The delay in road funding has blemished the image of the state that put the world on wheels. A continued delay in proper funding for our underground infrastructure will also be an embarrassing black eye for the Great Lakes State, whose greatest natural resource is the water in our lakes, rivers and streams.

Flint is not alone with its aging and dilapidated system challenges. Other municipalities throughout Michigan have significant problems, and no one is talking about them publicly, in most cases. Pictures of many drinking water delivery pipes, which can range anywhere from 50 to 100 years old, would horrify most people.

Flint is not alone with its aging and dilapidated system challenges.

Many people would be sickened if they truly understood that most of the beach closings that happen in Michigan on a regular basis are the result of fecal contamination due to leaching sewer systems. Even more disheartening is the fact that with very little state and federal financial support, our underground infrastructure is paid for mainly at the local level, and cash strapped municipalities have not been able to implement necessary rate increases for much needed improvements.

How many more Flint catastrophes need to happen before we wake up and fix the problem?

A comprehensive state plan is sorely needed now to begin the replacement of outdated and failing systems; and, more importantly, to properly fund our ailing underground infrastructure throughout our state. This will take cooperation from the public, as well as local and state leaders —- now – not after another public health emergency.

Clean water is essential, but it costs money. Nothing is more important to life, and nothing is taken more for granted.

The lesson of Flint has been painful and costly. Let's not repeat that hard lesson.

Let's find a solution.

Mike Nystrom is executive vice president of the Michigan Infrastructure & Transportation Association. He can be reached *here*.

###

To: Hedman, Susan[hedman.susan@epa.gov]
From: Distefano, Nichole
Sent: Wed 10/21/2015 8:48:07 PM
Subject: Re: NEWS RELEASE: Congressman Dan Kildee Calls for Investigation into Flint Water Woes

Susan -

I have been consumed with a bunch of other things today and am now able to focus on this. Do you have time to connect today?

Sent from my iPhone

On Oct 21, 2015, at 12:57 PM, Hedman, Susan <hedman.susan@epa.gov> wrote:

> One foundational point about this letter – and then a follow up question about the previous letters Rep. Kildee sent to us.
>
> The foundational point about this letter: no one at EPA ever told anybody that Flint water was safe to drink. As for his individual questions – after reading the EPA/MDEQ e-mail excerpts that appeared on Mark Edwards' webpage on Monday, I convened a meeting late yesterday with the R5 Water Division Director and Deputy Director to get answers to similar questions. Bob Kaplan is tasking ORC with the job of putting together a timeline about when we first learned that Flint had discontinued corrosion control and documenting answers to Rep. Kildee's other questions.
>
> As for the previous letters – it was my understanding that the phone calls that I had with Kildee and the Administrator had with Kildee adequately addressed his earlier letters and that we were not expected to provide written answers. Now my Congressional liaisons are telling me that we need to provide written answers. Please advise.
>
> **From:** Distefano, Nichole
> **Sent:** Wednesday, October 21, 2015 11:25 AM
> **To:** Meiburg, Stan
> **Cc:** Hedman, Susan; Vaught, Laura
> **Subject:** Re: NEWS RELEASE: Congressman Dan Kildee Calls for Investigation into Flint Water Woes
>
> We are talking with staff and will circle back.
>
> Sent from my iPhone

On Oct 21, 2015, at 11:58 AM, Meiburg, Stan <Meiburg.Stan@epa.gov> wrote:

> Hmmm. Nichole, do we what "investigation " means?
>
> Stan
>
> Sent from my iPhone
>
> On Oct 21, 2015, at 10:37 AM, Hedman, Susan <hedman.susan@epa.gov> wrote:
>
>> FYI
>>
>> Sent from my iPhone
>>
>> Begin forwarded message:
>>
>>> **From:** "Fortin, Denise" <Fortin.Denise@epa.gov>
>>> **Date:** October 21, 2015 at 9:07:48 AM CDT
>>> **To:** "Hedman, Susan" <hedman.susan@epa.gov>, "Kaplan, Robert" <kaplan.robert@epa.gov>, "Hyde, Tinka" <hyde.tinka@epa.gov>, "Henry, Timothy" <henry.timothy@epa.gov>, "Kelley, Jeff" <kelley.jeff@epa.gov>, "Rowan, Anne" <rowan.anne@epa.gov>
>>> **Cc:** "Beckmann, Ronna Erin" <beckmann.ronna@epa.gov>, "Deamer, Eileen" <deamer.eileen@epa.gov>
>>> **Subject: Fwd: NEWS RELEASE: Congressman Dan Kildee Calls for Investigation into Flint Water Woes**
>>>
>>> FYI
>>>
>>> Sent from my iPhone
>>>
>>> Begin forwarded message:
>>>
>>>> **From:** "Dickinson, Jordan" <Jordan.Dickinson@mail.house.gov>
>>>> **Date:** October 21, 2015 at 9:04:00 AM CDT
>>>> **To:** "Davis, CatherineM (Davis.CatherineM@epa.gov)" <Davis.CatherineM@epa.gov>, "Beckmann, Ronna Erin (beckmann.ronna@epa.gov)" <beckmann.ronna@epa.gov>, "Fortin.Denise@epa.gov" <Fortin.Denise@epa.gov>
>>>> **Subject: FW: NEWS RELEASE: Congressman Dan Kildee Calls for Investigation into Flint Water Woes**

From: Rivard, Mitchell
Sent: Wednesday, October 21, 2015 10:00 AM
To: Rivard, Mitchell
Subject: NEWS RELEASE: Congressman Dan Kildee Calls for Investigation into Flint Water Woes

FOR IMMEDIATE RELEASE

Wednesday, October 21, 2015

Contact: Mitchell Rivard, 202-595-4885,
mitchell.rivard@mail.house.gov

Congressman Dan Kildee Calls for Investigation into Flint Water Woes

Kildee Demands Answers, Calls Flint Lead Levels "Failure of Government at Every Level"

FLINT – Congressman Dan Kildee (MI-05) today, in his ongoing work to achieve transparency and demand answers for Flint residents, wrote a letter to the Administrator of the U.S. Environmental Protection Agency (EPA), Gina McCarthy, calling for an investigation into the causes of the water problems in Flint. Congressman Kildee called for answers to questions related to EPA's oversight of the Michigan Department of Environmental Quality and its oversight of state delegated authority that contributed to the water crisis. The letter can be viewed here.

"In order to restore confidence, and to ensure that these failures never happen again, I believe that the EPA needs to conduct a thorough investigation into the causes of the water problems in Flint. The failure of government to provide safe drinking water to Flint is unacceptable, and there must be accountability," Congressman Kildee's letter reads.

On Monday, the state of Michigan admitted for the first time that federal rules governing drinking water were not properly followed in Flint.

"Unfortunately, the citizens of Flint are the victims in this situation. They deserve a thorough investigation and answers to these questions," Congressman Kildee said.

Last week, after Congressman Kildee called for federal technical advisors to come to Flint, the EPA established a task force to provide expertise to the city and state.

In March, Congressman Kildee asked the EPA to forgive loans made through the Safe Drinking Water State Revolving Fund in order to free up money to make water infrastructure improvements in Flint. He also has repeatedly fought for additional emergency assistance, including lead-clearing filters and bottled water, from the federal government until a long-term solution can be reached.

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To: Deltoral, Miguel[deltoral.miguel@epa.gov]; Porter, Andrea[porter.andrea@epa.gov]; Crooks, Jennifer[crooks.jennifer@epa.gov]; Bair, Rita[bair.rita@epa.gov]; Poy, Thomas[poy.thomas@epa.gov]; Damato, Nicholas[damato.nicholas@epa.gov]; Moriarty, Edward[Moriarty.EdwardJ@epa.gov]; Kempic, Jeffrey[Kempic.Jeffrey@epa.gov]; Glowacki, Joanna[glowacki.joanna@epa.gov]; Viveiros, Edward[Viveiros.Edward@epa.gov]; Banks, Victoria[Banks.Victoria@epa.gov]; Lopez-Carbo, Maria[Lopez-Carbo.Maria@epa.gov]; King, Carol[King.Carol@epa.gov]; Schock, Michael[Schock.Michael@epa.gov]; Lytle, Darren[Lytle.Darren@epa.gov]
From: Shoven, Heather
Sent: Wed 10/21/2015 9:22:41 PM
Subject: FYI: Gov. Rick Snyder announces Flint Water Task Force to review state, federal and municipal actions, offer recommendations

Gov. Rick Snyder announces Flint Water Task Force to review state, federal and municipal actions, offer recommendations

Experts in public health, water management, environmental protection to focus on steps to protect residents

Wednesday, Oct. 21, 2015

LANSING, Mich. – Gov. Rick Snyder today announced the creation of an independent advisory task force charged with reviewing actions regarding water use and testing in Flint and offer recommendations for future guidelines to protect the health and safety of all state residents.

Task force members include experts in public health and medicine, water management, and environmental protection from both sides of the aisle, and will be co-chaired by Ken Sikkema of Public Sector Consultants and Chris Kolb, of the Michigan Environmental Council. Also serving will be Dr. Matthew Davis of the University of Michigan Health System, Eric Rothstein, of the Galardi Rothstein Group and Dr. Lawrence Reynolds of Mott Children's Health Center in Flint.

"Transitioning back to the Detroit Water and Sewerage Department-Great Lakes Water Authority is a good first step to protecting public health in Flint, but it's not the last step," Snyder said. "Bringing in outside experts to evaluate our actions and help monitor and advise on potential changes to law, procedures and practices will be key to continuing work on the comprehensive action plan and ensuring safe drinking water for all the residents in Flint and all of Michigan."

Snyder said the administration will fully cooperate with task force members, saying he wants an unbiased report focusing on steps taken in the past and recommendations that could improve practices to ensure all residents have access to safe, clean water.

Ken Sikkema is a senior policy fellow at Public Sector Consultants, where he specializes in public finance, environment, and energy policy. Prior to joining the firm, Sikkema served in both the Michigan House and Senate, culminating with four years as Senate majority leader. He has also served as both an adjunct and visiting professor at Grand Valley State University.

Chris Kolb is president of the Michigan Environmental Council, a statewide coalition of 70 environmental, public health and faith-based nonprofit groups. Before joining the MEC, Kolb represented Ann Arbor in the state House for six years and served six years on the Ann Arbor City Council. He has been president of the MEC for six years.

Matthew Davis, M.D., M.A.P.P., is professor of pediatrics and internal medicine at the University of Michigan Health System and professor of public policy at the Gerald R. Ford School at the University of

Michigan, having joined the faculty in 2000. Davis also is a professor of health management and policy at the School of Public Health. He previously served as the chief medical executive of the Michigan Department of Community Health/Department of Health and Human Services.

Eric Rothstein is a national water issues consultant and principal at the Galardi Rothstein Group. He served as an independent advisor on the creation of the Great Lakes Water Authority. Rothstein also has served as Jefferson County, Alabama's rate consultant and municipal adviser for litigation related to the county's bankruptcy and issuance of $1.7 billion in sewer warrants and led strategic financial planning for the City of Atlanta's Department of Watershed Management. He has more than 30 years of experience in water, wastewater and stormwater utility finance and rate-making assessments.

Lawrence Reynolds, M.D., is a pediatrician in Flint who serves as president of the Mott Children's Health Center. He received his medical degree from Howard University College of Medicine and has been in practice for 36 years. He has served as president of the Genesee County Medical Society and the Michigan Chapter of the American Academy of Pediatrics. He has been honored for his humanitarian and advocacy efforts on behalf of children from the Community Foundation of Greater Flint.

Snyder has said reconnecting with the authority is a critical step to resolving water quality issues and addressing related health concerns. It will not immediately resolve the city's problem with lead service lines or aging infrastructure. It will take time for pipes in Flint to become coated with the phosphate corrosion control.

To best protect public health, state and local authorities will continue to carry out steps outlined on Oct. 2 in a comprehensive action plan, including continued testing, the use of faucet filters and providing residents with accurate information about steps to eliminate lead exposure. The Michigan Departments of Environmental Quality and Health and Human Services are continuing to provide free water filters, free lead testing through the state laboratory for Flint water customers, and hiring additional staff to conduct health exposure monitoring for lead in drinking water.

To: Kelley, Jeff[kelley.jeff@epa.gov]; Hedman, Susan[hedman.susan@epa.gov]; Kaplan, Robert[kaplan.robert@epa.gov]; Hyde, Tinka[hyde.tinka@epa.gov]
Cc: Rowan, Anne[rowan.anne@epa.gov]; Beckmann, Ronna Erin[beckmann.ronna@epa.gov]; Harrison, Melissa[Harrison.Melissa@epa.gov]; Abrams, Dan[Abrams.Dan@epa.gov]; Poy, Thomas[poy.thomas@epa.gov]; Fortin, Denise[Fortin.Denise@epa.gov]; Deamer, Eileen[deamer.eileen@epa.gov]; Singer, Joshua[Singer.Joshua@epa.gov]; Arcaute, Francisco[Arcaute.Francisco@epa.gov]; Peterson, John[peterson.john@epa.gov]; Loop, Travis[Loop.Travis@epa.gov]
From: Cassell, Peter
Sent: Wed 10/21/2015 9:48:49 PM
Subject: New Flint Clips Updated for Oct 21 as of 5 PM Central

FLINT DRINKING WATER CLIPS

US. EPA Region 5 – as prepared by Peter Cassell *(ORA/OEC/PA)* on Oct. 21, 2015.

Update for 5 PM CEntral

□□□□□□□□□□ Task force appointed to examine Flint water controversy (Detroit Free Press)

□□□□□□□□□□ Kildee calls for federal probe of Flint water crisis (Detroit News)

□□□□□□□□□□ Kildee, Ananich call for federal investigation into Flint water crisis (MLive)

□□□□□□□□□□ Flint-area congressman calls for federal investigation into city's water problems (Detroit AP)

□□□□□□□□□□ Gov. Snyder names task force to review state actions in Flint water crisis (MLive)

□□□□□□□□□□ Gov. Snyder creates task force to investigate actions around the Flint water crisis (Michigan Radio)

□□□□□□□□□□ Gov. Snyder Announces Task Force Will Take On Flint's Water Emergency (9 and 10 news)

□□□□□□□□□□ MDEQ e-mails show stunning indifference to Flint peril (Detroit Free Press)

□□□□□□□□□□ Newly released e-mails show EPA knew about lead in Flint's drinking water (NBC 25)

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http://www.freep.com/story/news/politics/2015/10/21/task-force-appointed-examine-flint-water-controversy/74342628/

By Kathleen Gray, Detroit Free Press Lansing Bureau 5:08 p.m. EDT October 21, 2015

LANSING -- As Gov. Rick Snyder appointed an independent task force to examine the controversy over Flint's tainted water Wednesday, more lawmakers called for investigations into how the problem went unsolved for so long.

Snyder's task force will look into the actions that went into water use in the beleaguered city, as well as the testing that took place on the water after the city switched from Detroit's water and sewerage system to pulling water out of the Flint River.

Members of the task force include: former state Sen. Ken Sikkema, who now works on environmental and energy policy for Public Sector Consultants in Lansing; former state Rep. Chris Kolb, president of the Michigan Environmental Council; Dr. Matthew Davis, a professor of pediatrics and internal medicine at the University of Michigan Health System and the former chief medical executive with the Michigan Department of Community Health; Eric Rothstein, a water issues consultant with the Golardi Rothstein Group and Dr. Lawrence Reynolds, president of the Mott Children's Health Center in Flint.

“Bringing in outside experts to evaluate our actions and help monitor and advise on potential changes to law, procedures and practices will be key to continuing work on the comprehensive action plan and ensuring safe drinking water for all the residents in Flint and all of Michigan," Snyder said in a statement.

The group have a working goal of finishing their work in about three months, "but their focus is to get the job done right and if takes longer, the governor will grant that to them," said Dave Murray spokesman for Snyder.

The task force will review the history of all the decisions relating to Flint water and all of the practices that took place at the federal, state and local levels.

"We'll be looking at the decision making process on going to a different water source in Flint," Kolb said. "And we want to see what lessons we can learn because there will most likely be other communities looking to change their source of water and we want to make sure there drinking is safe too."

The committee, which informally met for the first time Wednesday, will make recommendations to the Snyder administration on things like whether laws and regulations need to change and if there are practices that need to take place in water systems across the state, Kolb said.

The appointment of the task force came on the same day that two Flint lawmakers -- U.S. Rep. Dan Kildee and state Sen. Jim Ananich, both Flint Democrats -- stepped up their calls for outside investigations of the Flint water crisis.

They've asked the EPA to conduct a review of the Michigan Department of Environmental Quality's oversight of the water switch in Flint. According to documents released through the Freedom of Information Act, the EPA had been warning the state for months that there were elevated levels of lead in the city's water before the state took significant action on the problem.

“We need an accurate and thorough investigation to determine whether the misapplication of federal water testing rules was intentional or due to negligence,” said A nanich, who also has asked the state Auditor General to look into the MDEQ's drinking water division. “Accountability is absolutely necessary to restoring Flint’s trust in our government."

Ananich also said the task force should look into who should be held accountable for the mistakes that happened in allowing the city of Flint water to continue using river water even after it was discovered that lead was leaching into the water from corroding lead pipes.

“These individuals may be the right individuals to make policy recommendations to ensure these failures never happen again, but they likely lack the investigative background to fully hold the individuals responsible for this public health crisis accountable for their actions," he said.

Kildee asked the EPA to answer questions regarding its own oversight of the MDEQ.

"The EPA needs to conduct a thorough investigation into the causes of the water problems in Flint. The failure of government to provide safe drinking water to Flint is unacceptable, and there must be accountability,” he said. "“Unfortunately, the citizens of Flint are the victims in this situation."

In 2014, Flint officials ended the city's contract with Detroit, saying that water costs were too high and estimating it would save the city $1.5 million a month. They opted instead to pull from the Karegnondi Water Authority, which is building a system to supply Genesee County with water from Lake Huron. But until the new system comes online in 2016, Flint is temporarily pulling water from the Flint River. Since it made the switch, residents have complained that the water is discolored, smells and makes them sick.

Hurley Medical Center pediatrician Dr. Mona Hanna-Attisha jump-started the state's response when she reported that the number of Flint children with elevated blood-lead levels — 5 micrograms per deciliter or more — jumped from 2.1% in the 20 months prior to Sept. 15, 2013, to 4% between Jan. 1 and Sept. 15 this year. In certain ZIP codes, the change was even more troubling, she said — jumping from 2.5% of the children tested to 6.3%.

Contact Kathleen Gray: 517-372-8661, kgray99@freepress.com or on Twitter @ michpoligal

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http://www.detroitnews.com/story/news/local/michigan/2015/10/21/flint-water-epa-kildee/74326460/

Melissa Nann Burke, The Detroit News 11:20 a.m. EDT October 21, 2015

Washington — Rep. Dan Kildee has requested an investigation by the U.S. Environmental Protection Agency into the Flint water crisis, saying the unacceptable lead levels detected in the city's water "were a failure of government at every level."

Kildee, a Democrat from Flint Township, wrote Wednesday to EPA Administrator Gina McCarthy about the need for accountability "to restore confidence and to ensure that these failures never happen again," following revelations that lead levels existed in city water at dangerous levels for months.

"Unfortunately, the citizens of Flint are the victims in this situation. They deserve a thorough investigation and answers to these questions," Kildee wrote to McCarthy.

Michigan Senate Minority Leader Jim Ananich has also requested a formal EPA review of the state environmental department's oversight of water treatment in Flint.

"We need an accurate and thorough investigation to determine whether the misapplication of federal water testing rules was intentional or due to negligence," said A nanich, D-Flint.

The request came as Gov. Rick Snyder formed what he called a five-member "independent advisory task force" headed by former Michigan Senate Majority Leader Ken Sikkema, a Republican and current senior policy fellow at Public Sector Consultants, and Chris Kolb, a Democratic former state representative and president of the Michigan Environmental Council.

The group will review how water use and testing was handled in Flint and offer recommendations for future guidelines to protect the health and safety of all of the state's residents, according to Snyder's office.

"Bringing in outside experts to evaluate our actions and help monitor and advise on potential changes to law, procedures and practices will be key to continuing work on the comprehensive action plan and ensuring safe drinking water for all the residents in Flint and all of Michigan," Snyder said in a statement.

Other task force members are Dr. Matthew Davis of the University of Michigan Health

System, Dr. Lawrence Reynolds of Mott Children's Health Center in Flint and Eric Rothstein of the Galardi Rothstein Group.

The request by Kildee and Ananich comes after Michigan's top environmental official acknowledged late Sunday the state made mistakes in its handling of Flint's long-running water crisis. He made changes, including reassigning a top official responsible for the safety of drinking water.

Dan Wyant, director of Michigan's Department of Environmental Quality, has said staff members applied the wrong standards of the Lead and Copper Rule that governs testing and monitoring for drinking water. The result was that proper controls regarding corrosion were not put in place when the city began drawing its water from the Flint River in spring 2014.

Kildee is requesting that, at minimum, the EPA conduct a review of its oversight of state programs, looking at issues such as whether the federal agency evaluated testing guidelines that the state was using in Flint.

Wyant admitted Sunday the state applied the wrong standards of the Lead and Copper Rule, using the standard for cities with populations of 50,000 or less instead of the one for a population like Flint's, which is closer to 100,000.

Kildee asks whether EPA was aware that the state was applying wrong standards of the Lead and Copper Rule. He also wants to know when the EPA first became aware of potential elevated levels of lead in Flint's water, and at what point the agency is required to notify officials after learning of such an issue.

The congressman requested that McCarthy respond by Oct. 27.

The state released documents in the past week to the media — originally requested by Virginia Tech professor Marc Edwards — showing state officials seemingly failed to heed repeated warnings from the EPA as far back as February about potential problems with Flint's water system.

The EPA is sending federal technical advisers to assist with the Flint crisis, following requests by Kildee's office last week.

Gov. Rick Snyder said this week he's asked for a report on how the state's environmental department didn't detect lead-leaching corrosion in the city's aging pipelines.

Problems began with Flint's water in the spring of 2014, when the city switched to Flint River water. Residents complained the tap water had strange coloring, smell and taste.

In the last month, those concerns were dramatically heightened by studies that show lead levels in some children have risen since the switch from Detroit's water system.

Those studies showed that, in some areas, lead levels in children's blood samples have doubled and, in two ZIP codes, tripled.

mburke@detroitnews.com

(202) 662-8736

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http://www.mlive.com/news/flint/index.ssf/2015/10/kildee_ananich_call_for_federa.html

By Ron Fonger | rfonger1@mlive.com
on October 21, 2015 at 12:36 PM, updated October 21, 2015 at 12:37 PM

FLINT, MI -- The U.S. Environmental Protection Agency is being asked to investigate the cause of water problems in Flint by U.S. Rep. Dan Kildee, D-Flint, and state Senate Minority Leader Jim Ananich, D-Flint.

In separate letters to Gina McCarthy, administrator of the EPA, today, Oct. 21, the legislators asked for the federal review of the Michigan Department of Environmental Quality's oversight of water treatment here.

Researchers from Virginia Tech university and a Hurley Medical Center doctor discovered high lead levels in Flint's water supply and rising blood lead levels in children since the city switched its water source from Lake Huron to the Flint River in April 2014.

DEQ Director Dan Wyant said this week that state regulators mistakenly allowed the city to distribute river water without requiring that it be treated to make it less corrosive.

The corrosive water has caused lead service lines in the city to leach lead at a higher rate into tap water, officials have said.

"It has become clear to me that unacceptable lead levels were a failure of government at every level," Kildee's letter says. "Despite evidence presented indicating the water quality was unsafe, repeated assurances were given by both the MDEQ and EPA that the water was safe to consume ...

"In order to restore confidence, and to ensure that these failures never happen again, I believe that the EPA needs to conduct a thorough investigation into the causes of the water problems in Flint," the letter continues. "The failure of government to provide safe drinking water to Flint is unacceptable, and there must be accountability."

Ananich's letter says several questions remain about the water sampling conducted by the city and tested by the state, including the location of sampling and instructions given to water customers to pre-flush their taps prior to testing, "resulting in lower lead level results."

The Flint Journal-MLive could not immediately reach representatives of the EPA or DEQ for comment.

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http://www.startribune.com/congressman-seeks-federal-probe-into-flint-water-problems/335240561/

By JEFF KAROUB and DAVID EGGERT Associated Press

October 21, 2015 — 4:10pm

DETROIT — Officials in Michigan are asking the U.S. Environmental Protection Agency to answer questions about its oversight of state environmental regulators after elevated blood-lead levels were found in children whose Flint homes received river water.

U.S. Rep. Dan Kildee, who represents the Flint area in Congress, and state Senate Minority Leader Jim Ananich said Wednesday that they have sent letters to the EPA.

Flint reconnected to Detroit's water system last week in hopes of resolving the health emergency.

"It has become clear to me that unacceptable lead levels were a failure of government at every level," Kildee wrote in a letter to EPA Administrator Gina McCarthy. "In order to restore confidence, and to ensure that these failures never happen again, I believe that the EPA needs to conduct a thorough investigation into the causes of the water problems in Flint."

The EPA told The Associated Press that the agency is reviewing the requests from Democrats Ananich and Kildee.

Flint, a city of about 99,000 people, switched from Detroit's water system last year in a cost-cutting move. The Flint River was supposed to be an interim source until the city could join a new system getting water from Lake Huron that's scheduled to be completed next year. But residents complained about the taste, smell and appearance of water coming into their homes and businesses from the Flint River.

Doctors later discovered corrosive water was drawing lead from aging pipes in some homes.

State Department of Environmental Quality Director Dan Wyant said Monday that federal drinking water rules were not followed properly when Flint made the switch to river water.

Gov. Rick Snyder and the Republican-led Legislature last week approved $9.3 million in aid to address the crisis, which included $6 million to help temporarily reconnect the city to Detroit's water system.

Ananich on Tuesday called for the state Legislature to hold hearings on the water crisis.

Michigan's Republican Senate Majority Leader Arlan Meekhof told reporters Wednesday that he was "concerned" about the crisis and wants to see the Snyder administration's "after-action" reports. But he was noncommittal when asked about Ananich's request for legislative hearings.

"At this point I haven't decided if that's an appropriate course of action," Meekhof said.

"There's a whole lot of blame to go around, but at this point we now have fixed the problem so we don't have the problems that lead to lead contamination in schools, as far as I know," he said.

Snyder on Wednesday announced the creation of an independent advisory task force to review Flint's water use and testing. The group includes public health and medicine, water management and environmental protection experts.

"Bringing in outside experts to evaluate our actions and help monitor and advise on potential changes to law, procedures and practices will be key to continuing work on the comprehensive action plan and ensuring safe drinking water for all the residents in Flint and all of Michigan," Snyder said in a release.

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http://www.mlive.com/news/flint/index.ssf/2015/10/gov_snyder_names_task_force_to.html

By Ron Fonger | rfonger1@mlive.com
on October 21, 2015 at 4:42 PM, updated October 21, 2015 at 4:44 PM

Gov. Rick Snyder announces support of the city of Flint's plan to switch back to Detroit water due to increasing lead levels during a news conference with Mayor Dayne Walling in Flint on Thursday Oct. 8, 2015Flint Journal file photo

FLINT, MI -- Gov. Rick Snyder has appointed a task force to review "actions regarding water use and testing in Flint" and to make recommendations for future guidelines.

The governor announced creation of the task force in a news release Wednesday, Oct. 21, the same day U.S. Rep. Dan Kildee, D-Flint, and state Sen. Jim Ananich, D-Flint, called for the U.S. Environmental Protection Agency to carry out a similar review.

"Bringing in outside experts to evaluate our actions and help monitor and advise on potential changes to law, procedures and practices will be key to continuing work on the comprehensive action plan and ensuring safe drinking water for all the residents in Flint and all of Michigan," Snyder said in a news release.

State Department of Environmental Quality Director Dan Wyant said this week that state regulators mistakenly allowed Flint to distribute Flint River water without requiring that it be treated to make it less corrosive since April 2014.

Corrosive water has caused service lines to leach lead at a faster rate into tap water, elevating the level of lead in the water and in the blood of infants and children, experts and officials have said.

Members of the state task force are Ken Sikkema of Public Sector Consultants, Chris Kolb of the Michigan Environmental Council, Dr. Matthew Davis of the University of Michigan Health System, Eric Rothstein of the Galardi Rothstein Group and Dr. Lawrence Reynolds of Mott Children's Hospital.

Sikkema and Kolb will co-chair the task force, the news release says.

Reynolds was one of the health officials in Flint who sounded warnings about the increasing lead levels since the city changed its drinking water source from Lake Huron to the Flint River more than 17 months ago.

Sara Wurfel, a spokeswoman for Snyder, said in an email that the task force will "operate as transparently as possible and there are certainly expected to be opportunities for public input."

Wurfel did not say in response to questions from The Flint Journal-MLive whether the task force would operate under the provisions of the Open Meetings Act, conduct its business in public or have subpoena powers.

"The task force will be independent and our administration has pledged full and complete cooperation," she said.

The governor's news release says he wants an unbiased report that's focused on steps taken in the past and recommendations that could improve practices.

Here is more information on each task force member:

Sikkema is a senior policy fellow at Public Sector Consultants, where he specializes in public finance, environment, and energy policy. Prior to joining the firm, Sikkema served in both the Michigan House and Senate, including four years as Senate majority leader.

Kolb is president of the Michigan Environmental Council, a statewide coalition of 70 environmental, public health and faith-based nonprofit groups. Before joining the MEC, he represented Ann Arbor in the state House for six years and served six years on the Ann Arbor City Council.

Davis is professor of pediatrics and internal medicine at the University of Michigan Health System and professor of public policy at the Gerald R. Ford School at the University of Michigan. He previously served as the chief medical executive of the Michigan Department of Community Health/Department of Health and Human Services.

Rothstein is a national water issues consultant and principal at the Galardi Rothstein Group. He served as an independent adviser on the creation of the Great Lakes Water Authority.

Reynolds is a pediatrician in Flint who serves as president of the Mott Children's Health Center. He received his medical degree from Howard University College of Medicine and has been in practice for 36 years. He has served as president of the Genesee County Medical Society and the Michigan Chapter of the American Academy of Pediatrics.

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http://michiganradio.org/post/gov-snyder-creates-task-force-investigate-actions-around-flint-water-crisis

By Mark Brush · 2 hours ago

Gov. Rick Snyder announced the creation of an “independent advisory task force” that will look into the actions surrounding the management and testing of Flint’s drinking water system.

The goal, according to a press release from the governor’s office, is to investigate what happened and to prevent the kind of problems that occurred with Flint’s drinking water system in other systems in the state.

A state-appointed emergency manager made the decision to switch the city’s water supply in the spring of 2014. The emergency manager switched to Flint River water to save money. Complaints about the quality of the water surfaced soon after. The state didn’t act until independent researchers pointed out that some residents were likely being exposed to unsafe levels of lead because of the way the water was being managed.

The state, the city, and a private foundation recently put up $12 million to switch the city back to water from Lake Huron managed by the Detroit Sewerage & Water Department.

More from the press release:

Snyder said the administration will fully cooperate with task force members, saying he wants an unbiased report focusing on steps taken in the past and recommendations that could improve practices to ensure all residents have access to safe, clean water

The task force will be co-chaired by Ken Sikkema of Public Sector Consultants and Chris Kolb,of the Michigan Environmental Council. Members will include Dr. Matthew Davis of the University of Michigan Health System, Eric Rothstein of the Galardi Rothstein Group, and Dr. Lawrence Reynolds of Mott Children's Health Center in Flint.

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http://www.9and10news.com/story/30318477/gov-snyder-announces-task-force-will-take-on-flints-water-emergency

Posted: Oct 21, 2015 1:52 PM CST Updated: Oct 21, 2015 1:52 PM CST

By Jamie Valentine, Producer

Governor Snyder says a Flint water task force will take on the city's water emergency.

Recent problems with high levels of lead in the water prompted the emergency.

Governor Snyder says experts in public health and medicine, along with water management and environmental protection will work together on protecting the people of Flint.

High lead levels have been found in children drinking the Flint water.

The city has now reconnected to Detroit's water system to stop any other health emergencies.

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http://www.freep.com/story/opinion/columnists/nancy-kaffer/2015/10/21/indifference-characterized-state-approach-flint-water/74289430/

By Nancy Kaffer, Detroit Free Press Columnist 3:27 p.m. EDT October 21, 2015

9 CONNECT 30 TWEETLINKEDIN 14 COMMENTEMAILMORE

"Apparently it's going to be a thing now."

Lackadaisical and dismissive -- that's the tone of a Michigan Department of Environmental Quality spokeswoman's response to a July e-mail noting that a member of a second media outlet had made an inquiry about elevated lead levels in Flint's drinking water. And it's a perfectly tone-deaf representation of that agency's response to the public health crisis then brewing in that impoverished town.

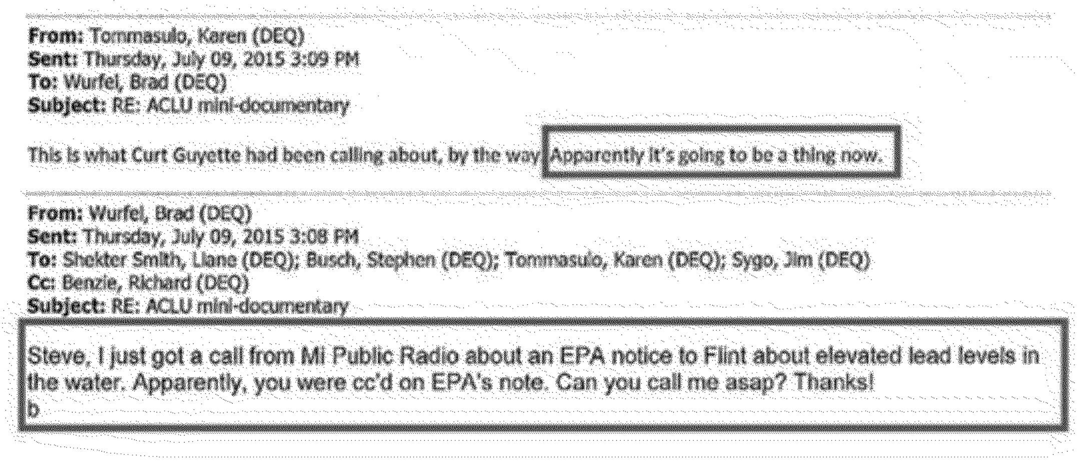
This week, the state acknowledged that it made mistakes in approving and overseeing Flint's transition to a new water source last year, that it misunderstood and misapplied federal rules meant to keep dangerous substances like lead and copper out of drinking water. The state was finally spurred to action after a local pediatrician found that an increasing number of Flint kids had elevated blood-lead levels.

Back in July, it was a different story. Months of MDEQ e-mails, obtained through the Freedom of Information Act by Virginia Tech University researcher Marc Edwards, show a stunning indifference on the part of state environmental officials, who seemed focused on deflecting criticism. Flint, officials insisted, with MDEQ's blessing was in compliance with federal safety guidelines. End of story.

Frankly, it seemed some state officials thought dealing with inquiries about lead in Flint was a hassle.

"... I just got a call from MI Public Radio[sic] about an EPA notice to Flint about elevated lead levels in the water. Apparently, you were cc'd on EPA's note. Can you call me ASA P? Thanks!" MDEQ spokesman Brad Wurfel wrote to a handful of department officials in a July 9 e-mail.

Karen Tommasulo, another MDEQ public information officer, wrote back: "This is what Curt Guyette had been calling about, by the way. Apparently it's going to be a thing now."



From: Tommasulo, Karen (DEQ)
Sent: Thursday, July 09, 2015 3:09 PM
To: Wurfel, Brad (DEQ)
Subject: RE: ACLU mini-documentary

This is what Curt Guyette had been calling about, by the way Apparently it's going to be a thing now.

From: Wurfel, Brad (DEQ)
Sent: Thursday, July 09, 2015 3:08 PM
To: Shekter Smith, Liane (DEQ); Busch, Stephen (DEQ); Tommasulo, Karen (DEQ); Sygo, Jim (DEQ)
Cc: Benzie, Richard (DEQ)
Subject: RE: ACLU mini-documentary

Steve, I just got a call from MI Public Radio about an EPA notice to Flint about elevated lead levels in the water. Apparently, you were cc'd on EPA's note. Can you call me asap? Thanks!
b

This e-mail, obtained by Virginia Tech researcher Marc Edwards, is a communication between public relations officials at the Michigan Department of Environmental Quality. Emphasis added by Edwards. (Photo: Marc Edwards))

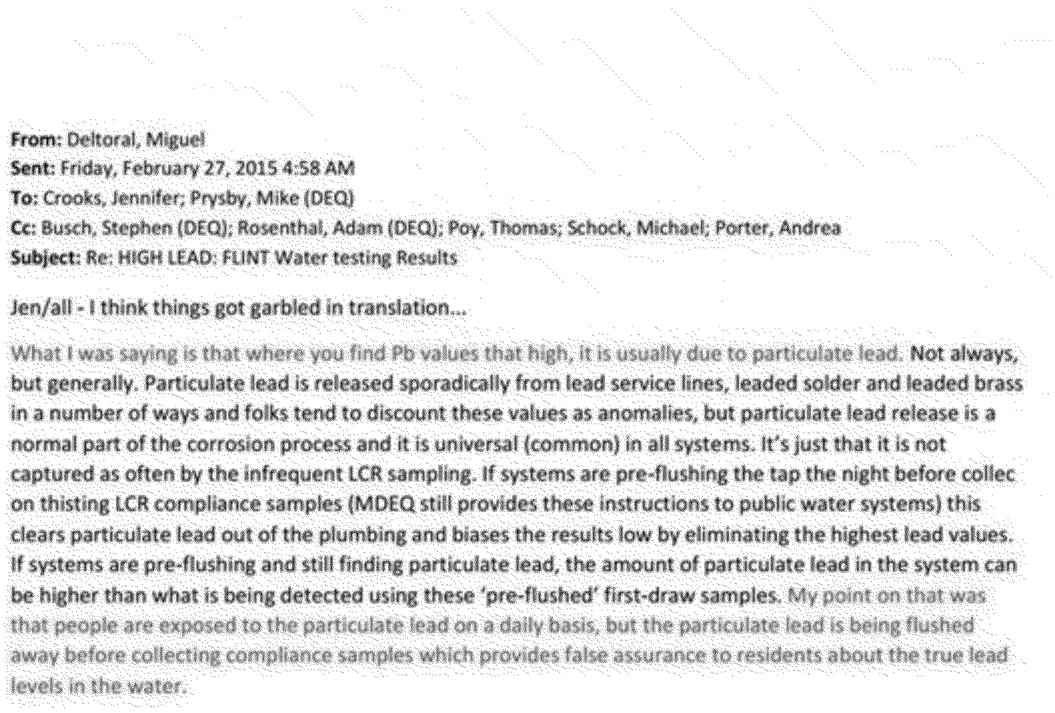
For months, residents had reported problems with Flint's water, some caused by the local treatment plant's addition of a disinfectant to the water supply. But now there were concerns about lead levels. Guyette, an investigative reporter for the American Civil Liberties Union, was preparing to break a leaked U.S. Environmental Protection Agency memo that called nearly every aspect of the state's lead monitoring in Flint into question. He asked for comment. Repeatedly. ("ACLU guy is back today," Tommasulo wrote in a July 8 e-mail.)

MDEQ officials stalled. Guyette published. Then Michigan Radio got the memo.

With at least two reporters on the story, Flint's lead problem -- despite MDEQ officials' best efforts to the contrary -- had, indeed, become a thing.

But it would be months before MDEQ officials, much less Gov. Rick Snyder, would make that acknowledgement publicly, or move to improve Flint's drinking water.

The state monitored Flint's water for a year; in the first six-month round of testing completed last December, results showed Flint's water had 6 parts per billion of lead, below the EPA's actionable level of 15 ppb, but in excess of that agency's 5 ppb threshold for reevaluation of local water treatment plans. A second round of tests, finished in June, showed up to 11 ppb of lead in Flint water, even though the MDEQ advised residents to pre-flush water from pipes before collecting samples, a method not approved by the EPA. The spike in lead is a trend officials should've found disturbing.



From: Deltoral, Miguel
Sent: Friday, February 27, 2015 4:58 AM
To: Crooks, Jennifer; Prysby, Mike (DEQ)
Cc: Busch, Stephen (DEQ); Rosenthal, Adam (DEQ); Poy, Thomas; Schock, Michael; Porter, Andrea
Subject: Re: HIGH LEAD: FLINT Water testing Results

Jen/all - I think things got garbled in translation...

What I was saying is that where you find Pb values that high, it is usually due to particulate lead. **Not always, but generally. Particulate lead is released sporadically from lead service lines, leaded solder and leaded brass in a number of ways and folks tend to discount these values as anomalies, but particulate lead release is a normal part of the corrosion process and it is universal (common) in all systems. It's just that it is not captured as often by the infrequent LCR sampling. If systems are pre-flushing the tap the night before collec on thisting LCR compliance samples (MDEQ still provides these instructions to public water systems) this clears particulate lead out of the plumbing and biases the results low by eliminating the highest lead values. If systems are pre-flushing and still finding particulate lead, the amount of particulate lead in the system can be higher than what is being detected using these 'pre-flushed' first-draw samples.** My point on that was that people are exposed to the particulate lead on a daily basis, but the particulate lead is being flushed away before collecting compliance samples which provides false assurance to residents about the true lead levels in the water.

This e-mail, acquired by Virginia Tech researcher Marc Edwards through the Freedom of Information Act, show an email from EPA drinking water specialist Miguel Del Toral and MDEQ officials. Emphasis added by Edwards. (Photo: Marc Edwards)

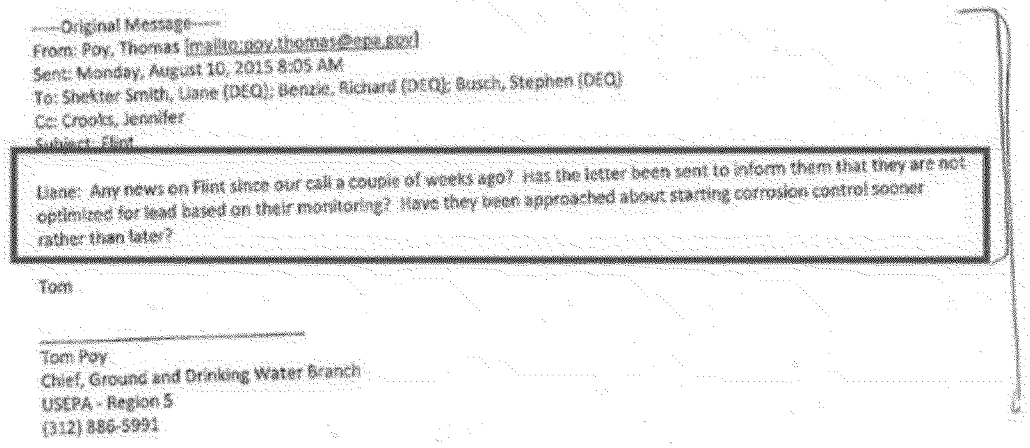
But while discussing the EPA's memo privately, acknowledging the city wasn't adequately treating its water -- even as results of water analysis by Virginia Tech's Edwards began to show heightened concentrations of lead in the water -- department officials continued to publicly insist that Flint's water supply was safe.

Why? The e-mails -- largely correspondence among Wurfel, MDEQ district engineer Michael Prysby, district supervisor Stephen Busch, former drinking water chief Liane Shekter Smith and EPA officials --don't offer much explanation, beyond petty insistence that the department hadn't erred, a kind of bruised-ego approach that considered any criticism distasteful, and a bureaucratic blindness to scientific evidence that should have suggested that meeting water standards may not have been sufficient to ensure residents' safety.

Gov. Rick Snyder has formed an independent task force to review government actions in Flint. The decision to switch the water supply was made while the city was under the oversight of Snyder-appointed emergency managers. U.S. Rep. Dan Kildee and state Rep. Jim Ananich, both Flint Democrats, have called for a federal investigation.

In February, EPA drinking water specialist Miguel Del Toral, the memo's author, informed state officials that there was likely particulate lead in Flint's water, and that this was likely because the local treatment plant hadn't employed corrosion control -- the addition of chemicals that form a film inside aging service lines to prevent lead from leaching into the water.

Flint began pumping its own water from the Flint River in 2014; it opted not to add those chemicals to its water, something officials now say probably violated of federal standards -- instead adding lime to decrease the acidity, and thus corrosivity, of the water. The EPA advised the MDEQ, as early as February and consistently throughout the year, that Flint's water system should be using corrosion control. But it never happened. In October, the city switched back to Detroit water.



-----Original Message-----
From: Poy, Thomas [mailto:poy.thomas@epa.gov]
Sent: Monday, August 10, 2015 8:05 AM
To: Shekter Smith, Liane (DEQ); Benzie, Richard (DEQ); Busch, Stephen (DEQ)
Cc: Crooks, Jennifer
Subject: Flint

Liane: Any news on Flint since our call a couple of weeks ago? Has the letter been sent to inform them that they are not optimized for lead based on their monitoring? Have they been approached about starting corrosion control sooner rather than later?

Tom

Tom Poy
Chief, Ground and Drinking Water Branch
USEPA - Region 5
(312) 886-5991

This e-mail, obtained by Virginia Tech researcher Marc Edwards, is from an EPA representative asking MDEQ officials about having Flint start using corrosion controls in its water. Emphasis added by Edwards. (Photo: Marc Edwards)

In an e-mail before a conference call to discuss the memo, Shekter Smith asked the EPA to confirm in writing that the state was in compliance with federal rules, and expressed displeasure that the memo had been leaked. She never mentioned the memo's content.

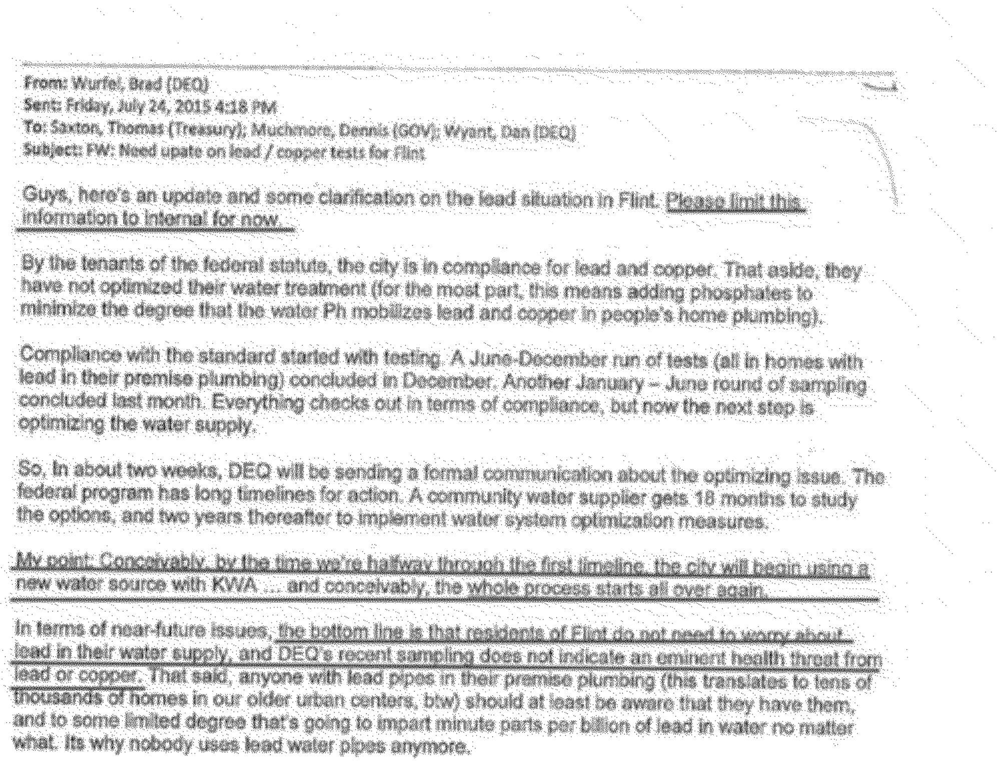
The EPA water specialist, Del Toral, was dismissed by Wurfel in September as a "rogue employee"; Edwards, the Virginia Tech researcher and McArthur genius grant recipient -- who has tested water samples from hundreds of Flint homes -- was written off as a man with an agenda, someone whose work didn't merit serious examination. Community groups, Wurfel wrote, were keeping residents "hopped up."

Former drinking water chief Liane Shekter Smith -- she's been reassigned within MDEQ because of her role in the crisis -- earnestly explained to Flint resident LeeAnne Walters in an e-mail that samples taken from her home couldn't be included in citywide test results, because Walters had installed a filter. Yet filtered samples taken from Walters' home showed lead concentrations astronomically higher than the EPA's 15 ppb limit -- 107 ppb, 397 ppb, 707 ppb. It's difficult to understand why Walters' filtered samples -- with lead concentrations that were off the charts -- didn't appear to trigger alarm bells for Shekter Smith, or any other MDEQ official.

It's among the many inexplicable exchanges revealed in the e-mails.

Again and again, MDEQ officials noted that the city planned to switch water supplies again next year, when a new regional water authority is complete. Any testing or treatment plan would just have to be re-done -- so why bother? When Virginia Tech researcher Edwards' team began working in Flint, state officials wondered whether to let him know that the city was changing its water supply, and not to waste resources.

Everything was fine, MDEQ insisted, in alignment with federal standards.



From: Wurfel, Brad (DEQ)
Sent: Friday, July 24, 2015 4:18 PM
To: Saxton, Thomas (Treasury); Muchmore, Dennis (GOV); Wyant, Dan (DEQ)
Subject: FW: Need upate on lead / copper tests for Flint

Guys, here's an update and some clarification on the lead situation in Flint. Please limit this information to internal for now.

By the tenants of the federal statute, the city is in compliance for lead and copper. That aside, they have not optimized their water treatment (for the most part, this means adding phosphates to minimize the degree that the water Ph mobilizes lead and copper in people's home plumbing).

Compliance with the standard started with testing. A June-December run of tests (all in homes with lead in their premise plumbing) concluded in December. Another January – June round of sampling concluded last month. Everything checks out in terms of compliance, but now the next step is optimizing the water supply.

So, In about two weeks, DEQ will be sending a formal communication about the optimizing issue. The federal program has long timelines for action. A community water supplier gets 18 months to study the options, and two years thereafter to implement water system optimization measures.

My point: Conceivably, by the time we're halfway through the first timeline, the city will begin using a new water source with KWA ... and conceivably, the whole process starts all over again.

In terms of near-future issues, the bottom line is that residents of Flint do not need to worry about lead in their water supply, and DEQ's recent sampling does not indicate an eminent health threat from lead or copper. That said, anyone with lead pipes in their premise plumbing (this translates to tens of thousands of homes in our older urban centers, btw) should at least be aware that they have them, and to some limited degree that's going to impart minute parts per billion of lead in water no matter what. Its why nobody uses lead water pipes anymore.

This e-mail, obtained by Virginia Tech researcher Marc Edwards through the Freedom of Information Act, updating administration officials on questions regarding the safety of Flint's water. Emphasis added by Edwards. (Photo: Marc Edwards)

And they might have thought that was true. Or true enough.

If there's such a thing as benign neglect, this was malignant indifference, on an institutional level.

I'm reminded of the old cliche: For evil to flourish, all that's required is that good people do nothing. In Flint, what happened was more insidious: For evil to flourish, all that's required is for people to do exactly, and only, what is required of them. Nothing less.

Nothing more.

Contact Nancy Kaffer at nkaffer@freepress.com. Follow her on Twitter @nancykaffer.

59 CONNECT 30 TWEETLINKEDIN 14 COMMENTEMAILMORE

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http://nbc25news.com/news/local/newly-released-e-mails-show-epa-knew-about-lead-in-flints-drinking-water

By Stephanie Parkinson Tuesday, October 20th 2015

FLINT — Newly released e-mails show, as far back as February, the federal government knew of the dangers lurking in Flint's drinking water.

Documents obtained by Virginia Tech researchers reveal discussions between Michigan Department of Environmental Quality, Environmental Protection Agency, and city leaders.

Inside those e-mails is communication that shows the EPA downplayed health concerns brought forward by one of its own.

February 27 Miguel Del Toral, a drinking water expert with the EPA, sent an e-mail to several people within MDEQ telling them lead was in the drinking water in Flint.

In April, he sent another memo, this time to the EPA, again warning of high lead levels in Flint's water.

All of this was more than seven months before any action was taken.

Flint Mayor Dayne Walling says he was left out of the loop.

"Experts were bringing their advice to the table and it was stuck in Lansing, and the rest of us had no idea," said Walling.

The e-mail, stating lead was in the water in Flint, was not sent to anyone within the City of Flint.

Other e-mails reveal Mayor Walling asked the EPA about Del Toral's memo. He was told it was a draft report and once it had been vetted it would be shared.

"I was shocked by the confusion," said Walling. "The EPA delegated authority to the MDEQ, information wasn't coming, what did come was bad information and it led to the serious situation that we're in now. There has to be an investigation."

What these e-mails also reveal is by mid-August the City of Flint's water plant supervisor was told by the MDEQ the city needed to put corrosion control measures in place right away, to prevent lead from getting in the drinking water.

Mayor Walling says the city reacted as quickly as it could, but says an internal investigation in the city will also be done.

"We're going to get to the bottom of everything that happened," said Walling. "We need to understand everything that happened before then, and who did what, and what they knew."

Our calls to the EPA were not returned in time for air Tuesday.

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To: Henry, Timothy[henry.timothy@epa.gov]; Davis, CatherineM[Davis.CatherineM@epa.gov]
Cc: Beckmann, Ronna Erin[beckmann.ronna@epa.gov]; Deamer, Eileen[deamer.eileen@epa.gov]
From: Fortin, Denise
Sent: Wed 10/21/2015 10:04:39 PM
Subject: FW: New Flint Clips Updated for Oct 21 as of 5 PM Central

Denise Fortin

Congressional Liaison

Office of Regional Administrator

U.S. Environmental Protection Agency

312-886-9859

From: Cassell, Peter
Sent: Wednesday, October 21, 2015 4:49 PM
To: Kelley, Jeff; Hedman, Susan; Kaplan, Robert; Hyde, Tinka
Cc: Rowan, Anne; Beckmann, Ronna Erin; Harrison, Melissa; Abrams, Dan; Poy, Thomas; Fortin, Denise; Deamer, Eileen; Singer, Joshua; Arcaute, Francisco; Peterson, John; Loop, Travis
Subject: New Flint Clips Updated for Oct 21 as of 5 PM Central

FLINT DRINKING WATER CLIPS

US. EPA Region 5 – as prepared by Peter Cassell *(ORA/OEC/PA)* on Oct. 21, 2015.

Update for 5 PM CEntral

- Task force appointed to examine Flint water controversy (Detroit Free Press)
- Kildee calls for federal probe of Flint water crisis (Detroit News)
- Kildee, Ananich call for federal investigation into Flint water crisis (MLive)
- Flint-area congressman calls for federal investigation into city's water problems (Detroit AP)
- Gov. Snyder names task force to review state actions in Flint water crisis (MLive)
- Gov. Snyder creates task force to investigate actions around the Flint water crisis (Michigan Radio)
- Gov. Snyder Announces Task Force Will Take On Flint's Water Emergency (9 and

10 news)
- MDEQ e-mails show stunning indifference to Flint peril (Detroit Free Press)
- Newly released e-mails show EPA knew about lead in Flint's drinking water (NBC 25)

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http://www.freep.com/story/news/politics/2015/10/21/task-force-appointed-examine-flint-water-controversy/74342628/

By Kathleen Gray, Detroit Free Press Lansing Bureau 5:08 p.m. EDT October 21, 2015

LANSING -- As Gov. Rick Snyder appointed an independent task force to examine the controversy over Flint's tainted water Wednesday, more lawmakers called for investigations into how the problem went unsolved for so long.

Snyder's task force will look into the actions that went into water use in the beleaguered city, as well as the testing that took place on the water after the city switched from Detroit's water and sewerage system to pulling water out of the Flint River.

Members of the task force include: former state Sen. Ken Sikkema, who now works on environmental and energy policy for Public Sector Consultants in Lansing; former state Rep. Chris Kolb, president of the Michigan Environmental Council; Dr. Matthew Davis, a professor of pediatrics and internal medicine at the University of Michigan Health System and the former chief medical executive with the Michigan Department of Community Health; Eric Rothstein, a water issues consultant with the Golardi Rothstein Group and Dr. Lawrence Reynolds, president of the Mott Children's Health Center in Flint.

“Bringing in outside experts to evaluate our actions and help monitor and advise on potential changes to law, procedures and practices will be key to continuing work on the comprehensive action plan and ensuring safe drinking water for all the residents in Flint and all of Michigan," Snyder said in a statement.

The group have a working goal of finishing their work in about three months, "but their focus is to get the job done right and if takes longer, the governor will grant that to them," said Dave Murray spokesman for Snyder.

The task force will review the history of all the decisions relating to Flint water and all of the practices that took place at the federal, state and local levels.

"We'll be looking at the decision making process on going to a different water source in

Flint," Kolb said. "And we want to see what lessons we can learn because there will most likely be other communities looking to change their source of water and we want to make sure there drinking is safe too."

The committee, which informally met for the first time Wednesday, will make recommendations to the Snyder administration on things like whether laws and regulations need to change and if there are practices that need to take place in water systems across the state, Kolb said.

The appointment of the task force came on the same day that two Flint lawmakers -- U.S. Rep. Dan Kildee and state Sen. Jim Ananich, both Flint Democrats -- stepped up their calls for outside investigations of the Flint water crisis.

They've asked the EPA to conduct a review of the Michigan Department of Environmental Quality's oversight of the water switch in Flint. According to documents released through the Freedom of Information Act, the EPA had been warning the state for months that there were elevated levels of lead in the city's water before the state took significant action on the problem.

“We need an accurate and thorough investigation to determine whether the misapplication of federal water testing rules was intentional or due to negligence,” said A nanich, who also has asked the state Auditor General to look into the MDEQ's drinking water division. “Accountability is absolutely necessary to restoring Flint’s trust in our government."

Ananich also said the task force should look into who should be held accountable for the mistakes that happened in allowing the city of Flint water to continue using river water even after it was discovered that lead was leaching into the water from corroding lead pipes.

“These individuals may be the right individuals to make policy recommendations to ensure these failures never happen again, but they likely lack the investigative background to fully hold the individuals responsible for this public health crisis accountable for their actions," he said.

Kildee asked the EPA to answer questions regarding its own oversight of the MDEQ.

"The EPA needs to conduct a thorough investigation into the causes of the water problems in Flint. The failure of government to provide safe drinking water to Flint is unacceptable, and there must be accountability,” he said. "“Unfortunately, the citizens of Flint are the victims in this situation."

In 2014, Flint officials ended the city's contract with Detroit, saying that water costs were too high and estimating it would save the city $1.5 million a month. They opted instead to pull from the Karegnondi Water Authority, which is building a system to supply Genesee County with water from Lake Huron. But until the new system comes online in

2016, Flint is temporarily pulling water from the Flint River. Since it made the switch, residents have complained that the water is discolored, smells and makes them sick.

Hurley Medical Center pediatrician Dr. Mona Hanna-Attisha jump-started the state's response when she reported that the number of Flint children with elevated blood-lead levels — 5 micrograms per deciliter or more — jumped from 2.1% in the 20 months prior to Sept. 15, 2013, to 4% between Jan. 1 and Sept. 15 this year. In certain ZIP codes, the change was even more troubling, she said — jumping from 2.5% of the children tested to 6.3%.

Contact Kathleen Gray: 517-372-8661, kgray99@freepress.com or on Twitter @ michpoligal

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http://www.detroitnews.com/story/news/local/michigan/2015/10/21/flint-water-epa-kildee/74326460/

Melissa Nann Burke, The Detroit News 11:20 a.m. EDT October 21, 2015

Washington — Rep. Dan Kildee has requested an investigation by the U.S. Environmental Protection Agency into the Flint water crisis, saying the unacceptable lead levels detected in the city's water "were a failure of government at every level."

Kildee, a Democrat from Flint Township, wrote Wednesday to EPA Administrator Gina McCarthy about the need for accountability "to restore confidence and to ensure that these failures never happen again," following revelations that lead levels existed in city water at dangerous levels for months.

"Unfortunately, the citizens of Flint are the victims in this situation. They deserve a thorough investigation and answers to these questions," Kildee wrote to McCarthy.

Michigan Senate Minority Leader Jim Ananich has also requested a formal EPA review of the state environmental department's oversight of water treatment in Flint.

"We need an accurate and thorough investigation to determine whether the misapplication of federal water testing rules was intentional or due to negligence," said A nanich, D-Flint.

The request came as Gov. Rick Snyder formed what he called a five-member "independent advisory task force" headed by former Michigan Senate Majority Leader Ken Sikkema, a Republican and current senior policy fellow at Public Sector Consultants, and Chris Kolb, a Democratic former state representative and president of the Michigan Environmental Council.

The group will review how water use and testing was handled in Flint and offer recommendations for future guidelines to protect the health and safety of all of the state's residents, according to Snyder's office.

"Bringing in outside experts to evaluate our actions and help monitor and advise on potential changes to law, procedures and practices will be key to continuing work on the comprehensive action plan and ensuring safe drinking water for all the residents in Flint and all of Michigan," Snyder said in a statement.

Other task force members are Dr. Matthew Davis of the University of Michigan Health System, Dr. Lawrence Reynolds of Mott Children's Health Center in Flint and Eric Rothstein of the Galardi Rothstein Group.

The request by Kildee and Ananich comes after Michigan's top environmental official acknowledged late Sunday the state made mistakes in its handling of Flint's long-running water crisis. He made changes, including reassigning a top official responsible for the safety of drinking water.

Dan Wyant, director of Michigan's Department of Environmental Quality, has said staff members applied the wrong standards of the Lead and Copper Rule that governs testing and monitoring for drinking water. The result was that proper controls regarding corrosion were not put in place when the city began drawing its water from the Flint River in spring 2014.

Kildee is requesting that, at minimum, the EPA conduct a review of its oversight of state programs, looking at issues such as whether the federal agency evaluated testing guidelines that the state was using in Flint.

Wyant admitted Sunday the state applied the wrong standards of the Lead and Copper Rule, using the standard for cities with populations of 50,000 or less instead of the one for a population like Flint's, which is closer to 100,000.

Kildee asks whether EPA was aware that the state was applying wrong standards of the Lead and Copper Rule. He also wants to know when the EPA first became aware of potential elevated levels of lead in Flint's water, and at what point the agency is required to notify officials after learning of such an issue.

The congressman requested that McCarthy respond by Oct. 27.

The state released documents in the past week to the media — originally requested by Virginia Tech professor Marc Edwards — showing state officials seemingly failed to heed repeated warnings from the EPA as far back as February about potential problems with Flint's water system.

The EPA is sending federal technical advisers to assist with the Flint crisis, following requests by Kildee's office last week.

Gov. Rick Snyder said this week he's asked for a report on how the state's environmental department didn't detect lead-leaching corrosion in the city's aging pipelines.

Problems began with Flint's water in the spring of 2014, when the city switched to Flint River water. Residents complained the tap water had strange coloring, smell and taste.

In the last month, those concerns were dramatically heightened by studies that show lead levels in some children have risen since the switch from Detroit's water system. Those studies showed that, in some areas, lead levels in children's blood samples have doubled and, in two ZIP codes, tripled.

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(202) 662-8736

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http://www.mlive.com/news/flint/index.ssf/2015/10/kildee_ananich_call_for_federa.html

By Ron Fonger | rfonger1@mlive.com
on October 21, 2015 at 12:36 PM, updated October 21, 2015 at 12:37 PM

FLINT, MI -- The U.S. Environmental Protection Agency is being asked to investigate the cause of water problems in Flint by U.S. Rep. Dan Kildee, D-Flint, and state Senate Minority Leader Jim Ananich, D-Flint.

In separate letters to Gina McCarthy, administrator of the EPA, today, Oct. 21, the legislators asked for the federal review of the Michigan Department of Environmental Quality's oversight of water treatment here.

Researchers from Virginia Tech university and a Hurley Medical Center doctor discovered high lead levels in Flint's water supply and rising blood lead levels in children since the city switched its water source from Lake Huron to the Flint River in April 2014.

DEQ Director Dan Wyant said this week that state regulators mistakenly allowed the city to distribute river water without requiring that it be treated to make it less corrosive.

The corrosive water has caused lead service lines in the city to leach lead at a higher rate into tap water, officials have said.

"It has become clear to me that unacceptable lead levels were a failure of government at every level," Kildee's letter says. "Despite evidence presented indicating the water quality was unsafe, repeated assurances were given by both the MDEQ and EPA that the water was safe to consume ...

"In order to restore confidence, and to ensure that these failures never happen again, I believe that the EPA needs to conduct a thorough investigation into the causes of the water problems in Flint," the letter continues. "The failure of government to provide safe drinking water to Flint is unacceptable, and there must be accountability."

Ananich's letter says several questions remain about the water sampling conducted by the city and tested by the state, including the location of sampling and instructions given to water customers to pre-flush their taps prior to testing, "resulting in lower lead level results."

The Flint Journal-MLive could not immediately reach representatives of the EPA or DEQ for comment.

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http://www.startribune.com/congressman-seeks-federal-probe-into-flint-water-problems/335240561/

By JEFF KAROUB and DAVID EGGERT Associated Press

October 21, 2015 — 4:10pm

DETROIT — Officials in Michigan are asking the U.S. Environmental Protection Agency to answer questions about its oversight of state environmental regulators after elevated blood-lead levels were found in children whose Flint homes received river water.

U.S. Rep. Dan Kildee, who represents the Flint area in Congress, and state Senate Minority Leader Jim Ananich said Wednesday that they have sent letters to the EPA.

Flint reconnected to Detroit's water system last week in hopes of resolving the health emergency.

"It has become clear to me that unacceptable lead levels were a failure of government at every level," Kildee wrote in a letter to EPA Administrator Gina McCarthy. "In order to restore confidence, and to ensure that these failures never happen again, I believe that the EPA needs to conduct a thorough investigation into the causes of the water problems in Flint."

The EPA told The Associated Press that the agency is reviewing the requests from Democrats Ananich and Kildee.

Flint, a city of about 99,000 people, switched from Detroit's water system last year in a cost-cutting move. The Flint River was supposed to be an interim source until the city could join a new system getting water from Lake Huron that's scheduled to be completed next year. But residents complained about the taste, smell and appearance of water coming into their homes and businesses from the Flint River.

Doctors later discovered corrosive water was drawing lead from aging pipes in some homes.

State Department of Environmental Quality Director Dan Wyant said Monday that federal drinking water rules were not followed properly when Flint made the switch to river water.

Gov. Rick Snyder and the Republican-led Legislature last week approved $9.3 million in aid to address the crisis, which included $6 million to help temporarily reconnect the city to Detroit's water system.

Ananich on Tuesday called for the state Legislature to hold hearings on the water crisis.

Michigan's Republican Senate Majority Leader Arlan Meekhof told reporters Wednesday that he was "concerned" about the crisis and wants to see the Snyder administration's "after-action" reports. But he was noncommittal when asked about Ananich's request for legislative hearings.

"At this point I haven't decided if that's an appropriate course of action," Meekhof said.

"There's a whole lot of blame to go around, but at this point we now have fixed the problem so we don't have the problems that lead to lead contamination in schools, as far as I know," he said.

Snyder on Wednesday announced the creation of an independent advisory task force to review Flint's water use and testing. The group includes public health and medicine, water management and environmental protection experts.

"Bringing in outside experts to evaluate our actions and help monitor and advise on potential changes to law, procedures and practices will be key to continuing work on the comprehensive action plan and ensuring safe drinking water for all the residents in Flint and all of Michigan," Snyder said in a release.

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http://www.mlive.com/news/flint/index.ssf/2015/10/gov_snyder_names_task_force_to.html

By Ron Fonger | rfonger1@mlive.com
on October 21, 2015 at 4:42 PM, updated October 21, 2015 at 4:44 PM

Gov. Rick Snyder announces support of the city of Flint's plan to switch back to Detroit water due to increasing lead levels during a news conference with Mayor Dayne Walling in Flint on Thursday Oct. 8, 2015Flint Journal file photo

FLINT, MI -- Gov. Rick Snyder has appointed a task force to review "actions regarding water use and testing in Flint" and to make recommendations for future guidelines.

The governor announced creation of the task force in a news release Wednesday, Oct. 21, the same day U.S. Rep. Dan Kildee, D-Flint, and state Sen. Jim Ananich, D-Flint, called for the U.S. Environmental Protection Agency to carry out a similar review.

"Bringing in outside experts to evaluate our actions and help monitor and advise on potential changes to law, procedures and practices will be key to continuing work on the comprehensive action plan and ensuring safe drinking water for all the residents in Flint and all of Michigan," Snyder said in a news release.

State Department of Environmental Quality Director Dan Wyant said this week that state regulators mistakenly allowed Flint to distribute Flint River water without requiring that it be treated to make it less corrosive since April 2014.

Corrosive water has caused service lines to leach lead at a faster rate into tap water, elevating the level of lead in the water and in the blood of infants and children, experts and officials have said.

Members of the state task force are Ken Sikkema of Public Sector Consultants, Chris Kolb of the Michigan Environmental Council, Dr. Matthew Davis of the University of Michigan Health System, Eric Rothstein of the Galardi Rothstein Group and Dr. Lawrence Reynolds of Mott Children's Hospital.

Sikkema and Kolb will co-chair the task force, the news release says.

Reynolds was one of the health officials in Flint who sounded warnings about the increasing lead levels since the city changed its drinking water source from Lake Huron to the Flint River more than 17 months ago.

Sara Wurfel, a spokeswoman for Snyder, said in an email that the task force will "operate as transparently as possible and there are certainly expected to be opportunities for public input."

Wurfel did not say in response to questions from The Flint Journal-MLive whether the task force would operate under the provisions of the Open Meetings Act, conduct its business in public or have subpoena powers.

"The task force will be independent and our administration has pledged full and complete cooperation," she said.

The governor's news release says he wants an unbiased report that's focused on steps taken in the past and recommendations that could improve practices.

Here is more information on each task force member:

Sikkema is a senior policy fellow at Public Sector Consultants, where he specializes in public finance, environment, and energy policy. Prior to joining the firm, Sikkema served in both the Michigan House and Senate, including four years as Senate majority leader.

Kolb is president of the Michigan Environmental Council, a statewide coalition of 70 environmental, public health and faith-based nonprofit groups. Before joining the MEC, he represented Ann Arbor in the state House for six years and served six years on the Ann Arbor City Council.

Davis is professor of pediatrics and internal medicine at the University of Michigan Health System and professor of public policy at the Gerald R. Ford School at the University of Michigan. He previously served as the chief medical executive of the Michigan Department of Community Health/Department of Health and Human Services.

Rothstein is a national water issues consultant and principal at the Galardi Rothstein Group. He served as an independent adviser on the creation of the Great Lakes Water Authority.

Reynolds is a pediatrician in Flint who serves as president of the Mott Children's Health Center. He received his medical degree from Howard University College of Medicine and has been in practice for 36 years. He has served as president of the Genesee County Medical Society and the Michigan Chapter of the American Academy of Pediatrics.

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http://michiganradio.org/post/gov-snyder-creates-task-force-investigate-actions-around-flint-water-crisis

By Mark Brush · 2 hours ago

Gov. Rick Snyder announced the creation of an “independent advisory task force” that will look into the actions surrounding the management and testing of Flint’s drinking water system.

The goal, according to a press release from the governor’s office, is to investigate what happened and to prevent the kind of problems that occurred with Flint’s drinking water system in other systems in the state.

A state-appointed emergency manager made the decision to switch the city’s water supply in the spring of 2014. The emergency manager switched to Flint River water to save money. Complaints about the quality of the water surfaced soon after. The state didn't act until independent researchers pointed out that some residents were likely being exposed to unsafe levels of lead because of the way the water was being managed.

The state, the city, and a private foundation recently put up $12 million to switch the city back to water from Lake Huron managed by the Detroit Sewerage & Water Department.

More from the press release:

Snyder said the administration will fully cooperate with task force members, saying he wants an unbiased report focusing on steps taken in the past and recommendations that could improve practices to ensure all residents have access to safe, clean water

The task force will be co-chaired by Ken Sikkema of Public Sector Consultants and Chris Kolb,of the Michigan Environmental Council. Members will include Dr. Matthew Davis of the University of Michigan Health System, Eric Rothstein of the Galardi Rothstein Group, and Dr. Lawrence Reynolds of Mott Children's Health Center in Flint.

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http://www.9and10news.com/story/30318477/gov-snyder-announces-task-force-will-take-on-flints-water-emergency

Posted: Oct 21, 2015 1:52 PM CST Updated: Oct 21, 2015 1:52 PM CST

By Jamie Valentine, Producer

Governor Snyder says a Flint water task force will take on the city's water emergency.

Recent problems with high levels of lead in the water prompted the emergency.

Governor Snyder says experts in public health and medicine, along with water management and environmental protection will work together on protecting the people of Flint.

High lead levels have been found in children drinking the Flint water.

The city has now reconnected to Detroit's water system to stop any other health emergencies.

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http://www.freep.com/story/opinion/columnists/nancy-kaffer/2015/10/21/indifference-characterized-state-approach-flint-water/74289430/

By Nancy Kaffer, Detroit Free Press Columnist 3:27 p.m. EDT October 21, 2015

9 CONNECT 30 TWEETLINKEDIN 14 COMMENTEMAILMORE

"Apparently it's going to be a thing now."

Lackadaisical and dismissive -- that's the tone of a Michigan Department of Environmental Quality spokeswoman's response to a July e-mail noting that a member of a second media outlet had made an inquiry about elevated lead levels in Flint's drinking water. And it's a perfectly tone-deaf representation of that agency's response to the public health crisis then brewing in that impoverished town.

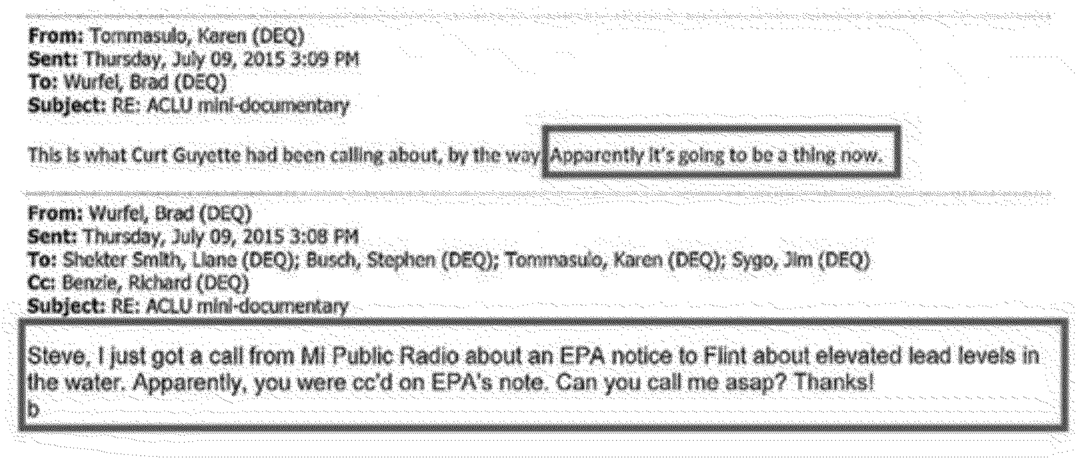
This week, the state acknowledged that it made mistakes in approving and overseeing Flint's transition to a new water source last year, that it misunderstood and misapplied federal rules meant to keep dangerous substances like lead and copper out of drinking water. The state was finally spurred to action after a local pediatrician found that an increasing number of Flint kids had elevated blood-lead levels.

Back in July, it was a different story. Months of MDEQ e-mails, obtained through the Freedom of Information Act by Virginia Tech University researcher Marc Edwards, show a stunning indifference on the part of state environmental officials, who seemed focused on deflecting criticism. Flint, officials insisted, with MDEQ's blessing was in compliance with federal safety guidelines. End of story.

Frankly, it seemed some state officials thought dealing with inquiries about lead in Flint was a hassle.

"... I just got a call from MI Public Radio[sic] about an EPA notice to Flint about elevated lead levels in the water. Apparently, you were cc'd on EPA's note. Can you call me ASA P? Thanks!" MDEQ spokesman Brad Wurfel wrote to a handful of department officials in a July 9 e-mail.

Karen Tommasulo, another MDEQ public information officer, wrote back: "This is what Curt Guyette had been calling about, by the way. Apparently it's going to be a thing now."



From: Tommasulo, Karen (DEQ)
Sent: Thursday, July 09, 2015 3:09 PM
To: Wurfel, Brad (DEQ)
Subject: RE: ACLU mini-documentary

This is what Curt Guyette had been calling about, by the way Apparently it's going to be a thing now.

From: Wurfel, Brad (DEQ)
Sent: Thursday, July 09, 2015 3:08 PM
To: Shekter Smith, Liane (DEQ); Busch, Stephen (DEQ); Tommasulo, Karen (DEQ); Sygo, Jim (DEQ)
Cc: Benzie, Richard (DEQ)
Subject: RE: ACLU mini-documentary

Steve, I just got a call from MI Public Radio about an EPA notice to Flint about elevated lead levels in the water. Apparently, you were cc'd on EPA's note. Can you call me asap? Thanks!
b

This e-mail, obtained by Virginia Tech researcher Marc Edwards, is a communication between public relations officials at the Michigan Department of Environmental Quality. Emphasis added by Edwards. (Photo: Marc Edwards))

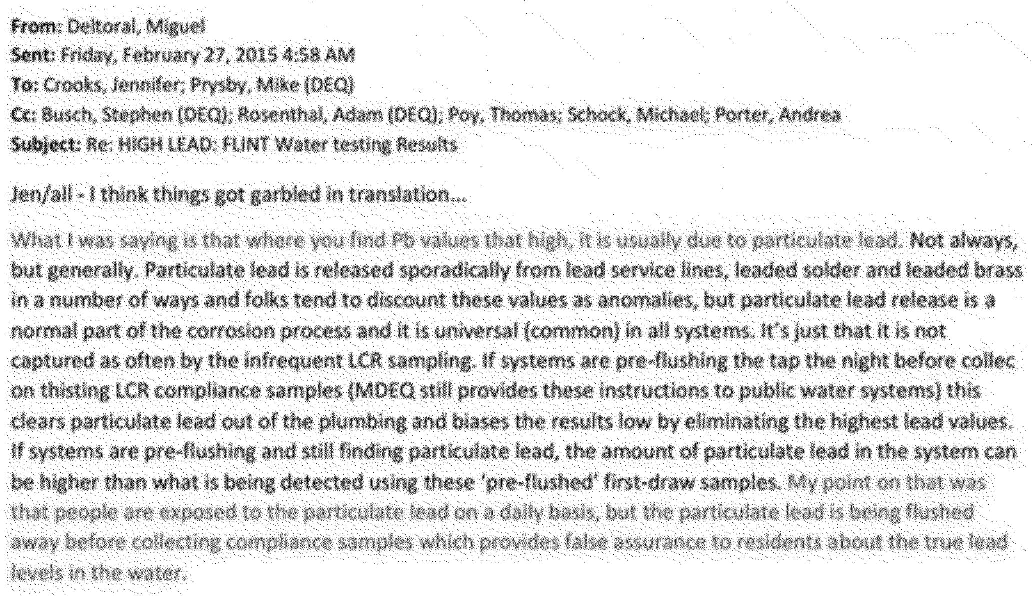
For months, residents had reported problems with Flint's water, some caused by the local treatment plant's addition of a disinfectant to the water supply. But now there were concerns about lead levels. Guyette, an investigative reporter for the American Civil Liberties Union, was preparing to break a leaked U.S. Environmental Protection Agency memo that called nearly every aspect of the state's lead monitoring in Flint into question. He asked for comment. Repeatedly. ("ACLU guy is back today," Tommasulo wrote in a July 8 e-mail.)

MDEQ officials stalled. Guyette published. Then Michigan Radio got the memo.

With at least two reporters on the story, Flint's lead problem -- despite MDEQ officials' best efforts to the contrary -- had, indeed, become a thing.

But it would be months before MDEQ officials, much less Gov. Rick Snyder, would make that acknowledgement publicly, or move to improve Flint's drinking water.

The state monitored Flint's water for a year; in the first six-month round of testing completed last December, results showed Flint's water had 6 parts per billion of lead, below the EPA's actionable level of 15 ppb, but in excess of that agency's 5 ppb threshold for reevaluation of local water treatment plans. A second round of tests, finished in June, showed up to 11 ppb of lead in Flint water, even though the MDEQ advised residents to pre-flush water from pipes before collecting samples, a method not approved by the EPA. The spike in lead is a trend officials should've found disturbing.



From: Deltoral, Miguel
Sent: Friday, February 27, 2015 4:58 AM
To: Crooks, Jennifer; Prysby, Mike (DEQ)
Cc: Busch, Stephen (DEQ); Rosenthal, Adam (DEQ); Poy, Thomas; Schock, Michael; Porter, Andrea
Subject: Re: HIGH LEAD: FLINT Water testing Results

Jen/all - I think things got garbled in translation...

What I was saying is that where you find Pb values that high, it is usually due to particulate lead. **Not always, but generally. Particulate lead is released sporadically from lead service lines, leaded solder and leaded brass in a number of ways and folks tend to discount these values as anomalies, but particulate lead release is a normal part of the corrosion process and it is universal (common) in all systems. It's just that it is not captured as often by the infrequent LCR sampling. If systems are pre-flushing the tap the night before collec on thisting LCR compliance samples (MDEQ still provides these instructions to public water systems) this clears particulate lead out of the plumbing and biases the results low by eliminating the highest lead values. If systems are pre-flushing and still finding particulate lead, the amount of particulate lead in the system can be higher than what is being detected using these 'pre-flushed' first-draw samples.** My point on that was that people are exposed to the particulate lead on a daily basis, but the particulate lead is being flushed away before collecting compliance samples which provides false assurance to residents about the true lead levels in the water.

This e-mail, acquired by Virginia Tech researcher Marc Edwards through the Freedom of Information Act, show an email from EPA drinking water specialist Miguel Del Toral and MDEQ officials. Emphasis added by Edwards. (Photo: Marc Edwards)

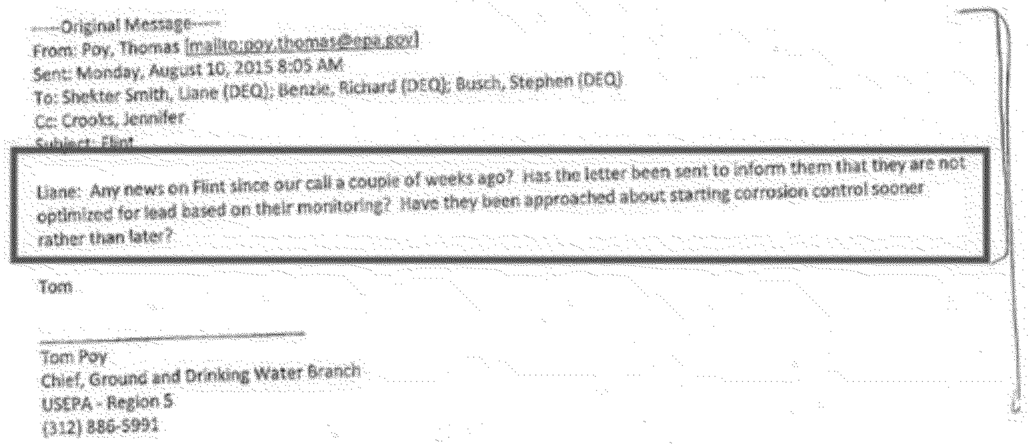
But while discussing the EPA's memo privately, acknowledging the city wasn't adequately treating its water -- even as results of water analysis by Virginia Tech's Edwards began to show heightened concentrations of lead in the water -- department officials continued to publicly insist that Flint's water supply was safe.

Why? The e-mails -- largely correspondence among Wurfel, MDEQ district engineer Michael Prysby, district supervisor Stephen Busch, former drinking water chief Liane Shekter Smith and EPA officials --don't offer much explanation, beyond petty insistence that the department hadn't erred, a kind of bruised-ego approach that considered any criticism distasteful, and a bureaucratic blindness to scientific evidence that should have suggested that meeting water standards may not have been sufficient to ensure residents' safety.

Gov. Rick Snyder has formed an independent task force to review government actions in Flint. The decision to switch the water supply was made while the city was under the oversight of Snyder-appointed emergency managers. U.S. Rep. Dan Kildee and state Rep. Jim Ananich, both Flint Democrats, have called for a federal investigation.

In February, EPA drinking water specialist Miguel Del Toral, the memo's author, informed state officials that there was likely particulate lead in Flint's water, and that this was likely because the local treatment plant hadn't employed corrosion control -- the addition of chemicals that form a film inside aging service lines to prevent lead from leaching into the water.

Flint began pumping its own water from the Flint River in 2014; it opted not to add those chemicals to its water, something officials now say probably violated of federal standards -- instead adding lime to decrease the acidity, and thus corrosivity, of the water. The EPA advised the MDEQ, as early as February and consistently throughout the year, that Flint's water system should be using corrosion control. But it never happened. In October, the city switched back to Detroit water.



-----Original Message-----
From: Poy, Thomas [mailto:poy.thomas@epa.gov]
Sent: Monday, August 10, 2015 8:05 AM
To: Shekter Smith, Liane (DEQ); Benzie, Richard (DEQ); Busch, Stephen (DEQ)
Cc: Crooks, Jennifer
Subject: Flint

Liane: Any news on Flint since our call a couple of weeks ago? Has the letter been sent to inform them that they are not optimized for lead based on their monitoring? Have they been approached about starting corrosion control sooner rather than later?

Tom

Tom Poy
Chief, Ground and Drinking Water Branch
USEPA - Region 5
(312) 886-5991

This e-mail, obtained by Virginia Tech researcher Marc Edwards, is from an EPA representative asking MDEQ officials about having Flint start using corrosion controls in its water. Emphasis added by Edwards. (Photo: Marc Edwards)

In an e-mail before a conference call to discuss the memo, Shekter Smith asked the EPA to confirm in writing that the state was in compliance with federal rules, and expressed displeasure that the memo had been leaked. She never mentioned the memo's content.

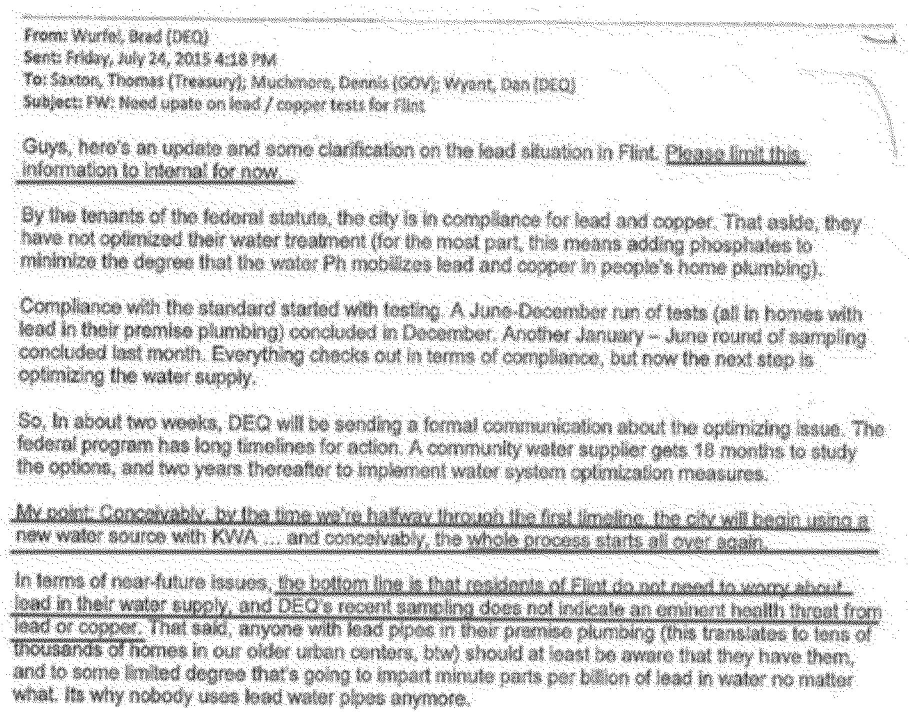
The EPA water specialist, Del Toral, was dismissed by Wurfel in September as a "rogue employee"; Edwards, the Virginia Tech researcher and McArthur genius grant recipient -- who has tested water samples from hundreds of Flint homes -- was written off as a man with an agenda, someone whose work didn't merit serious examination. Community groups, Wurfel wrote, were keeping residents "hopped up."

Former drinking water chief Liane Shekter Smith -- she's been reassigned within MDEQ because of her role in the crisis -- earnestly explained to Flint resident LeeAnne Walters in an e-mail that samples taken from her home couldn't be included in citywide test results, because Walters had installed a filter. Yet filtered samples taken from Walters' home showed lead concentrations astronomically higher than the EPA's 15 ppb limit -- 107 ppb, 397 ppb, 707 ppb. It's difficult to understand why Walters' filtered samples -- with lead concentrations that were off the charts -- didn't appear to trigger alarm bells for Shekter Smith, or any other MDEQ official.

It's among the many inexplicable exchanges revealed in the e-mails.

Again and again, MDEQ officials noted that the city planned to switch water supplies again next year, when a new regional water authority is complete. Any testing or treatment plan would just have to be re-done -- so why bother? When Virginia Tech researcher Edwards' team began working in Flint, state officials wondered whether to let him know that the city was changing its water supply, and not to waste resources.

Everything was fine, MDEQ insisted, in alignment with federal standards.



From: Wurfel, Brad (DEQ)
Sent: Friday, July 24, 2015 4:18 PM
To: Saxton, Thomas (Treasury); Muchmore, Dennis (GOV); Wyant, Dan (DEQ)
Subject: FW: Need upate on lead / copper tests for Flint

Guys, here's an update and some clarification on the lead situation in Flint. Please limit this information to internal for now.

By the tenants of the federal statute, the city is in compliance for lead and copper. That aside, they have not optimized their water treatment (for the most part, this means adding phosphates to minimize the degree that the water Ph mobilizes lead and copper in people's home plumbing).

Compliance with the standard started with testing. A June-December run of tests (all in homes with lead in their premise plumbing) concluded in December. Another January – June round of sampling concluded last month. Everything checks out in terms of compliance, but now the next step is optimizing the water supply.

So, In about two weeks, DEQ will be sending a formal communication about the optimizing issue. The federal program has long timelines for action. A community water supplier gets 18 months to study the options, and two years thereafter to implement water system optimization measures.

My point: Conceivably, by the time we're halfway through the first timeline, the city will begin using a new water source with KWA ... and conceivably, the whole process starts all over again.

In terms of near-future issues, the bottom line is that residents of Flint do not need to worry about lead in their water supply, and DEQ's recent sampling does not indicate an eminent health threat from lead or copper. That said, anyone with lead pipes in their premise plumbing (this translates to tens of thousands of homes in our older urban centers, btw) should at least be aware that they have them, and to some limited degree that's going to impart minute parts per billion of lead in water no matter what. Its why nobody uses lead water pipes anymore.

This e-mail, obtained by Virginia Tech researcher Marc Edwards through the Freedom of Information Act, updating administration officials on questions regarding the safety of Flint's water. Emphasis added by Edwards. (Photo: Marc Edwards)

And they might have thought that was true. Or true enough.

If there's such a thing as benign neglect, this was malignant indifference, on an institutional level.

I'm reminded of the old cliche: For evil to flourish, all that's required is that good people do nothing. In Flint, what happened was more insidious: For evil to flourish, all that's required is for people to do exactly, and only, what is required of them. Nothing less.

Nothing more.

Contact Nancy Kaffer at nkaffer@freepress.com. Follow her on Twitter @nancykaffer.

59 CONNECT 30 TWEETLINKEDIN 14 COMMENTEMAILMORE

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http://nbc25news.com/news/local/newly-released-e-mails-show-epa-knew-about-lead-in-flints-drinking-water

By Stephanie Parkinson Tuesday, October 20th 2015

FLINT — Newly released e-mails show, as far back as February, the federal government knew of the dangers lurking in Flint's drinking water.

Documents obtained by Virginia Tech researchers reveal discussions between Michigan Department of Environmental Quality, Environmental Protection Agency, and city leaders.

Inside those e-mails is communication that shows the EPA downplayed health concerns brought forward by one of its own.

February 27 Miguel Del Toral, a drinking water expert with the EPA, sent an e-mail to several people within MDEQ telling them lead was in the drinking water in Flint.

In April, he sent another memo, this time to the EPA, again warning of high lead levels in Flint's water.

All of this was more than seven months before any action was taken.

Flint Mayor Dayne Walling says he was left out of the loop.

"Experts were bringing their advice to the table and it was stuck in Lansing, and the rest of us had no idea," said Walling.

The e-mail, stating lead was in the water in Flint, was not sent to anyone within the City of Flint.

Other e-mails reveal Mayor Walling asked the EPA about Del Toral's memo. He was told it was a draft report and once it had been vetted it would be shared.

"I was shocked by the confusion," said Walling. "The EPA delegated authority to the MDEQ, information wasn't coming, what did come was bad information and it led to the serious situation that we're in now. There has to be an investigation."

What these e-mails also reveal is by mid-August the City of Flint's water plant supervisor was told by the MDEQ the city needed to put corrosion control measures in place right away, to prevent lead from getting in the drinking water.

Mayor Walling says the city reacted as quickly as it could, but says an internal investigation in the city will also be done.

"We're going to get to the bottom of everything that happened," said Walling. "We need to understand everything that happened before then, and who did what, and what they knew."

Our calls to the EPA were not returned in time for air Tuesday.

###

To: Hedman, Susan[hedman.susan@epa.gov]; Meiburg, Stan[Meiburg.Stan@epa.gov]; Fritz, Matthew[Fritz.Matthew@epa.gov]; Grevatt, Peter[Grevatt.Peter@epa.gov]; Kopocis, Ken[Kopocis.Ken@epa.gov]
From: Burke, Thomas
Sent: Thur 10/22/2015 3:07:41 PM
Subject: Fwd: FYI: Gov. Rick Snyder announces Flint Water Task Force to review state, federal and municipal actions, offer recommendations

FYI

Thomas A. Burke, PhD, MPH
Deputy Assistant Administrator
EPA Science Advisor
Office of Research and Development
202-564-6620
burke.thomas@epa.gov

From: "Sonich-Mullin, Cynthia" <Sonich-Mullin.Cynthia@epa.gov>
Date: October 22, 2015 at 9:21:06 AM EDT

Subject: FW: FYI: Gov. Rick Snyder announces Flint Water Task Force to review state, federal and municipal actions, offer recommendations

For your awareness…

Cynthia Sonich-Mullin

Director, National Risk Management Research Laboratory

Office of Research and Development

U.S. Environmental Protection Agency

26 W. Martin Luther King Jr. Dr.

Cincinnati, Ohio 45268

Phone: 513-569-7923

Mobile: 513-560-5043

Subject: FYI: Gov. Rick Snyder announces Flint Water Task Force to review

state, federal and municipal actions, offer recommendations

Gov. Rick Snyder announces Flint Water Task Force to review state, federal and municipal actions, offer recommendations

Experts in public health, water management, environmental protection to focus on steps to protect residents

Wednesday, Oct. 21, 2015

LANSING, Mich. – Gov. Rick Snyder today announced the creation of an independent advisory task force charged with reviewing actions regarding water use and testing in Flint and offer recommendations for future guidelines to protect the health and safety of all state residents.

Task force members include experts in public health and medicine, water management, and environmental protection from both sides of the aisle, and will be co-chaired by Ken Sikkema of Public Sector Consultants and Chris Kolb, of the Michigan Environmental Council. Also serving will be Dr. Matthew Davis of the University of Michigan Health System, Eric Rothstein, of the Galardi Rothstein Group and Dr. Lawrence Reynolds of Mott Children's Health Center in Flint.

"Transitioning back to the Detroit Water and Sewerage Department-Great Lakes Water Authority is a good first step to protecting public health in Flint, but it's not the last step," Snyder said. "Bringing in outside experts to evaluate our actions and help monitor and advise on potential changes to law, procedures and practices will be key to continuing work on the comprehensive action plan and ensuring safe drinking water for all the residents in Flint and all of Michigan."

Snyder said the administration will fully cooperate with task force members, saying he wants an unbiased report focusing on steps taken in the past and recommendations that could improve practices to ensure all residents have access to safe, clean water.

Ken Sikkema is a senior policy fellow at Public Sector Consultants, where he specializes in public finance, environment, and energy policy. Prior to joining the firm, Sikkema served in both the Michigan House and Senate, culminating with four years as Senate majority leader. He has also served as both an adjunct and visiting professor at Grand Valley State University.

Chris Kolb is president of the Michigan Environmental Council, a statewide coalition of 70 environmental, public health and faith-based nonprofit groups. Before joining the MEC, Kolb represented Ann Arbor in the state House for six years and served six years on the Ann Arbor City Council. He has been president of the MEC for six years.

Matthew Davis, M.D., M.A.P.P., is professor of pediatrics and internal medicine at the University of Michigan Health System and professor of public policy at the Gerald R. Ford School at the University of Michigan, having joined the faculty in 2000. Davis also is a professor of health management and policy at the School of Public Health. He previously served as the chief medical executive of the Michigan Department of Community Health/Department of Health and Human Services.

Eric Rothstein is a national water issues consultant and principal at the Galardi Rothstein Group. He served as an independent advisor on the creation of the Great Lakes Water Authority. Rothstein also has served as Jefferson County, Alabama's rate consultant and municipal adviser for litigation related to the county's bankruptcy and issuance of $1.7 billion in sewer warrants and led strategic financial planning for the City of Atlanta's Department of Watershed Management. He has more than 30 years of experience in water, wastewater and stormwater utility finance and rate-making assessments.

Lawrence Reynolds, M.D., is a pediatrician in Flint who serves as president of the Mott Children's Health Center. He received his medical degree from Howard University College of Medicine and has been in practice for 36 years. He has served as president of the Genesee County Medical Society and the Michigan Chapter of the American Academy of Pediatrics. He has been honored for his humanitarian and advocacy efforts on behalf of children from the Community Foundation of Greater Flint.

Snyder has said reconnecting with the authority is a critical step to resolving water quality issues and addressing related health concerns. It will not immediately resolve the city's problem with lead service lines or aging infrastructure. It will take time for pipes in Flint to become coated with the phosphate corrosion control.

To best protect public health, state and local authorities will continue to carry out steps outlined on Oct. 2 in a comprehensive action plan, including continued testing, the use of faucet filters and providing residents with accurate information about steps to eliminate lead exposure. The Michigan Departments of Environmental Quality and Health and Human Services are continuing to provide free water filters, free lead testing through the state laboratory for Flint water customers, and hiring additional staff to conduct health exposure monitoring for lead in drinking water.

To: Henry, Timothy[henry.timothy@epa.gov]
From: Hyde, Tinka
Sent: Thur 10/22/2015 5:49:15 PM
Subject: Fwd: New Flint Clips Updated for Oct 22

Sent from my iPhone

Begin forwarded message:

> **From:** "Cassell, Peter" <cassell.peter@epa.gov>
> **Date:** October 22, 2015 at 9:47:32 AM CDT
> **To:** "Kelley, Jeff" <kelley.jeff@epa.gov>, "Hedman, Susan" <hedman.susan@epa.gov>, "Kaplan, Robert" <kaplan.robert@epa.gov>, "Hyde, Tinka" <hyde.tinka@epa.gov>
> **Cc:** "Rowan, Anne" <rowan.anne@epa.gov>, "Beckmann, Ronna Erin" <beckmann.ronna@epa.gov>, "Harrison, Melissa" <Harrison.Melissa@epa.gov>, "Abrams, Dan" <Abrams.Dan@epa.gov>, "Poy, Thomas" <poy.thomas@epa.gov>, "Fortin, Denise" <Fortin.Denise@epa.gov>, "Deamer, Eileen" <deamer.eileen@epa.gov>, "Singer, Joshua" <Singer.Joshua@epa.gov>, "Arcaute, Francisco" <Arcaute.Francisco@epa.gov>, "Peterson, John" <peterson.john@epa.gov>, "Loop, Travis" <Loop.Travis@epa.gov>
> **Subject: New Flint Clips Updated for Oct 22**
>
> # FLINT DRINKING WATER CLIPS
>
> US. EPA Region 5 – as prepared by Peter Cassell *(ORA/OEC/PA)* on Oct. 22, 2015.
>
> •□□□□□□□□ Michigan DEQ Director admits mistake in Flint drinking water safety (EP News Wire)
>
> •□□□□□□□□ Michigan Congressman Wants Feds to Investigate Flint Water Crisis (WDET 101.9 fm)
>
> •□□□□□□□□ City will conduct internal review of Flint water crisis, administrator says (MLive)
>
> •□□□□□□□□ Michigan: E.P.A. Investigation Is Sought Over Flint Water (AP/The New York TImes)
>
> •□□□□□□□□ Gov. Rick Snyder announces task force to review Flint water crisis (Macomb Daily News)

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http://epnewswire.com/stories/510644313-michigan-deq-director-admits-mistake-in-flint-drinking-water-safety

Wednesday, Oct 21, 2015 @ 4:14pm By EP News Wire Reports

Michigan Department of Environmental Quality (DEQ) Director Dan Wyant issued a statement on Monday to address the mishandling of drinking water safety in Flint.

“As details of the situation emerge, I am convinced our program staff believed they were doing their job right,” Wyant said. “As the state recognized there could be a health threat to Flint residents, we took appropriate steps. We are now embarked on an unprecedented effort to safeguard Flint residents and families with near-term, intermediate and long-term actions to protect and educate city residents.”

Wyant said the staff employed a federal protocol they believed was appropriate, but was incorrect. "The water testing steps followed would have been correct for a city with less than 50,000 people, but not for a city of nearly 100,000," he said.

Wyant also announced that he has replaced the leadership in the DEQ’s Office of Drinking Water and Municipal Assistance, with DEQ Chief Deputy Jim Sygo serving as interim chief.

“The Governor has called for an independent, third-party after-action review,” Wyant said. “I have taken the step of changing leadership in the division. We are working with our federal partners and committed to being part of the U.S. EPA's effort to strengthen its Lead and Copper Rule…We will learn from this. We will make necessary changes to see to it that our program becomes a national leader in public health protection."

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http://wdet.org/posts/2015/10/21/81790-michigan-congressman-wants-feds-to-investigate-flint-water-crisis/

Oct. 21, 2015

U.S. Rep. Dan Kildee wants the EPA to analyze how the Flint’s water supply was allowed to go so bad for so long.

A Michigan Congressman is calling for a federal investigation into why elevated levels of lead were allowed to seep into the City of Flint's water supply.

Flint officials are reconnecting to Detroit's water system after researchers found double, and sometimes triple, the amount of lead usually present in children living in the city.

But Michigan Congressman Dan Kildee, who represents Flint, is requesting that the U.S. Environmental Protection Agency investigate why state officials allowed residents to use water that many said smelled bad and looked funny.

Research now shows the water contained dangerous levels of lead for months.

Kildee writes that someone must be held accountable for the situation in order to "restore confidence and to ensure that these failures never happen again."

The head of the state Department of Environmental Quality says staff members used the wrong standards for judging the safety of Flint's drinking water.

Gov. Rick Snyder is also appointing a task force to review how water was tested in Flint and propose guidelines for future safeguards.

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http://www.mlive.com/news/flint/index.ssf/2015/10/flint_administrator_says_city.html

By Ron Fonger | rfonger1@mlive.com
October 21, 2015 at 8:21 PM, updated October 21, 2015 at 11:23 PM

FLINT, MI — The city will conduct its own internal investigation of Flint's water crisis, City Administrator Natasha Henderson said Wednesday, Oct. 21.

Henderson told the City Council her planned review will include "the steps that were taken" since 2013, when officials decided to join the Karegnondi Water Authority.

In the following year, the city ended its use of Lake Huron water purchased from the Detroit water system and began using the Flint River as a drinking water source.

That river use is ending after elevated lead levels were found in Flint water and in the blood of infants and children since the switch occurred. Using money from the city, state and Charles Stewart Mott Foundation, the city reconnected to Detroit water last week.

"We will seek to commission an independent source to review the technical and operational steps that occurred from the time the city signed on to the KWA to present," Henderson said in a memorandum to Mayor Dayne Walling.

"This is meant to internally perform an after-action review in order to clearly assess the decisions that were made," the memo said.

The city administrator also told the council she plans to establish higher standards than required for the Flint water treatment plant, encourage all utility employees to become part of the American Water Works Association and be committed to more consistent meetings of Flint's Technical Advisory Committee.

The announcement of a local review of how Flint's water crisis occurred comes on the same day Gov. Rick Snyder announced a new task force to look at "actions regarding water use and testing in Flint" and to make recommendations for future guidelines.

State DEQ Director Dan Wyant said this week that his office should have required Flint to treat Flint River water to make it less corrosive but mistakenly did not.

Researchers and doctors have said the corrosive Flint River water caused increasing amounts of lead from service lines to leach into city water after the switch.

In addition to Snyder's announcement Wednesday, U.S. Rep. Dan Kildee, D-Flint, and state Senate Minority Leader Jim Ananich, D-Flint, asked the U.S. Environmental Protection Agency to investigate how Flint's lead-in-water crisis developed.

Henderson's plans, developed after a request from Walling, did not win over City Councilman Eric Mays, who said the council should investigate — with the power to subpoena and take testimony under oath.

Mays said the city also should have known it needed to add phosphorus to Flint River water to control corrosion, partly because a previous study indicated that.

By AP in the New York Times posted on Oct. 21, printed Oct. 22

Officials are asking the federal Environmental Protection Agency to answer questions about its oversight of state environmental regulators after elevated blood-lead levels were found in children whose Flint homes received river water. Representative Dan Kildee and the State Senate minority leader, Jim Ananich, both Democrats from the Flint area, said Wednesday that they had sent letters to the agency. Flint reconnected to Detroit's water system last week in hopes of resolving the health emergency. “It has become clear to me that unacceptable lead levels were a failure of government at every level,” Mr. Kildee wrote in a letter to the E.P.A. administrator, Gina McCarthy. He said the agency needed to conduct an investigation “to restore confidence and to ensure that these failures never happen again.” The agency said it was reviewing the request. Dan Wyant, director of the State Department of Environmental Quality, has said that federal drinking water rules were not followed properly when Flint switched from Detroit’s water system.

A version of this brief appears in print on October 22, 2015, on page A16 of the New York edition with the headline: Michigan: E.P.A. Investigation Is Sought Over Flint Water.

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http://www.macombdaily.com/article/MD/20151022/NEWS/151029889

Posted: 10/22/15, 7:16 AM EDT | Updated: 1 min ago

FLINT (AP) >> Gov. Rick Snyder has announced the creation of an independent advisory task force to review Flint’s water use and testing.

The group includes public health and medicine, water management and environmental protection experts.

Snyder’s office says Wednesday that the group also will offer recommendations for future guidelines to protect Michigan residents’ health and safety.

Flint stopped getting its water from Detroit’s system last year to save money. It started using Flint River water until a new system connecting to Lake Huron was completed.

Advertisement

Residents complained about the Flint River water. Doctors later discovered corrosive water was drawing lead from aging pipes in some homes.

Flint has since reconnected to Detroit’s system.

The state says federal drinking water rules were not followed properly when Flint switched to the river water.

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To: Henry, Timothy[henry.timothy@epa.gov]; Deltoral, Miguel[deltoral.miguel@epa.gov]; Poy, Thomas[poy.thomas@epa.gov]; Schock, Michael[Schock.Michael@epa.gov]; Kempic, Jeffrey[Kempic.Jeffrey@epa.gov]; Kaplan, Robert[kaplan.robert@epa.gov]
From: Lytle, Darren
Sent: Thur 10/22/2015 7:01:36 PM
Subject: FW: Flint WTP PH2 SEG4 - Corrosion Control

FYI

Darren A. Lytle, Ph.D., P.E.

Branch Chief (Acting)

U.S. Environmental Protection Agency

26 West Martin Luther King Dr.

Cincinnati, Ohio 45268

Phone: (513) 569-7432

Fax: (513) 487-2543

email: lytle.darren@epa.gov

From: Busch, Stephen (DEQ) [mailto:BUSCHS@michigan.gov]
Sent: Thursday, October 22, 2015 12:58 PM
To: Schock, Michael <Schock.Michael@epa.gov>; Lytle, Darren <Lytle.Darren@epa.gov>
Cc: Kempic, Jeffrey <Kempic.Jeffrey@epa.gov>; Prysby, Mike (DEQ) <PRYSBYM@michigan.gov>; Kaplan, Robert <kaplan.robert@epa.gov>; Krisztian, George (DEQ) <krisztiang@michigan.gov>; Sygo, Jim (DEQ) <SygoJ@michigan.gov>
Subject: RE: Flint WTP PH2 SEG4 - Corrosion Control

This will summarize our phone conversation of 10/19 and provide clarification regarding the previous comments.

The City of Flint converted back to purchasing of Detroit Water and Sewerage Department water on Friday October 16, 2015. No indications of upset in the distribution system have been reported to date.

Detroit Water and Sewerage Department (DWSD) has confirmed the use of Innophos "Phosphoric Acid 75% Technical" product which is NSF Standard 60 certified with a maximum allowable feed rate of 13 mg/L as product.

The City of Flint will need to supply a similar phosphoric acid product, NSF Standard 60 approved with allowable maximum dosage.

DWSD supplied water is currently dosed at 0.39 mg/L as P (1.2 mg/L as PO4) slightly above DWSD's OCCT requirement to dose a minimum of 0.9 mg/L as PO4 and have a minimum plant tap residual of 0.8 mg/L as PO4. DWSD plant tap residuals have been shown to consistently be at 0.39 mg/L as P (1.2 mg/L as PO4). In addition water supply entering Flint has been tested and so far shown to contain approximately 0.39 mg/L as P (1.2 mg/L as PO4) as well.

To achieve pipe passivation Flint will boost orthophosphate dosage to establish a minimum distribution residual of 1.0 mg/L as P (3.1 mg/L as PO4). The chemical feed system will be sized to achieve a dose up to 2.0 mg/L as P (6.1 mg/L as PO4) in case orthophosphate loss is observed.

Flint will continue Water Quality Parameter Monitoring in accordance with the LCR at the same 25 distribution locations used under the Flint River. In addition 10 of these locations also serve as total coliform monitoring sites, including disinfectant residual, and Flint will be told to, for the purpose of assessing water stability, conduct water quality parameter monitoring along with turbidity and iron sampling will be at these 10 locations on a weekly basis as suggested. This will also ensure that a minimum recommended pH levels are being maintained throughout the system.

EPA ORD staff will provide instructions to the City of Flint for creating test loops to help confirm effectiveness of the corrosion control treatment. This data will help in rebuilding public trust.

The County Health Department and MI Department of Health and Human Services will be conducting blood lead level testing of children in Flint. Children with elevated blood lead levels will be offered exposure assessments of their homes. These assessments should include the contribution of lead from service line and interior plumbing sources. Such diagnostic testing should help further substantiate the effectiveness of corrosion control treatment. Procedures recommended by EPA should be shared with the Michigan Department of Health and Human Services.

The University of Michigan in Ann Arbor had previously expressed interest in assisting the City of Flint. Both the Department of Civil and Environmental Engineering, and School of Public Health should be contacted to determine if that interest still exists with potential to assist in both test loop construction and monitoring, and exposure assessment monitoring in homes. Any water analysis should occur at a certified laboratory.

The City will be required to complete a 6 month round of lead and copper compliance monitoring in the January – June 2016 period. The City continues to offer all residents a first draw lead sample collection and analysis. Any additional staggered monitoring suggestions should be brought before the City's Technical Advisory Committee.

Criteria for deeming the treatment optimized must be established as the LCR only requires compliance with the lead and copper Action Levels once this determination has been made.

The City of Flint is continuing to digitize service line index card records into a Geographic Information System to confirm the location of lead service lines. EPA can provide additional information to the City regarding a sampling procedure to verify lead service line sites.

The City's engineering consultant will need to evaluate KWA water in conjunction with the City of Flint treatment plant processes to determine any necessary adjustments in optimized corrosion control treatment prior to initiating service to customers. Full scale testing may not be feasible.

Stephen Busch, P.E.

MDEQ Lansing District Coordinator

Office of Drinking Water and Municipal Assistance

Lansing and Jackson District Supervisor

517-643-2314

buschs@michigan.gov

From: Lytle, Darren [mailto:Lytle.Darren@epa.gov]
Sent: Monday, October 19, 2015 12:05 PM
To: Prysby, Mike (DEQ)
Cc: Schock, Michael; Kempic, Jeffrey; Busch, Stephen (DEQ)
Subject: RE: Flint WTP PH2 SEG4 - Corrosion Control

Mike,

Thank-you for giving us the opportunity to review the city of Flint's corrosion control plan.

We believe it is necessary that Flint boosts orthophosphate dosage. Given that the distribution system has not received orthophosphate in over a year, we expect that orthophosphate will need to be boosted to 1) meet the demand of the distribution system, 2) reach the service lines and other lead-containing components in premise plumbing, and 3) accelerate lead reduction at the consumer's taps. Orthophosphate should preferably be added in the same form as the Detroit source which is phosphoric acid from our understanding. This is the proposed case here, however, a simple test should be performed to make sure that the pH is not impacted in a significant way at the desired target dose.

We have not been able to obtain comprehensive water quality data for the finished water characteristics of the Detroit water that will be fed to Flint, to assess ranges of major chemical characteristic fluctuations. However, based upon the email trail, Detroit water entering the Flint system appears to only contain around 0.4 PO4/L. This concentration range is entirely too low compared to that needed in studies presented and published in the last 20+ years that have focused on lead released directly from lead pipes, and the solubility of the most likely lead orthophosphate pipes scales. We also strongly feel that targeted dose of 0.8 mg PO4/L is also too low, for the very same reason. We would be glad to share with you numerous standard

corrosion control and treatment reference works, best practices guides and published results from US and international lead corrosion control field and pilot studies. Secondly, the basis for that target (other communities using Lake Huron source use the same dose) is not scientifically derived nor does it consider water quality and the current state of Flint's distribution system. We have reviewed the original Detroit corrosion study and have seen some of the LCR monitoring data, and besides the fact that it did not directly pertain to this water source, few dosages were tested in the cited 1994 pipe loop study, and the higher dosage than the one implemented in the field currently was more effective. Based on the limited amount of data on the quality of Detroit water, what we know about the history of Detroit corrosion control, we think an orthophosphate residual of 3 to 4 mg PO4/L should be the minimum starting test target residual for pipe passivation. It is likely that, at least initially a higher dosage will be necessary to reach the far ends of the distribution system and sufficiently reduce lead solubility and release from all lead sources. To allow flexibility, we feel the design of the chemical feed and storage systems should be able to consistently deliver a maximum dose of 5 to 6 mg PO4/L, if substantial orthophosphate loss is observed, if the starting dose is set for the desired residual level of 3 to 4 mg/L as PO4. We suggest that jar tests be performed in advance of orthophosphate addition to Detroit water to evaluate the impact of orthophosphate dose on turbidity that could result from interactions between orthophosphate and background Detroit water quality parameters (e.g., aluminum, calcium, etc.).

We want to stress that immediately shifting to Detroit water and adding orthophosphate will not necessarily translate to immediate improvements. Furthermore, this is a change, albeit a return to past conditions. Nonetheless, a period of system upset should be anticipated. The need for a communication strategy and a distribution system plan are critical.

Lastly, we see no mention of a water quality monitoring program. Two programs need to be put in place immediately (before return to Detroit water) to 1) identify lead sources, 2) assess treatment effectiveness against lead release from all of the simultaneously operating mechanisms (solubility, particulate release, galvanic corrosion), and 3) assess orthophosphate levels and stability of water quality in the distribution system.

There are multiple sources of lead in the Flint distribution system to the consumers' taps, such as: pipes; leaded brass; leaded solder; accumulations on old galvanized steel pipes; possibly accumulated on copper or some plastic pipes. It is critical that the fate of orthophosphate in the distribution system is understood, and how effective it is against each type of lead source, so dosing adjustment can be properly made. For this purpose, we recommend that a number of residences throughout Flint that meet the following plumbing criteria, be identified for an assessment of the contribution lead from the different potential service line and interior plumbing sources, through detailed mapping of plumbing materials, lengths, sizes, and location and type of inline devices and faucets using profile sampling. For confidence in interpretation, probably at

least 5 sites from each of the configurations will be necessary. The configurations we would estimate to be most important (but should be changed or added to if local construction practice indicates it's necessary): Lead service line, galvanized steel interior plumbing; lead service line, copper with leaded solder joints; lead service line, plastic interior plumbing. It is also possible that interior plumbing may differ from the material used for the customer-side service line segment. We would be glad to discuss the specifics of this sampling effort.

For the purpose of assessing stability of water quality in the distribution system and to inform on orthophosphate residual adjustment, we suggest that 8 to 10 locations in the distribution system be selected to measure pH, alkalinity, orthophosphate, turbidity and iron on a weekly basis. These could be collected from TCR sampling locations, or other readily-accessible buildings, should be located at a distribution of locations in the distribution system and should be collected after a flush sufficiently long to assure that "fresh" distribution system water is being measured. Research has shown that over time, orthophosphate can reduce disinfectant demand associated with corroding metallic distribution system materials. These measurements need to be performed in the field and can simply be done with a portable HACH test kit or spectrophotometer.

A lead sampling plan needs to be in place to access the effectiveness of water change and treatment boost. LCR monitoring sites with confirmed lead service lines can be in the sampling pool. Sampling should consist of a 1 liter first draw sample (LCR sample without 5 minute pre-flush), followed by an additional flushed sample or two depending on profile sample results which is intended to capture major lead source(s). The specific details of this effort need to be worked out by the technical committee as soon as possible. We would gladly work with Flint on establishing a water sampling program to identity and verify lead service line sites. The plan and initial sampling effort should be performed before the switch so that one baseline sample set is collected.

Lastly, our strength does not fall under full-scale pump and chemical feed delivery systems. We would only say that the systems need to be scaled-up in size to accommodate our suggested dosing needs. Also, there is the some discussion about diverting water to the Dort reservoir and an associated orthophosphate feed system. We are not familiar with the reservoir but are wondering if it is an open reservoir?

Of course this is a lot of information to share and we would gladly be available to discuss the technical and scientific basis for our suggestions.

Let us know if you have any questions and thanks again,

Darren and Mike

Darren A. Lytle, Ph.D., P.E.

Branch Chief (Acting)

U.S. Environmental Protection Agency

26 West Martin Luther King Dr.

Cincinnati, Ohio 45268

Phone: (513) 569-7432

Fax: (513) 487-2543

email: lytle.darren@epa.gov

From: Prysby, Mike (DEQ) [mailto:PRYSBYM@michigan.gov]
Sent: Friday, October 16, 2015 1:32 PM
To: Lytle, Darren <Lytle.Darren@epa.gov>; Schock, Michael <Schock.Michael@epa.gov>
Cc: Busch, Stephen (DEQ) <BUSCHS@michigan.gov>
Subject: FW: Flint WTP PH2 SEG4 - Corrosion Control

Darren, Michael

We have received Flint's corrosion control proposal from their consultant. If you have comments, please provide them to me by Monday morning.

Michael Prysby, P.E.

District Engineer

Office of Drinking Water and Municipal Assistance

517 290-8817

From: Matta, Samir [mailto:SFMatta@lan-inc.com]
Sent: Friday, October 16, 2015 12:02 AM
To: Prysby, Mike (DEQ)
Subject: Flint WTP PH2 SEG4 - Corrosion Control

Hi Mike,

Please see attached plans for the Corrosion Control Plan for the City of Flint. I will have the official submittal package to you tomorrow afternoon after I get Brent or Mike's signature on the permit application. I will call you when I get back in Lansing to drop the package. Is three sets of full size plans adequate? Would you like some half size plans? Let me know.

Basis of Design

Given that Flint will require lead and copper corrosion control and given that Detroit utilizes orthophosphate for their corrosion control methodology, and that Flint will be receiving Detroit water for the immediate future, orthophosphate is the appropriate corrosion control methodology for Flint. A dosage of 0.8 mg/l as PO_4 has been recommended for the Detroit water. Numerous utilities utilizing Lake Michigan water have a target dosage of 0.9 mg/l as PO_4. Therefore, a target dosage in the range of 0.8 to 0.9 mg/l appears appropriate.

It is expected that, at least initially, there will be a significant PO_4 demand in the system. This will require a significantly higher dosage until this demand is satisfied and the target residual can be maintained. We are therefore designing for capability of a maximum dosage of 1.5 mg/l.

The arriving Detroit water will likely have some residual PO_4 when it arrives at Flint. It has been reported that this residual will be approximately 0.4 mg/l. The system must therefore be capable of a minimum dosage of 0.4 mg/l.

Based upon the usage of 75% Phosphoric Acid and a flow range of 4 MGD to 25 MGD, with an average day of 16 MGD, the expected feed rate will be 1.35 to 32 gpd. Average Phosphoric Acid feed is expected to be 10.8 gpd, requiring 30 days storage of 325 gal.

Orthophosphate will need to be applied at two locations. Detroit water will enter the Flint system at Control Station CS2, and supplementary phosphate will be applied there. However, on occasion some incoming water may need to be diverted to the Dort Reservoir, bypassing CS2. This water would then be introduced to the system through High Service Pump Station PS4 and phosphate would be introduced at this location.

Please let me know if the information is adequate or you require additional information.

Thanks.

Samir F. Matta, PE

Team Leader

Lockwood, Andrews & Newnam, Inc.
A LEO A DALY COMPANY

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2121 University Park Dr, Suite 100 • Okemos, MI 48864-6901

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To: Cassell, Peter[cassell.peter@epa.gov]; Kelley, Jeff[kelley.jeff@epa.gov]; Hedman, Susan[hedman.susan@epa.gov]; Kaplan, Robert[kaplan.robert@epa.gov]; Hyde, Tinka[hyde.tinka@epa.gov]; Allen, Laura[Allen.Laura@epa.gov]
Cc: Beckmann, Ronna Erin[beckmann.ronna@epa.gov]; Harrison, Melissa[Harrison.Melissa@epa.gov]; Abrams, Dan[Abrams.Dan@epa.gov]; Poy, Thomas[poy.thomas@epa.gov]; Fortin, Denise[Fortin.Denise@epa.gov]; Deamer, Eileen[deamer.eileen@epa.gov]; Singer, Joshua[Singer.Joshua@epa.gov]; Arcaute, Francisco[Arcaute.Francisco@epa.gov]; Peterson, John[peterson.john@epa.gov]; Loop, Travis[Loop.Travis@epa.gov]; Bassler, Rachel[Bassler.Rachel@epa.gov]
From: Rowan, Anne
Sent: Thur 10/22/2015 9:36:50 PM
Subject: RE: New Flint Clips Updated for Oct 22 As of 5 PM

Looping in Laura Allen who should be added to distribution list.

From: Cassell, Peter
Sent: Thursday, October 22, 2015 4:35 PM
To: Kelley, Jeff; Hedman, Susan; Kaplan, Robert; Hyde, Tinka
Cc: Rowan, Anne; Beckmann, Ronna Erin; Harrison, Melissa; Abrams, Dan; Poy, Thomas; Fortin, Denise; Deamer, Eileen; Singer, Joshua; Arcaute, Francisco; Peterson, John; Loop, Travis
Subject: New Flint Clips Updated for Oct 22 As of 5 PM

FLINT DRINKING WATER CLIPS

US. EPA Region 5 – as prepared by Peter Cassell *(ORA/OEC/PA)* on Oct. 22, 2015 at 5 PM.

- Detroit group meets with DEQ director on Flint water, asks him to resign (MLive)
- Flint Congressman wants EPA investigation of Flint water crisis (Michigan Radio)
- HAGER: We need to budge to change the world (Grand Haven Tribune)

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www.mlive.com/news/flint/index.ssf/2015/10/detroit_group_meets_with_michi.html

By Ron Fonger | rfonger1@mlive.com
on October 22, 2015 at 1:39 PM, updated October 22, 2015 at 3:03 PM

FLINT, MI -- A Detroit-area pastor who met with the director of the state Department of

Environmental Quality this week says he asked the director to resign because of state's role in Flint's water crisis.

The Rev. David A. Bullock said he and other members of the nonprofit Change Agent Consortium met with DEQ Director Dan Wyant Wednesday, Oct. 21, after a prayer vigil at the agency's headquarters.

"He definitely heard us out. He was able to hear from us, and that was important," Bullock said. "We were able to hear the plan going forward, and we were able to raise the question of his resigning."

Wyant issued a statement on the impromptu meeting with Change Aggent Consortium Thursday, Oct. 22, saying his office invited leaders to "discuss their concerns and share information transparently."

"I serve at the pleasure of the administration," Wyant said of the call for him to resign. "I believe the governor will gather all the facts and make the right decision at the appropriate time.

"Until then, we at the DEQ are singularly focused on implementing the state's plan to address lead issues in Flint and protect kids and families there."

Bullock is the pastor of Greater Saint Matthew Baptist Church in Highland Park. He and the Change Agenct Consortium, which organized the prayer vigil, have been active in Flint before.

One year ago, Bullock called for the removal of former emergency manager Darnell Earley while speaking in Flint.

Earlier this year, the group donated 500 cases of water to Flint families as the city struggled to keep down levels of total trihalomethanes (TTHM) in the city's water supply.

The CAC call for Wyant to step down because of the Flint lead-in-water emergency comes in the same week that the director announced he was replacing his top municipal drinking water official after acknowledging oversight mistakes with the Flint water system.

Wyant issued a written statement Monday, Oct. 19, saying the state enforced the wrong federal standards for treating Flint River water for more than 17 months, failing to require that the city make the water less corrosive.

Researchers and doctors have said the river water, used in Flint since April 2014, was far more corrosive than Lake Huron water that had been purchased for decades previously from the Detroit water system.

Because the river water was more corrosive water than lake water, it leached lead more quickly when it came in contact with lead service lines that bring water to about half of the homes in Flint.

In addition to elevated lead levels in water sampled by the city, a Hurley Medical Center doctor's study showed blood lead levels in children and infants in some parts of the city tripled after the change in water source.

On Friday, Oct. 16, the city switched back to Detroit-supplied water, using millions of dollars from the state and Charles Stewart Mott Foundation to make the change.

By Virginia Gordan • 1 hour ago – radio story on site

Credit Steve Carmody / Michigan Radio

US Rep. Dan Kildee, D-Flint Township, is calling on the U.S. Environmental Protection Agency to conduct a thorough investigation into what led to Flint's unsafe drinking water.

In a letter to EPA Administrator Gina McCarthy, Kildee seeks answers to questions about the adequacy of the EPA's oversight of the Michigan Department of Environmental Quality.

Kildee said both the EPA and the MDEQ gave repeated assurances that Flint's water was safe to consume, despite evidence that the water quality was unsafe.

Kildee said he is seeking transparency about what happened and accountability.

"The City of Flint residents should not be handed the bill for this massive failure of government at the state level and potentially at the federal level as well," said Kildee.

Kildee said the citizens of Flint are victims of the water crisis and should not have to pay to fix it.

Kildee has asked for a response from EPA Administrator McCarthy by October 27, 2015.

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http://www.grandhaventribune.com/opinion/community-columnist/2331401

Oct 22, 2015

At this point in the history of our country, racial tensions seem incredibly high. If we look back, though, over the course of our history, it seems that tensions have been simmering for a long time, and maybe are just now boiling over again.

I don't pretend to know what to do about things like White Privilege. I understand what it means, but I am not a person who can just sit with an idea. I need a solution, or at least to be working toward one. But when I look at the statistics, the numbers of unarmed black men killed by police, say, or the fact that America has only 5 percent of the world's population but has nearly a quarter of those incarcerated in the world, most of those poor and not white; or the fact that even though drug use is about the same between white and black folks, but black folks are 10 times more likely to spend time in jail...

I watched a news story the other night on a kid I won't even give a name to. It was all about how he used this "affluenza" defense after he killed four people while driving drunk, all about how it wasn't the first time, and all about how the fact that he was from a wealthy family meant he never served time or got help. I think most of the people my age who live in this county probably know at least one person who has had some sort of alcohol offense, and I'm pretty sure that most of those people didn't end up with just a sentence of community service, but ended up with tens of thousands of dollars in fines and costs.

I am not in any way defending people who choose to drive after they've been drinking. My point is that the treatment of folks is not the same; our justice system is biased to the wealthy and the powerful, and those who can afford hot-shot attorneys with exorbitant fees.

Another example of our broken system is the water crisis in Flint. In 2014, the economically strapped city switched from the water supply out of Detroit and decided to draw water from the Flint River instead. Residents of Flint complained because the water had a terrible smell, because it looked awful. When fecal coliform bacteria was found in the water, the city dumped extra chlorine in, not realizing, apparently, that the water in the Flint River is especially corrosive and caused the pipes to leach lead into the water.

This is water that babies, elderly folks and people just like you and me drank. This is water that they cooked with and cleaned with and showered in.

Did you know that the cost of water received from the Detroit system costs the residents of the City of Flint almost three times more for their water than the City of Detroit and its suburbs?

I am pretty sure that something like fecal bacteria and lead in the water could not, would not happen in our pretty little towns. We would not allow it to happen; we would organize on social media and sign countless petitions online to send to our representatives. We would make phone calls and just generally create a stir.

Our systems of justice and our social systems make what happened in Flint, make the rate of blacks incarcerated for drugs, make the fact that many in our own county are choosing to pay bills or buy food and being warehoused in jails OK.

We are complicit in these systems because we remain silent. We tow our little bag of donated spaghetti sauce close to the door of our local church food pantry. We look the other way when we see people who need help right in front of us; and we allow things like the water crisis in Flint to happen.

I think that this says we believe people like those who live in Flint are somehow not important. It's somehow OK with us that little babies drink water so full of lead it can permanently damage their brains.

We can't blame all of this on our elected officials. They do work for us, though most seem to have forgotten that fact.

We need to blame ourselves for not being heard, for not stepping into the gap that is created between those who have and those who have not more often. Many times, folks have commented online that I should get out there and lead the charge — if you knew me, you would know that I do, that I am. And part of that is to ask you to charge along with me.

If you would like to help the City of Flint as they struggle through its water crisis, its "we cannot drink the water" crisis, you can. You can go online and find a church or social organization and donate to them. You can drive over and pass out bottled water.

Much like the refrain of my last column, of my last 12 columns (happy anniversary!), I am asking you to help. If we all budged just a little bit from the views we hold and the things we think are worthy, we really could change the world.

— By Alicia Hager, Tribune community columnist

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To: Poy, Thomas[poy.thomas@epa.gov]; Deltoral, Miguel[deltoral.miguel@epa.gov]; Henry, Timothy[henry.timothy@epa.gov]; Lytle, Darren[Lytle.Darren@epa.gov]; Schock, Michael[Schock.Michael@epa.gov]; Kempic, Jeffrey[Kempic.Jeffrey@epa.gov]
From: Kaplan, Robert
Sent: Fri 10/23/2015 2:53:20 PM
Subject: FSDWTF -- Flint Corrosion Control -- any more comments?

FSDWTF --

Please see MDEQ's note to me below. Do we have any further comments on the optimization plan? If not, I will reply that we are in agreement and EPA has approved. If we have further comments, let's collect them up, circulate them, and then we can get them over to MDEQ.

Thanks,

- Bob

Robert Kaplan

Deputy Regional Administrator

U.S. EPA Region 5

Phone: (312) 886-1499

Cell: (312) 515-9827

Fax: (312) 692-2075

From: Sygo, Jim (DEQ) [mailto:SygoJ@michigan.gov]
Sent: Thursday, October 22, 2015 4:39 PM
To: Kaplan, Robert <kaplan.robert@epa.gov>
Subject: FW: Flint WTP PH2 SEG4 - Corrosion Control

Bob,

There appears to be agreement on the optimization of corrosion control for the City of Flint. This is the note provided to me by staff after a discussion with members of your task force.

From: Busch, Stephen (DEQ)
Sent: Thursday, October 22, 2015 12:58 PM
To: Schock, Michael; Lytle, Darren
Cc: Kempic, Jeffrey; Prysby, Mike (DEQ); kaplan.robert@epa.gov; Krisztian, George (DEQ); Sygo, Jim (DEQ)
Subject: RE: Flint WTP PH2 SEG4 - Corrosion Control

This will summarize our phone conversation of 10/19 and provide clarification regarding the previous comments.

The City of Flint converted back to purchasing of Detroit Water and Sewerage Department water on Friday October 16, 2015. No indications of upset in the distribution system have been reported to date.

Detroit Water and Sewerage Department (DWSD) has confirmed the use of Innophos "Phosphoric Acid 75% Technical" product which is NSF Standard 60 certified with a maximum allowable feed rate of 13 mg/L as product.

The City of Flint will need to supply a similar phosphoric acid product, NSF Standard 60 approved with allowable maximum dosage.

DWSD supplied water is currently dosed at 0.39 mg/L as P (1.2 mg/L as PO4) slightly above DWSD's OCCT requirement to dose a minimum of 0.9 mg/L as PO4 and have a minimum plant tap residual of 0.8 mg/L as PO4. DWSD plant tap residuals have been shown to consistently be at 0.39 mg/L as P (1.2 mg/L as PO4). In addition water supply entering Flint has been tested and so far shown to contain approximately 0.39 mg/L as P (1.2 mg/L as PO4) as well.

To achieve pipe passivation Flint will boost orthophosphate dosage to establish a minimum distribution residual of 1.0 mg/L as P (3.1 mg/L as PO4). The chemical feed system will be sized to achieve a dose up to 2.0 mg/L as P (6.1 mg/L as PO4) in case orthophosphate loss is observed.

Flint will continue Water Quality Parameter Monitoring in accordance with the LCR at the same 25 distribution locations used under the Flint River. In addition 10 of these locations also serve as total coliform monitoring sites, including disinfectant residual, and Flint will be told to, for the purpose of assessing water stability, conduct water quality parameter monitoring along with turbidity and iron sampling will be at these 10 locations on a weekly basis as suggested. This will also ensure that a minimum recommended pH levels are being maintained throughout the system.

EPA ORD staff will provide instructions to the City of Flint for creating test loops to help confirm effectiveness of the corrosion control treatment. This data will help in rebuilding public trust.

The County Health Department and MI Department of Health and Human Services will be conducting blood lead level testing of children in Flint. Children with elevated blood lead levels will be offered exposure assessments of their homes. These assessments should include the contribution of lead from service line and interior plumbing sources. Such diagnostic testing should help further substantiate the effectiveness of corrosion control treatment. Procedures recommended by EPA should be shared with the Michigan Department of Health and Human Services.

The University of Michigan in Ann Arbor had previously expressed interest in assisting the City of Flint. Both the Department of Civil and Environmental Engineering, and School of Public Health should be contacted to determine if that interest still exists with potential to assist in both test loop construction and monitoring, and exposure assessment monitoring in homes. Any water analysis should occur at a certified laboratory.

The City will be required to complete a 6 month round of lead and copper compliance monitoring in the January – June 2016 period. The City continues to offer all residents a first draw lead sample collection and analysis. Any additional staggered monitoring suggestions should be brought before the City's Technical Advisory Committee.

Criteria for deeming the treatment optimized must be established as the LCR only requires compliance with the lead and copper Action Levels once this determination has been made.

The City of Flint is continuing to digitize service line index card records into a Geographic Information System to confirm the location of lead service lines. EPA can provide additional information to the City regarding a sampling procedure to verify lead service line sites.

The City's engineering consultant will need to evaluate KWA water in conjunction with the City of Flint treatment plant processes to determine any necessary adjustments in optimized corrosion control treatment prior to initiating service to customers. Full scale testing may not be feasible.

Stephen Busch, P.E.

MDEQ Lansing District Coordinator

Office of Drinking Water and Municipal Assistance

Lansing and Jackson District Supervisor

517-643-2314

buschs@michigan.gov

From: Lytle, Darren [mailto:Lytle.Darren@epa.gov]
Sent: Monday, October 19, 2015 12:05 PM
To: Prysby, Mike (DEQ)
Cc: Schock, Michael; Kempic, Jeffrey; Busch, Stephen (DEQ)
Subject: RE: Flint WTP PH2 SEG4 - Corrosion Control

Mike,

Thank-you for giving us the opportunity to review the city of Flint's corrosion control plan.

We believe it is necessary that Flint boosts orthophosphate dosage. Given that the distribution system has not received orthophosphate in over a year, we expect that orthophosphate will need to be boosted to 1) meet the demand of the distribution system, 2) reach the service lines and other lead-containing components in premise plumbing, and 3) accelerate lead reduction at the consumer's taps. Orthophosphate should preferably be added in the same form as the Detroit source which is phosphoric acid from our understanding. This is the proposed case here, however, a simple test should be performed to make sure that the pH is not impacted in a significant way at the desired target dose.

We have not been able to obtain comprehensive water quality data for the finished water characteristics of the Detroit water that will be fed to Flint, to assess ranges of major chemical characteristic fluctuations. However, based upon the email trail, Detroit water entering the Flint system appears to only contain around 0.4 PO4/L. This concentration range is entirely too low compared to that needed in studies presented and published in the last 20+ years that have focused on lead released directly from lead pipes, and the solubility of the most likely lead orthophosphate pipes scales. We also strongly feel that targeted dose of 0.8 mg PO4/L is also too low, for the very same reason. We would be glad to share with you numerous standard corrosion control and treatment reference works, best practices guides and published results from US and international lead corrosion control field and pilot studies. Secondly, the basis for that target (other communities using Lake Huron source use the same dose) is not scientifically derived nor does it consider water quality and the current state of Flint's distribution system. We have reviewed the original Detroit corrosion study and have seen some of the LCR monitoring data, and besides the fact that it did not directly pertain to this water source, few dosages were tested in the cited 1994 pipe loop study, and the higher dosage than the one implemented in the field currently was more effective. Based on the limited amount of data on the quality of Detroit water, what we know about the history of Detroit corrosion control, we think an orthophosphate residual of 3 to 4 mg PO4/L should be the minimum starting test target residual for pipe passivation. It is likely that, at least initially a higher dosage will be necessary to reach the far ends of the distribution system and sufficiently reduce lead solubility and release from all lead sources. To allow flexibility, we feel the design of the chemical feed and storage systems should be able to consistently deliver a maximum dose of 5 to 6 mg PO4/L, if substantial orthophosphate loss is observed, if the starting dose is set for the desired residual level of 3 to 4 mg/L as PO4. We suggest that jar tests be performed in advance of orthophosphate addition to Detroit water to evaluate the impact of orthophosphate dose on turbidity that could result from interactions between orthophosphate and background Detroit water quality parameters (e.g., aluminum, calcium, etc.).

We want to stress that immediately shifting to Detroit water and adding orthophosphate will not necessarily translate to immediate improvements. Furthermore, this is a change, albeit a return to past conditions. Nonetheless, a period of system upset should be anticipated. The need for a communication strategy and a distribution system plan are critical.

Lastly, we see no mention of a water quality monitoring program. Two programs need to be put in place immediately (before return to Detroit water) to 1) identify lead sources, 2) assess treatment effectiveness against lead release from all of the simultaneously operating mechanisms (solubility, particulate release, galvanic corrosion), and 3) assess orthophosphate levels and stability of water quality in the distribution system.

There are multiple sources of lead in the Flint distribution system to the consumers' taps, such as: pipes; leaded brass; leaded solder; accumulations on old galvanized steel pipes; possibly accumulated on copper or some plastic pipes. It is critical that the fate of orthophosphate in the distribution system is understood, and how effective it is against each type of lead source, so dosing adjustment can be properly made. For this purpose, we recommend that a number of residences throughout Flint that meet the following plumbing criteria, be identified for an assessment of the contribution lead from the different potential service line and interior plumbing sources, through detailed mapping of plumbing materials, lengths, sizes, and location and type of inline devices and faucets using profile sampling. For confidence in interpretation, probably at least 5 sites from each of the configurations will be necessary. The configurations we would estimate to be most important (but should be changed or added to if local construction practice indicates it's necessary): Lead service line, galvanized steel interior plumbing; lead service line, copper with leaded solder joints; lead service line, plastic interior plumbing. It is also possible that interior plumbing may differ from the material used for the customer-side service line segment. We would be glad to discuss the specifics of this sampling effort.

For the purpose of assessing stability of water quality in the distribution system and to inform on orthophosphate residual adjustment, we suggest that 8 to 10 locations in the distribution system be selected to measure pH, alkalinity, orthophosphate, turbidity and iron on a weekly basis. These could be collected from TCR sampling locations, or other readily-accessible buildings, should be located at a distribution of locations in the distribution system and should be collected after a flush sufficiently long to assure that "fresh" distribution system water is being measured. Research has shown that over time, orthophosphate can reduce disinfectant demand associated with corroding metallic distribution system materials. These measurements need to be performed in the field and can simply be done with a portable HACH test kit or spectrophotometer.

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Lastly, our strength does not fall under full-scale pump and chemical feed delivery systems. We would only say that the systems need to be scaled-up in size to accommodate our suggested dosing needs. Also, there is the some discussion about diverting water to the Dort reservoir and an associated orthophosphate feed system. We are not familiar with the reservoir but are wondering if it is an open reservoir?

Of course this is a lot of information to share and we would gladly be available to discuss the technical and scientific basis for our suggestions.

Let us know if you have any questions and thanks again,

Darren and Mike

Darren A. Lytle, Ph.D., P.E.

Branch Chief (Acting)

U.S. Environmental Protection Agency

26 West Martin Luther King Dr.

Cincinnati, Ohio 45268

Phone: (513) 569-7432

Fax: (513) 487-2543

email: lytle.darren@epa.gov

From: Prysby, Mike (DEQ) [mailto:PRYSBYM@michigan.gov]
Sent: Friday, October 16, 2015 1:32 PM

To: Lytle, Darren <Lytle.Darren@epa.gov>; Schock, Michael <Schock.Michael@epa.gov>
Cc: Busch, Stephen (DEQ) <BUSCHS@michigan.gov>
Subject: FW: Flint WTP PH2 SEG4 - Corrosion Control

Darren, Michael

We have received Flint's corrosion control proposal from their consultant. If you have comments, please provide them to me by Monday morning.

Michael Prysby, P.E.

District Engineer

Office of Drinking Water and Municipal Assistance

517 290-8817

From: Matta, Samir [mailto:SFMatta@lan-inc.com]
Sent: Friday, October 16, 2015 12:02 AM
To: Prysby, Mike (DEQ)
Subject: Flint WTP PH2 SEG4 - Corrosion Control

Hi Mike,

Please see attached plans for the Corrosion Control Plan for the City of Flint. I will have the official submittal package to you tomorrow afternoon after I get Brent or Mike's signature on the permit application. I will call you when I get back in Lansing to drop the package. Is three sets of full size plans adequate? Would you like some half size plans? Let me know.

Basis of Design

Given that Flint will require lead and copper corrosion control and given that Detroit utilizes orthophosphate for their corrosion control methodology, and that Flint will be receiving Detroit water for the immediate future, orthophosphate is the appropriate corrosion control methodology for Flint. A dosage of 0.8 mg/l as PO_4 has been recommended for the Detroit water. Numerous utilities utilizing Lake Michigan water have a target dosage of 0.9 mg/l as PO_4. Therefore, a target dosage in the range of 0.8 to 0.9 mg/l appears appropriate.

It is expected that, at least initially, there will be a significant PO_4 demand in the system. This will require a significantly higher dosage until this demand is satisfied and the target residual can be maintained. We are therefore designing for capability of a maximum dosage of 1.5 mg/l.

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Please let me know if the information is adequate or you require additional information.

Thanks.

Samir F. Matta, PE

Team Leader

Lockwood, Andrews
& Newnam, Inc.
A LEO A DALY COMPANY

1311 South Linden Road, Suite B • Flint, MI 48532

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To: Lytle, Darren[Lytle.Darren@epa.gov]
Cc: Poy, Thomas[poy.thomas@epa.gov]; Deltoral, Miguel[deltoral.miguel@epa.gov]
From: Henry, Timothy
Sent: Fri 10/23/2015 7:24:20 PM
Subject: RE: FSDWTF -- Flint Corrosion Control -- any more comments?

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Tim Henry
Deputy Director, Water Division
U.S. EPA (W-15J)
77 W. Jackson Blvd., Chicago, IL 60604-3590
Phone: 312.886.6107 Fax: 312.692.2578

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Subject: FSDWTF -- Flint Corrosion Control -- any more comments?

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- Bob

Robert Kaplan

Deputy Regional Administrator

U.S. EPA Region 5

Phone: (312) 886-1499

Cell: (312) 515-9827

Fax: (312) 692-2075

From: Sygo, Jim (DEQ) [mailto:SygoJ@michigan.gov]
Sent: Thursday, October 22, 2015 4:39 PM
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The City's engineering consultant will need to evaluate KWA water in conjunction with the City of Flint treatment plant processes to determine any necessary adjustments in optimized corrosion control treatment prior to initiating service to customers. Full scale testing may not be feasible.

Stephen Busch, P.E.

MDEQ Lansing District Coordinator

Office of Drinking Water and Municipal Assistance

Lansing and Jackson District Supervisor

517-643-2314

buschs@michigan.gov

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Sent: Monday, October 19, 2015 12:05 PM
To: Prysby, Mike (DEQ)
Cc: Schock, Michael; Kempic, Jeffrey; Busch, Stephen (DEQ)
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Mike,

Thank-you for giving us the opportunity to review the city of Flint's corrosion control plan.

We believe it is necessary that Flint boosts orthophosphate dosage. Given that the distribution system has not received orthophosphate in over a year, we expect that orthophosphate will need to be boosted to 1) meet the demand of the distribution system, 2) reach the service lines and other lead-containing components in premise plumbing, and 3) accelerate lead reduction at the consumer's taps. Orthophosphate should preferably be added in the same form as the Detroit source which is phosphoric acid from our understanding. This is the proposed case here, however, a simple test should be performed to make sure that the pH is not impacted in a significant way at the desired target dose.

We have not been able to obtain comprehensive water quality data for the finished water characteristics of the Detroit water that will be fed to Flint, to assess ranges of major chemical characteristic fluctuations. However, based upon the email trail, Detroit water entering the Flint system appears to only contain around 0.4 PO4/L. This concentration range is entirely too low compared to that needed in studies presented and published in the last 20+ years that have focused on lead released directly from lead pipes, and the solubility of the most likely lead orthophosphate pipes scales. We also strongly feel that targeted dose of 0.8 mg PO4/L is also too low, for the very same reason. We would be glad to share with you numerous standard

corrosion control and treatment reference works, best practices guides and published results from US and international lead corrosion control field and pilot studies. Secondly, the basis for that target (other communities using Lake Huron source use the same dose) is not scientifically derived nor does it consider water quality and the current state of Flint's distribution system. We have reviewed the original Detroit corrosion study and have seen some of the LCR monitoring data, and besides the fact that it did not directly pertain to this water source, few dosages were tested in the cited 1994 pipe loop study, and the higher dosage than the one implemented in the field currently was more effective. Based on the limited amount of data on the quality of Detroit water, what we know about the history of Detroit corrosion control, we think an orthophosphate residual of 3 to 4 mg PO4/L should be the minimum starting test target residual for pipe passivation. It is likely that, at least initially a higher dosage will be necessary to reach the far ends of the distribution system and sufficiently reduce lead solubility and release from all lead sources. To allow flexibility, we feel the design of the chemical feed and storage systems should be able to consistently deliver a maximum dose of 5 to 6 mg PO4/L, if substantial orthophosphate loss is observed, if the starting dose is set for the desired residual level of 3 to 4 mg/L as PO4. We suggest that jar tests be performed in advance of orthophosphate addition to Detroit water to evaluate the impact of orthophosphate dose on turbidity that could result from interactions between orthophosphate and background Detroit water quality parameters (e.g., aluminum, calcium, etc.).

We want to stress that immediately shifting to Detroit water and adding orthophosphate will not necessarily translate to immediate improvements. Furthermore, this is a change, albeit a return to past conditions. Nonetheless, a period of system upset should be anticipated. The need for a communication strategy and a distribution system plan are critical.

Lastly, we see no mention of a water quality monitoring program. Two programs need to be put in place immediately (before return to Detroit water) to 1) identify lead sources, 2) assess treatment effectiveness against lead release from all of the simultaneously operating mechanisms (solubility, particulate release, galvanic corrosion), and 3) assess orthophosphate levels and stability of water quality in the distribution system.

There are multiple sources of lead in the Flint distribution system to the consumers' taps, such as: pipes; leaded brass; leaded solder; accumulations on old galvanized steel pipes; possibly accumulated on copper or some plastic pipes. It is critical that the fate of orthophosphate in the distribution system is understood, and how effective it is against each type of lead source, so dosing adjustment can be properly made. For this purpose, we recommend that a number of residences throughout Flint that meet the following plumbing criteria, be identified for an assessment of the contribution lead from the different potential service line and interior plumbing sources, through detailed mapping of plumbing materials, lengths, sizes, and location and type of inline devices and faucets using profile sampling. For confidence in interpretation, probably at

least 5 sites from each of the configurations will be necessary. The configurations we would estimate to be most important (but should be changed or added to if local construction practice indicates it's necessary): Lead service line, galvanized steel interior plumbing; lead service line, copper with leaded solder joints; lead service line, plastic interior plumbing. It is also possible that interior plumbing may differ from the material used for the customer-side service line segment. We would be glad to discuss the specifics of this sampling effort.

For the purpose of assessing stability of water quality in the distribution system and to inform on orthophosphate residual adjustment, we suggest that 8 to 10 locations in the distribution system be selected to measure pH, alkalinity, orthophosphate, turbidity and iron on a weekly basis. These could be collected from TCR sampling locations, or other readily-accessible buildings, should be located at a distribution of locations in the distribution system and should be collected after a flush sufficiently long to assure that "fresh" distribution system water is being measured. Research has shown that over time, orthophosphate can reduce disinfectant demand associated with corroding metallic distribution system materials. These measurements need to be performed in the field and can simply be done with a portable HACH test kit or spectrophotometer.

A lead sampling plan needs to be in place to access the effectiveness of water change and treatment boost. LCR monitoring sites with confirmed lead service lines can be in the sampling pool. Sampling should consist of a 1 liter first draw sample (LCR sample without 5 minute pre-flush), followed by an additional flushed sample or two depending on profile sample results which is intended to capture major lead source(s). The specific details of this effort need to be worked out by the technical committee as soon as possible. We would gladly work with Flint on establishing a water sampling program to identity and verify lead service line sites. The plan and initial sampling effort should be performed before the switch so that one baseline sample set is collected.

Lastly, our strength does not fall under full-scale pump and chemical feed delivery systems. We would only say that the systems need to be scaled-up in size to accommodate our suggested dosing needs. Also, there is the some discussion about diverting water to the Dort reservoir and an associated orthophosphate feed system. We are not familiar with the reservoir but are wondering if it is an open reservoir?

Of course this is a lot of information to share and we would gladly be available to discuss the technical and scientific basis for our suggestions.

Let us know if you have any questions and thanks again,

Darren and Mike

Darren A. Lytle, Ph.D., P.E.

Branch Chief (Acting)

U.S. Environmental Protection Agency

26 West Martin Luther King Dr.

Cincinnati, Ohio 45268

Phone: (513) 569-7432

Fax: (513) 487-2543

email: lytle.darren@epa.gov

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To: Robert Kaplan[Kaplan.Robert@epa.gov]
From: Henry, Timothy
Sent: Fri 10/23/2015 7:26:43 PM
Subject: FW: FSDWTF -- Flint Corrosion Control -- any more comments?

To keep you in the loop, I talked with Tom and Darren and below is what I sent them to review. If the markup is OK I will put it into a message you could send to Jim.

Tim Henry
Deputy Director, Water Division
U.S. EPA (W-15J)
77 W. Jackson Blvd., Chicago, IL 60604-3590
Phone: 312.886.6107 Fax: 312.692.2578

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Sent: Friday, October 23, 2015 2:24 PM
To: Lytle, Darren <Lytle.Darren@epa.gov>
Cc: Thomas Poy <Poy.Thomas@epa.gov>; Deltoral, Miguel <deltoral.miguel@epa.gov>
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Office of Drinking Water and Municipal Assistance

Lansing and Jackson District Supervisor

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Let us know if you have any questions and thanks again,

Darren and Mike

Darren A. Lytle, Ph.D., P.E.

Branch Chief (Acting)

U.S. Environmental Protection Agency

26 West Martin Luther King Dr.

Cincinnati, Ohio 45268

Phone: (513) 569-7432

Fax: (513) 487-2543

email: lytle.darren@epa.gov

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Sent: Friday, October 16, 2015 1:32 PM
To: Lytle, Darren <Lytle.Darren@epa.gov>; Schock, Michael <Schock.Michael@epa.gov>

Cc: Busch, Stephen (DEQ) <BUSCHS@michigan.gov>
Subject: FW: Flint WTP PH2 SEG4 - Corrosion Control

Darren, Michael

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Michael Prysby, P.E.

District Engineer

Office of Drinking Water and Municipal Assistance

517 290-8817

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Samir F. Matta, PE

Team Leader

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& Newnam, Inc.
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Cc: Poy, Thomas[poy.thomas@epa.gov]; Deltoral, Miguel[deltoral.miguel@epa.gov]
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Subject: RE: FSDWTF -- Flint Corrosion Control -- any more comments?

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Robert Kaplan

Deputy Regional Administrator

U.S. EPA Region 5

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EPA ORD staff will provide instructions to the City of Flint for creating test loops to help confirm effectiveness of the corrosion control treatment. This data will help in rebuilding public trust.

The County Health Department and MI Department of Health and Human Services will be conducting blood lead level testing of children in Flint. Children with elevated blood lead levels will be offered exposure assessments of their homes. These assessments should include the contribution of lead from service line and interior plumbing sources. Such diagnostic testing should help further substantiate the effectiveness of corrosion control treatment. Procedures recommended by EPA should be shared with the Michigan Department of Health and Human Services.

The University of Michigan in Ann Arbor had previously expressed interest in assisting the City of Flint. Both the Department of Civil and Environmental Engineering, and School of Public Health should be contacted to determine if that interest still exists with potential to assist in both test loop construction and monitoring, and exposure assessment monitoring in homes. Any water analysis should occur at a certified laboratory.

The City will be required to complete a 6 month round of lead and copper compliance monitoring in the January – June 2016 period. The City continues to offer all residents a first draw lead sample collection and analysis. Any additional staggered monitoring suggestions should be brought before the City's Technical Advisory Committee.

Criteria for deeming the treatment optimized must be established as the LCR only requires compliance with the lead and copper Action Levels once this determination has been made.

The City of Flint is continuing to digitize service line index card records into a Geographic Information System to confirm the location of lead service lines. EPA can provide additional information to the City regarding a sampling procedure to verify lead service line sites.

The City's engineering consultant will need to evaluate KWA water in conjunction with the City of Flint treatment plant processes to determine any necessary adjustments in optimized corrosion control treatment prior to initiating service to customers. Full scale testing may not be feasible.

Lastly, we discussed additional lead drinking water monitoring Flint should do to better assess lead exposure, determine effectiveness of water source change and corrosion control, and identify lead sources. That discussion does not appear to be captured here.

Stephen Busch, P.E.

MDEQ Lansing District Coordinator

Office of Drinking Water and Municipal Assistance

Lansing and Jackson District Supervisor

517-643-2314

buschs@michigan.gov

From: Lytle, Darren [mailto:Lytle.Darren@epa.gov]
Sent: Monday, October 19, 2015 12:05 PM
To: Prysby, Mike (DEQ)
Cc: Schock, Michael; Kempic, Jeffrey; Busch, Stephen (DEQ)
Subject: RE: Flint WTP PH2 SEG4 - Corrosion Control

Mike,

Thank-you for giving us the opportunity to review the city of Flint's corrosion control plan.

We believe it is necessary that Flint boosts orthophosphate dosage. Given that the distribution system has not received orthophosphate in over a year, we expect that orthophosphate will need to be boosted to 1) meet the demand of the distribution system, 2) reach the service lines and other lead-containing components in premise plumbing, and 3) accelerate lead reduction at the consumer's taps. Orthophosphate should preferably be added in the same form as the Detroit source which is phosphoric acid from our understanding. This is the proposed case here, however, a simple test should be performed to make sure that the pH is not impacted in a significant way at the desired target dose.

We have not been able to obtain comprehensive water quality data for the finished water characteristics of the Detroit water that will be fed to Flint, to assess ranges of major chemical characteristic fluctuations. However, based upon the email trail, Detroit water entering the Flint system appears to only contain around 0.4 PO4/L. This concentration range is entirely too low compared to that needed in studies presented and published in the last 20+ years that have focused on lead released directly from lead pipes, and the solubility of the most likely lead orthophosphate pipes scales. We also strongly feel that targeted dose of 0.8 mg PO4/L is also too low, for the very same reason. We would be glad to share with you numerous standard corrosion control and treatment reference works, best practices guides and published results from US and international lead corrosion control field and pilot studies. Secondly, the basis for that target (other communities using Lake Huron source use the same dose) is not scientifically derived nor does it consider water quality and the current state of Flint's distribution system. We have reviewed the original Detroit corrosion study and have seen some of the LCR monitoring data, and besides the fact that it did not directly pertain to this water source, few dosages were tested in the cited 1994 pipe loop study, and the higher dosage than the one implemented in the field currently was more effective. Based on the limited amount of data on the quality of Detroit water, what we know about the history of Detroit corrosion control, we think an orthophosphate residual of 3 to 4 mg PO4/L should be the minimum starting test target residual for pipe passivation. It is likely that, at least initially a higher dosage will be necessary to reach the far ends of the distribution system and sufficiently reduce lead solubility and release from all lead sources. To allow flexibility, we feel the design of the chemical feed and storage systems should be able to consistently deliver a maximum dose of 5 to 6 mg PO4/L, if substantial orthophosphate loss is observed, if the starting dose is set for the desired residual level of 3 to 4 mg/L as PO4. We suggest that jar tests be performed in advance of orthophosphate addition to Detroit water to evaluate the impact of orthophosphate dose on turbidity that could result from interactions between orthophosphate and background Detroit water quality parameters (e.g., aluminum, calcium, etc.).

We want to stress that immediately shifting to Detroit water and adding orthophosphate will not necessarily translate to immediate improvements. Furthermore, this is a change, albeit a return to past conditions. Nonetheless, a period of system upset should be anticipated. The need for a communication strategy and a distribution system plan are critical.

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Lastly, we discussed additional lead drinking water monitoring Flint should do to better assess lead exposure, determine effectiveness of water source change and corrosion control, and identify lead sources. That discussion does not appear to be captured here.

Stephen Busch, P.E.

MDEQ Lansing District Coordinator

Office of Drinking Water and Municipal Assistance

Lansing and Jackson District Supervisor

517-643-2314

buschs@michigan.gov

From: Lytle, Darren [mailto:Lytle.Darren@epa.gov]
Sent: Monday, October 19, 2015 12:05 PM
To: Prysby, Mike (DEQ)
Cc: Schock, Michael; Kempic, Jeffrey; Busch, Stephen (DEQ)
Subject: RE: Flint WTP PH2 SEG4 - Corrosion Control

Mike,

Thank-you for giving us the opportunity to review the city of Flint's corrosion control plan.

We believe it is necessary that Flint boosts orthophosphate dosage. Given that the distribution system has not received orthophosphate in over a year, we expect that orthophosphate will need to be boosted to 1) meet the demand of the distribution system, 2) reach the service lines and other lead-containing components in premise plumbing, and 3) accelerate lead reduction at the consumer's taps. Orthophosphate should preferably be added in the same form as the Detroit source which is phosphoric acid from our understanding. This is the proposed case here, however, a simple test should be performed to make sure that the pH is not impacted in a significant way at the desired target dose.

We have not been able to obtain comprehensive water quality data for the finished water characteristics of the Detroit water that will be fed to Flint, to assess ranges of major chemical characteristic fluctuations. However, based upon the email trail, Detroit water entering the Flint system appears to only contain around 0.4 PO4/L. This concentration range is entirely too low compared to that needed in studies presented and published in the last 20+ years that have focused on lead released directly from lead pipes, and the solubility of the most likely lead orthophosphate pipes scales. We also strongly feel that targeted dose of 0.8 mg PO4/L is also too low, for the very same reason. We would be glad to share with you numerous standard corrosion control and treatment reference works, best practices guides and published results from US and international lead corrosion control field and pilot studies. Secondly, the basis for that target (other communities using Lake Huron source use the same dose) is not scientifically derived nor does it consider water quality and the current state of Flint's distribution system. We have reviewed the original Detroit corrosion study and have seen some of the LCR monitoring data, and besides the fact that it did not directly pertain to this water source, few dosages were tested in the cited 1994 pipe loop study, and the higher dosage than the one implemented in the field currently was more effective. Based on the limited amount of data on the quality of Detroit water, what we know about the history of Detroit corrosion control, we think an orthophosphate residual of 3 to 4 mg PO4/L should be the minimum starting test target residual for pipe passivation. It is likely that, at least initially a higher dosage will be necessary to reach the far ends of the distribution system and sufficiently reduce lead solubility and release from all lead sources. To allow flexibility, we feel the design of the chemical feed and storage systems should be able to consistently deliver a maximum dose of 5 to 6 mg PO4/L, if substantial orthophosphate loss is observed, if the starting dose is set for the desired residual level of 3 to 4 mg/L as PO4. We suggest that jar tests be performed in advance of orthophosphate addition to Detroit water to evaluate the impact of orthophosphate dose on turbidity that could result from interactions between orthophosphate and background Detroit water quality parameters (e.g., aluminum, calcium, etc.).

We want to stress that immediately shifting to Detroit water and adding orthophosphate will not necessarily translate to immediate improvements. Furthermore, this is a change, albeit a return to past conditions. Nonetheless, a period of system upset should be anticipated. The need for a communication strategy and a distribution system plan are critical.

Lastly, we see no mention of a water quality monitoring program. Two programs need to be put in place immediately (before return to Detroit water) to 1) identify lead sources, 2) assess treatment effectiveness against lead release from all of the simultaneously operating mechanisms (solubility, particulate release, galvanic corrosion), and 3) assess orthophosphate levels and stability of water quality in the distribution system.

There are multiple sources of lead in the Flint distribution system to the consumers' taps, such as: pipes; leaded brass; leaded solder; accumulations on old galvanized steel pipes; possibly accumulated on copper or some plastic pipes. It is critical that the fate of orthophosphate in the distribution system is understood, and how effective it is against each type of lead source, so dosing adjustment can be properly made. For this purpose, we recommend that a number of residences throughout Flint that meet the following plumbing criteria, be identified for an assessment of the contribution lead from the different potential service line and interior plumbing sources, through detailed mapping of plumbing materials, lengths, sizes, and location and type of inline devices and faucets using profile sampling. For confidence in interpretation, probably at least 5 sites from each of the configurations will be necessary. The configurations we would estimate to be most important (but should be changed or added to if local construction practice indicates it's necessary): Lead service line, galvanized steel interior plumbing; lead service line, copper with leaded solder joints; lead service line, plastic interior plumbing. It is also possible that interior plumbing may differ from the material used for the customer-side service line segment. We would be glad to discuss the specifics of this sampling effort.

For the purpose of assessing stability of water quality in the distribution system and to inform on orthophosphate residual adjustment, we suggest that 8 to 10 locations in the distribution system be selected to measure pH, alkalinity, orthophosphate, turbidity and iron on a weekly basis. These could be collected from TCR sampling locations, or other readily-accessible buildings, should be located at a distribution of locations in the distribution system and should be collected after a flush sufficiently long to assure that "fresh" distribution system water is being measured. Research has shown that over time, orthophosphate can reduce disinfectant demand associated with corroding metallic distribution system materials. These measurements need to be performed in the field and can simply be done with a portable HACH test kit or spectrophotometer.

A lead sampling plan needs to be in place to access the effectiveness of water change and treatment boost. LCR monitoring sites with confirmed lead service lines can be in the sampling pool. Sampling should consist of a 1 liter first draw sample (LCR sample without 5 minute pre-flush), followed by an additional flushed sample or two depending on profile sample results which is intended to capture major lead source(s). The specific details of this effort need to be worked out by the technical committee as soon as possible. We would gladly work with Flint on establishing a water sampling program to identity and verify lead service line sites. The plan and initial sampling effort should be performed before the switch so that one baseline sample set is collected.

Lastly, our strength does not fall under full-scale pump and chemical feed delivery systems. We would only say that the systems need to be scaled-up in size to accommodate our suggested dosing needs. Also, there is the some discussion about diverting water to the Dort reservoir and an associated orthophosphate feed system. We are not familiar with the reservoir but are wondering if it is an open reservoir?

Of course this is a lot of information to share and we would gladly be available to discuss the technical and scientific basis for our suggestions.

Let us know if you have any questions and thanks again,

Darren and Mike

Darren A. Lytle, Ph.D., P.E.

Branch Chief (Acting)

U.S. Environmental Protection Agency

26 West Martin Luther King Dr.

Cincinnati, Ohio 45268

Phone: (513) 569-7432

Fax: (513) 487-2543

email: lytle.darren@epa.gov

From: Prysby, Mike (DEQ) [mailto:PRYSBYM@michigan.gov]
Sent: Friday, October 16, 2015 1:32 PM
To: Lytle, Darren <Lytle.Darren@epa.gov>; Schock, Michael <Schock.Michael@epa.gov>
Cc: Busch, Stephen (DEQ) <BUSCHS@michigan.gov>
Subject: FW: Flint WTP PH2 SEG4 - Corrosion Control

Darren, Michael

We have received Flint's corrosion control proposal from their consultant. If you have comments, please provide them to me by Monday morning.

Michael Prysby, P.E.

District Engineer

Office of Drinking Water and Municipal Assistance

517 290-8817

From: Matta, Samir [mailto:SFMatta@lan-inc.com]
Sent: Friday, October 16, 2015 12:02 AM
To: Prysby, Mike (DEQ)
Subject: Flint WTP PH2 SEG4 - Corrosion Control

Hi Mike,

Please see attached plans for the Corrosion Control Plan for the City of Flint. I will have the official submittal package to you tomorrow afternoon after I get Brent or Mike's signature on the permit application. I will call you when I get back in Lansing to drop the package. Is three sets of full size plans adequate? Would you like some half size plans? Let me know.

Basis of Design

Given that Flint will require lead and copper corrosion control and given that Detroit utilizes orthophosphate for their corrosion control methodology, and that Flint will be receiving Detroit water for the immediate future, orthophosphate is the appropriate corrosion control methodology for Flint. A dosage of 0.8 mg/l as PO_4 has been recommended for the Detroit water. Numerous utilities utilizing Lake Michigan water have a target dosage of 0.9 mg/l as PO_4. Therefore, a target dosage in the range of 0.8 to 0.9 mg/l appears appropriate.

It is expected that, at least initially, there will be a significant PO_4 demand in the system. This will require a significantly higher dosage until this demand is satisfied and the target residual can be maintained. We are therefore designing for capability of a maximum dosage of 1.5 mg/l.

The arriving Detroit water will likely have some residual PO_4 when it arrives at Flint. It has been reported that this residual will be approximately 0.4 mg/l. The system must therefore be capable of a minimum dosage of 0.4 mg/l.

Based upon the usage of 75% Phosphoric Acid and a flow range of 4 MGD to 25 MGD, with an average day of 16 MGD, the expected feed rate will be 1.35 to 32 gpd. Average Phosphoric Acid feed is expected to be 10.8 gpd, requiring 30 days storage of 325 gal.

Orthophosphate will need to be applied at two locations. Detroit water will enter the Flint system at Control Station CS2, and supplementary phosphate will be applied there. However, on occasion some incoming water may need to be diverted to the Dort Reservoir, bypassing CS2. This water would then be introduced to the system through High Service Pump Station PS4 and phosphate would be introduced at this location.

Please let me know if the information is adequate or you require additional information.

Thanks.

Samir F. Matta, PE

Team Leader

Lockwood, Andrews
& Newnam, Inc.
A LEO A DALY COMPANY

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To: Kaplan, Robert[kaplan.robert@epa.gov]
Cc: Lytle, Darren[Lytle.Darren@epa.gov]; Schock, Michael[Schock.Michael@epa.gov]; Poy, Thomas[poy.thomas@epa.gov]; Deltoral, Miguel[deltoral.miguel@epa.gov]; Kempic, Jeffrey[Kempic.Jeffrey@epa.gov]
From: Henry, Timothy
Sent: Fri 10/23/2015 7:45:21 PM
Subject: Recommended response to DEQ re: Flint WTP PH2 SEG4 - Corrosion Control

Bob – below is a response we recommend you send to Jim.

++

Jim – the following includes a couple of changes (in red italics) that we feel need to be incorporated into the text to reflect our earlier comments (from Mike and Darren) and the subsequent call. Additionally there is a recommendation at the very end that was discussed but not incorporated into the writeup you sent, which we also feel should be incorporated. Please feel free to get back with us if you have any questions. Otherwise we appreciate the opportunity to provide input and your willingness to address our comments.

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The City of Flint will need to supply a similar phosphoric acid product, NSF Standard 60 approved with allowable maximum dosage.

DWSD supplied water is currently dosed at 0.39 mg/L as P (1.2 mg/L as PO4) slightly above DWSD's OCCT requirement to dose a minimum of 0.9 mg/L as PO4 and have a minimum plant tap residual of 0.8 mg/L as PO4. DWSD plant tap residuals have been shown to consistently be at 0.39 mg/L as P (1.2 mg/L as PO4). In addition water supply entering Flint has been tested and so far shown to contain approximately 0.39 mg/L as P (1.2 mg/L as PO4) as well. *Flint will need to test to ensure that pH is not significantly affected at the PO4 target dosage.*

To achieve pipe passivation Flint will boost orthophosphate dosage to establish a minimum distribution residual of 1.0 mg/L as P (3.1 mg/L as PO4). The chemical feed system will be sized to achieve a dose up to 2.0 mg/L as P (6.1 mg/L as PO4) in case orthophosphate loss is observed.

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To: Henry, Timothy[henry.timothy@epa.gov]; Kaplan, Robert[kaplan.robert@epa.gov]
From: Deltoral, Miguel
Sent: Sat 10/24/2015 12:19:39 PM
Subject: Re: Recommended response to DEQ re: Flint WTP PH2 SEG4 - Corrosion Control

Sorry for not responding, I left early yesterday. Below are my comments for the group's consideration.

1) Has anyone evaluated where the water quality parameter monitoring is being conducted by Flint? If not, we might want to do that to make sure that the sites selected are representattive of the water quality throughout the city. My concern is that the chlorine residual range reported by the City in their October 2015 water quality report is given as 0.2 – 4.0(https://www.cityofflint.com/public-works/utilitieswater/water-treatment-plant/).However, we know that in at least one area of the city, even after flushing the tap for 8 hours, there was no detectable chlorine residudal. Repeated tests over 18 days (last one was September 3) show the same. These measurements were done after the replacement of the old service line, so the chlorine is not getting to this area (http://flintwaterstudy.org/information-for-flint-residents/chlorine-monitoring-in-flint-resident-ms-leeanne-walters-home/)

2) The recommendations in the final report on the sampling we did in Flint are linked to the corrosion control treatment. The lead concentrations in the scale/sediment are orders of magnitude higher that what we typically see in drinking water samples, so I think from a risk perspective, we need to better understand the composition and stability of the scales withn the pipes to to assess the stability of the scales and inform the treatment. Although the release of scale/sediment is not unique to Flint, the dislodging of scale/sediment would pose the greatest risk to residents by far. Our final report will be posted in the near future so should we include the assessment sampling in our comments on corrosion control (see below)?

Recommendations

As indicated by the results from the Citizen name / Ex. 6 home and previous EPA work, the presence of lead pipes over many years has likely resulted in the accumulation of lead in the scales within non-lead pipes downstream of the lead pipe and physical disturbances to the leaded or non-leaded portions of the service lines have the potential to release large amounts of scale and sediment that could pose an immediate and acute health hazard to the residents. Consequently, even with corrosion control treatment in place in the future, physical disturbances will be capable of dislodging the high lead-bearing scale and sediment from non-lead pipes as well as lead pipes, as was the case in the earlier EPA study.

Obtaining information on the lead reservoirs in the scales within the lead and non-leaded portions of intact service lines is essential for determining the potential risk to residents from lead-bearing scale released as lead lines are replaced as well as the risk that may remain following removal of the lead lines, where the non-leaded portions of service lines are left in place.

As the Citizen name / Ex. 6 service line was very long compared to the length of most typical service lines, it is important to assess the potential risk posed by the scale reservoirs in more typical lengths of service lines by extracting both the leaded and non-leaded portions of service lines which have not been physically disturbed. The service lines chosen for extraction and analysis should be representative of the materials commonly used downstream of the lead pipe (e.g., galvanized iron, copper, plastic). Extraction/handling procedures should be developed by EPA to ensure that damage to the scales from the excavation, extraction and delivery of the service line segments is minimized. Sequential sampling should also be conducted on a representative group of homes with common plumbing materials (e.g., galvanized iron, copper, plastic) to determine the extent to which the lead from the service line has seeded the interior plumbing in homes.

It is also critically important to develop and incorporate ongoing training and public education on the potential for high lead release from the scales as a result of any future physical disturbances to service lines and mitigative actions that residents can take to lower their exposure risk. The training and educational material should be assessed for clarity, meaningfulness, and accessibility by a group of residents and health experts to ensure the effectiveness of the communications.

At a minimum, immediate training and public education on the potential risks posed by physical disturbances to service lines should be developed by communications experts and provided to residents, community groups, elected officials, health departments, pediatricians and gynecologists, water and non-water utilities (gas, electric, cable, etc.), plumbing organizations and contractors. Residents should be notified of scheduled work by water and non-water utilities and informed of the potential risk of increased lead levels due to these disturbances.

Miguel A. Del Toral
Regulations Manager
U.S. EPA R5 GWDWB

77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

From: Henry, Timothy
Sent: Friday, October 23, 2015 02:45 PM
To: Kaplan, Robert
Cc: Lytle, Darren; Schock, Michael; Poy, Thomas; Deltoral, Miguel; Kempic, Jeffrey
Subject: Recommended response to DEQ re: Flint WTP PH2 SEG4 - Corrosion Control

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Cc: Rowan, Anne[rowan.anne@epa.gov]; Beckmann, Ronna Erin[beckmann.ronna@epa.gov]; Harrison, Melissa[Harrison.Melissa@epa.gov]; Abrams, Dan[Abrams.Dan@epa.gov]; Poy, Thomas[poy.thomas@epa.gov]; Fortin, Denise[Fortin.Denise@epa.gov]; Deamer, Eileen[deamer.eileen@epa.gov]; Singer, Joshua[Singer.Joshua@epa.gov]; Arcaute, Francisco[Arcaute.Francisco@epa.gov]; Peterson, John[peterson.john@epa.gov]; Loop, Travis[Loop.Travis@epa.gov]
To: Kelley, Jeff[kelley.jeff@epa.gov]; Hedman, Susan[hedman.susan@epa.gov]; Kaplan, Robert[kaplan.robert@epa.gov]; Hyde, Tinka[hyde.tinka@epa.gov]
From: Cassell, Peter
Sent: Sun 10/25/2015 10:59:21 PM
Subject: Flint Clips Updated for Oct 25

FLINT DRINKING WATER CLIPS

US. EPA Region 5 – as prepared by Peter Cassell (ORA/OEC/PA) on Oct. 23

- Is emergency manager law to blame for Flint water crisis? (Detroit Free Press)

- Legislature, feds should take on Flint water investigation (MLive)

- Michigan health officials scramble to help lead-poisoned Flint (USA TODAY/Detroit Free Press)

- Let's find a clean water solution for Michigan (Detroit News)

- Flashpoint: Gov. Snyder talks water crisis, Michigan roads (Clickondetroit.com)

- Questions on leadership emerge in Flint mayoral race (MLive)

Is emergency manager law to blame for Flint water crisis? (Detroit Free Press)

http://www.freep.com/story/news/politics/2015/10/24/emergency
manager-law-blame-flint-water-crisis/74048854/

By Paul Egan, Detroit Free Press 7:40 a.m. EDT October 25, 2015

48 CONNECT 29 TWEET 1 LINKEDIN 19 COMMENTS

LANSING — Michigan's emergency manager law, already highly controversial because it was rejected by voters in 2012 but reinstated by Republican lawmakers less than six weeks later, is under fresh scrutiny in light of the lead contamination of Flint's drinking water.

Flint was under the control of a state-appointed emergency manager when it began drawing water from the Flint River as a cost-saving measure last year. Tests show the corrosive nature of the river water caused lead in the pipes that deliver it to homes and other structures to leach into the drinking water, causing it to exceed federal limits for lead — which can cause permanent brain damage in children.

There's now universal agreement that the city's switch to Flint River water was a mistake without necessary safeguards, such as adding anticorrosion materials to the water before it was pumped to homes through the lead pipes to help prevent leaching.

But there's no consensus about whether the bad choice was one that could have been made by elected leaders in any cash-strapped city, or whether the Flint debacle is an indictment of Public Act 436, which Gov. Rick Snyder signed into law in December 2012, just weeks after voters rejected its earlier incarnation, Public Act 4 of 2011.

Snyder and other proponents said the revamped law gave financially distressed cities more options, control and financial support. Critics, including the Stand up for Democracy group that worked to repeal the earlier law, said it was an equally onerous example of state overreach.

Eric Scorsone, an extension specialist in the state and local government program at Michigan State University and an expert in public finance issues, said there's greater risk under an emergency manager that decisions could be taken that sacrifice other important considerations to the bottom line. But he said what happened in Flint does not mean the EM law is a bad statute that must be repealed.

"I think it's more about government leaders in general have to be careful when we're in a cost-cutting mode," whether dealing with water or services such as police and fire protection, he said. "You have to pay the bills, but you also have to ask yourself how far can you go before you start to endanger public health."

Elsewhere in Michigan, the use of emergency managers has been a mixed bag, with Allen Park, Benton Harbor and Flint — with the exception of the water crisis — being among the more successful examples, and Ecorse and Highland Park among the less successful ones, Scorsone said.

Though no problem has been more glaring than the one in Flint, other decisions made by emergency managers have been criticized, such as the decision in Pontiac to sell the Silverdome, the former home of the Detroit Lions, for $583,000 in 2009. The investors who bought it said in 2014 they want to sell it for $30 million.

"In hindsight, it seems way too cheap right now," Wayne Workman, Michigan's deputy treasurer for local government services, said of the 2009 sale. But "the city was bleeding. ... It was time to get some liquidity," and the facility had an annual maintenance cost of $1.5 million. "It was not going to make any money for the city for a long, long time."

Scorsone said the use of EMs has generally been more successful in cities than it has been in school districts, such as Detroit Public Schools, where the nature of school funding and the fact students can easily leave for other school districts make for problems much more difficult for EMs to handle.

"I think what (the Flint situation) points out is the implementation of this ... has to be carefully balanced," Scorsone said. "There could be a tendency to go with cost savings plans that are not always thought out as well as they should be.

"It's easy to Monday morning quarterback," but "this needs to be a lesson for government leaders in general. I don't think it's an indictment of the law, per se."

Flint, which is now under a transition advisory board as an interim step toward return to local control, was placed in receivership under an emergency manager appointed by Snyder in 2011. The city, which had previously purchased Lake Huron water through the Detroit Water and Sewerage Department, began drawing its water from the Flint River in April 2014. The city stuck with the river water despite months of complaints from residents about the poor taste and color of the water, among other concerns. It reconnected to the Detroit system on Oct. 16.

Snyder and other state officials have noted that Flint Mayor Dayne Walling and the Flint City Council backed the 2013 decision to split with DWSD and move to the planned Karegnondi Water Authority, which will also draw water from Lake Huron through a pipeline that is still under construction.

"The unfortunate situation in Flint is in no way an indictment ... of Public Act 436, the Local Financial Stability and Choice Act," said Terry Stanton, a spokesman for the Treasury Department.

"This is not a situation where the mayor and council wanted to utilize one system with the EM reversing course," Stanton said. "All involved in the decision-making process agreed KWA was the best long-term option for the city of Flint."

When Flint notified Detroit in April 2013 that it had opted to switch to the Karegnondi Water Authority, Detroit gave it one year's notice that it was terminating its contract to supply Flint with Lake Huron drinking water. Detroit's decision to cut Flint off before the Karegnondi pipeline to Lake Huron would be completed — a decision made one month after Detroit was placed under the control of its own former emergency manager, Kevyn Orr — is what precipitated Flint's move to the Flint River as a drinking water source pending completion of its own water provider.

Walling, who takes ownership of the decision to switch to the Karegnondi Water

Authority, told the Flint Journal he had no direct involvement in the decision to draw drinking water from the Flint River.

A March 7, 2014, letter from then-Flint emergency manager Darnell Earley to the DWSD, obtained by the ACLU of Michigan, shows Earley declined the DWSD's offer to continue selling water to Flint after the termination of the contract in April of 2014, saying "the Flint Water Treatment Plant will be fully operational and capable of treating Flint River water prior to the date of termination."

State Senate Minority Leader Jim Ananich, D-Flint, said the decision to draw drinking water from the Flint River, which was conditional on oversight by the Michigan Department of Environmental Quality, "was during a period of an emergency manager, and there weren't many decisions that were allowed to be made by local officials."

Senate Minority Leader Jim Ananich, D-Flint (Photo: Detroit Free Press file photo)
"Definitely, we need to look at the emergency manager laws and make sure there is some accountability," Ananich said. "They shouldn't be leaving cities with such crises."

Earley is now the emergency manager of Detroit Public Schools.

Snyder told the Free Press he doesn't necessarily think the Flint water crisis is a knock against the emergency manager law and said the issues are under review. He said the use of the law has clearly been successful in other Michigan municipalities, including Detroit.

Lonnie Scott, executive director of the liberal group Progress Michigan, disagrees.

In Flint, "the decision was made based on the bottom line and trying to save money," Scott said of the move to Flint River drinking water.

"An elected official, if you have a problem in your district, people are coming up and complaining and talking to you, you take care of that issue. An EM doesn't have that accountability," Scott said.

"The emergency managers are accountable to no one but the governor, so they don't care."

Workman said the law is "meeting expectations," and "I honestly feel feel good about the EM process in Michigan."

Critics don't isolate mistakes made by mayors and city councils to condemn that form of municipal government and, likewise, the incident in Flint should not be looked at in isolation to condemn the use of emergency managers, Workman said.

It's significant that in recent years Michigan had six cities under emergency managers, and that is now down to one, in Lincoln Park, Workman said.

"It's given us the tools that we need in some pretty dire situations," he said. "Right now, I don't foresee the need for the next emergency manager."

Scorsone, the MSU expert, said Orr's restructuring work as an emergency manager in Detroit made the Chapter 9 municipal bankruptcy of Detroit's largest city much smoother than it would have been otherwise.

Contact Paul Egan: 517-372-8660 or pegan@freepress.com. Follow him on Twitter @paulegan4.

Staff writer Kathleen Gray contributed to this report.

Legislature, feds should take on Flint water investigation (MLive)

http://www.mlive.com/opinion/flint/index.ssf/2015/10/flint_water ed_jim_ananich.html

By MLive/Flint Journal opinion
on October 25, 2015 at 5:50 AM

The following is a guest opinion column for The Flint Journal.

By state Sen. Jim Ananich

Switching to the Detroit Water and Sewerage Department isn't the final solution for Flint — it's the first step on a long road to recovery.

Expert assistance is essential. Unfortunately, the Michigan Department of Environment Quality (MDEQ) cannot perform an investigation we can all trust. As such, I've sent a letter to the EPA and to the Auditor General requesting an accurate and thorough investigation to determine whether the misapplication of federal water testing rules was intentional or due to negligence. Their results must be transparent and easy to understand.

It's also crucial that individuals are held accountable for the damage done to the children of my community. And the best way we can do that and start restoring Flint's trust in our state government is to initiate a stringent legislative investigation and oversight process. For far too long the Michigan Legislature has ceded its power to the governor's office, failing to perform meaningful oversight. That's how systemic problems like the MDEQ's failings fester.

I welcome a third-party examination of the MDEQ's mishandling of Flint's water. At the same time, it's imperative the Legislature and federal authorities perform tough examinations. We cannot rely on a single task force appointed by Governor Snyder to get the job done, especially when that task force does not have clearly stated goals designed to root out systemic, departmental failures.

We have to push state officials to finish the fix, ask hard questions, and lay out exactly what needs to be done.

In addition, these individuals may be able to make policy recommendations to ensure these mistakes never happen again, but they likely lack the investigative background to hold individuals fully accountable for this public health crisis.

Last Wednesday, I suggested the governor ask former U.S. Senator Carl Levin to get involved in any investigation. Sen. Levin served as the chair of the Permanent Subcommittee on Investigations during his tenure in the Senate, in addition to a number of other government oversight subcommittees.

I cannot think of an individual better suited to restoring trust in our state government and getting to the bottom of this crisis.

We have to push state officials to finish the fix, ask hard questions, and lay out exactly what needs to be done to get the Flint community the answers they deserve. We also have to keep testing the water used in our schools. Schools are supposed to be safe havens for our children, not places where they might be subject to irreparable brain damage.

Lastly, we need to keep delivering filters and bottled water to those in need, particularly to those who may be housebound or unable to make regular distribution hours. We should not place the burden of obtaining clean water on residents; the state has to step up and provide access to what is a basic right.

We have the opportunity to examine the flaws in our drinking water infrastructure statewide. Our pipes, much like our bridges and roads, weren't built to last forever, and we can't let their maintenance bankrupt local municipalities or harm our citizens. If the Legislature acts swiftly and authoritatively, we can find solutions to ensure Michiganders have clean drinking water now — and in the future.

Jim Ananich is a state Senator representing Michigan's 27th District, which includes the city of Flint. He can be reached at senjananich@senate.mi.gov or find him on Twitter.

Michigan health officials scramble to help lead-poisoned Flint (USA

TODAY/Detroit Free Press)

http://www.usatoday.com/story/news/nation-now/2015/10/25/lead-poisoning-flint-water/74599112/

USA Today Network Robin Erb, Detroit Free Press 6:18 p.m. EDT October 25, 2015

FLINT, Mich. -- To the panicked parents in Flint: Help is on the way.

That's the message from doctors, university researchers and public health officials mobilizing to move an embattled city beyond shock and anger over its toxic water to a brighter next chapter — one that involves wrapping services around Flint's children to protect them from the worst effects of the lead that streamed through the city's water lines.

"This is somewhat of an unprecedented situation. Usually when we talk about elevated blood-lead levels, it's about an individual child or an individual family situation. Here you have a large, communal source of lead," said Dr. Dean Sienko, associate dean for public health at Michigan State University's College of Human Medicine, which is helping lead the effort.

While lead poisoning cannot be reversed, experts say that the right kind of nutrition, parenting and community services can mitigate the worst damage: learning disabilities, speech deficits and severe behavior problems in the coming years.

With guidance, in part, from a group known as the Flint Lead INnovation Team, the Michigan Department of Health and Human Services is expected to send letters this week to families recommending they talk to their child's doctor about immediate lead testing and long-term monitoring for developmental problems, as well as focusing on nutrition, since certain foods can reduce the absorption of lead.

Among other steps under discussion:

--Move local nutritionists and dietitians to pediatric offices and health clinics.

--Develop a phone app for Flint residents that would remind them of the importance of screening and even promote healthy recipes.

--Boost enrollment in federal programs such as Women, Infants, and Children (WIC) and Double Up Food Bucks, which give low-income families access to fresh produce.

--Increase aggressive screening to monitor kids for developmental delays, launch school-based stress-reduction programs and boost enrollment in Early Head Start and Head Start programs to give kids who may struggle with learning disabilities an academic boost before they start school.

--Expand home visiting programs in which health care and social workers meet with families, in part, to monitor children for developing learning disabilities or mental health issues.

The crisis came about as a result of Flint officials ending the city's water contract with Detroit in 2014, saying costs were too high and opting instead to join the Karegnondi Water Authority, which is building a system to supply Genesee County with water from Lake Huron. But with that system not coming on line until next year, Flint decided in the interim to pull water from the Flint River and treat it at its own facility. Complaints began almost immediately; last month, research by Dr. Mona Hanna-Attisha, a Hurley Children's Center pediatrician, showed a dangerous spike in children's blood-lead levels, corroborating water testing results earlier this year by a Virginia Tech researcher.

Mona Hanna-Attisha, MD, MPH program director for the pediatric residency at the Hurley Children's Hospital at Hurley Medical Center in Flint discusses how her research showed that the percentage of children with elevated blood-lead levels in some Flint ZIP codes nearly doubled since the city began to draw its water from the Flint River. (Photo: Ryan Garza, Detroit Free Press)

Amid accusations of a failure to properly treat the water and a cover-up, Flint reconnected to the Detroit water system a week ago. But it may take a few weeks to completely flush the system.

"We need to give parents hope, and we can do that," said Hanna-Attisha, who is now also helping lead a team of doctors and researchers. "We need to help them build resilience for their kids."

Just down the hallway from Hanna-Attisha's office in the new, colorfully bright Hurley clinic in downtown, Janika Owens and Demario Stewart last week carried in their 2-month-old son, Damonei, for a routine checkup. He was measured and weighed. Medical staff checked to make sure bones and organs are developing normally, even though lead poisoning's effects won't show up this early.

That leaves Damonei's parents wondering.

Although they've used bottled water for his formula, Owens at times had cooked with Flint water while she was pregnant. She'd brushed her teeth with it.

Lead can pass across the placenta to a fetus, studies have shown.

Who would ever think you couldn't trust — of all things — water?

"I never thought I'd have to deal with this — ever," Demario Stewart said, trying to soothe his increasingly wriggly infant. "Ill never trust my water again."

Hanna-Attisha says she has seen parents streaming in almost every day in recent weeks — parents who wonder how much lead their children have ingested. And about whether their child has irreparable brain damage. And whether it will one day trigger the kind of learning or behavior problems that can set a life permanently off course.

"They wonder: 'Did I protect my baby?' 'Did I trust too much?' " she said.

It's a grinding, toxic stress that finds access points in everyday inconveniences. Is the restaurant coffee made from Flint River water? Are the filters on the public drinking fountains adequate? Will the babysitter be as vigilant in getting bottled water? Is this a passing headache, or something more permanent?

Last week, Kaden Kyger's tiny fingers and face were slathered in strawberry yogurt as the toddler chased the family cats around the living room of their home. His mother believes he has been spared from lead poisoning because she used bottled water for his formula and she cooked using filtered tap water.

But then again...

The filter is getting old, June Kyger, 25, notes. When should she get a new one? She has heard there are free filters, but who has the best ones?

And what about lead testing for 16-month old Kaden? Who does that testing?

June Kyger, 25, of Flint holds her 16-month son, Kaden Kyger, while talking about their concerns about using Flint's water at her home in the south side Flint on Thursday, Oct. 22, 2015. (Photo: Ryan Garza, Detroit Free Press)

He seems fine — but then again...

The worries "every single day" are compounded by a sense of helplessness, said Kyger, who moved back to Flint earlier this year after several years away: "I don't really know my way around (city services) like I used to."

And some parents still aren't aware of the problem at all. Or they don't know help is available.

For every two clients served in the WIC program, it's estimated there is another eligible client who is not enrolled, said Mark Valacak, Genesee County's health officer.

"We have some very hard-to-reach populations," he said.

'Very, very unusual'

There's a symbiosis in this kind of public health initiative, too.

As researchers and doctors help residents navigate the years ahead, they will gather information from medical exams, cord blood testing of newborns, a review of low-weight births and miscarriages, results of water testing and geo-mapping of the hardest-hit areas. And that, in turn, will guide future public health efforts.

"What has happened in Flint is very, very unusual. They have essentially conducted an uncontrolled experiment, in that they corroded the heck out of these ... lead pipes," said Wayne State University lead expert Shawn McElmurry, who last weekend was in Flint testing water in homes just 48 hours after the city switched back to Detroit water.

Secondary to helping Flint's residents, Flint's crisis can offer important lessons to other cities relying on aging infrastructure, he said.

Testing over the coming years will offer insight into how well "the infrastructure recovers."

All of this, though, will take work to shift the conversation from finger-pointing to something more productive, said Jeffrey Dwyer, a senior associate dean at MSU's College of Human Medicine, which already was positioned in Flint to work with the community. Funded by a $9-million grant from the Charles Stewart Mott Foundation, its researchers are focused on the public health problems that Flint residents identified as their most pressing: chronic disease, behavioral health and healthy behaviors.

Let others call for the investigations when it comes to the water issues, Dwyer said — for public health, the most immediate task is buffering Flint's families from the worst effects of lead.

"We can all do the finger-pointing, but at the end of the day, there are people who need our help, and we have an obligation to figure out how to provide that," he said.

Let’s find a clean water solution for Michigan (Detroit News)

http://www.detroitnews.com/story/opinion/2015/10/25/find-clean-water-solution-michigan/74545540/

12:14 a.m. EDT October 25, 2015

It was great to see the Michigan Legislature come together and put politics aside as they voted unanimously in finding a resolution to the Flint drinking water crisis. However, this single incident also exposed a major flaw in a system that should ensure that all residents of Michigan have access to clean drinking water, not water that is treated from polluted rivers and is brought to them through aging, deteriorating pipes.

We have witnessed how difficult it has been for our state leaders to legislate changes in the way we fund roads. It is going to be even more difficult to bring about positive legislation to update our aging underground drinking water systems and failing sewer systems. We all take for granted that our water supply and sewage disposal systems are in fine working condition, and yet significant troubles lurk just below the surface in many, if not most, communities across the state. The delay in road funding has blemished the image of the state that put the world on wheels. A continued delay in proper funding for our underground infrastructure will also be an embarrassing black eye for the Great Lakes State, whose greatest natural resource is the water in our lakes, rivers and streams.

Flint is not alone with its aging and dilapidated system challenges. Other municipalities throughout Michigan have significant problems, and no one is talking about them publicly, in most cases. Pictures of many drinking water delivery pipes, which can range from 50-100 years old, would horrify most people. Many would be sickened if they truly understood that most of the beach closings that happen in Michigan on a regular basis are the result of fecal contamination from sewer systems. Even more disheartening is the fact that with very little state and federal financial support, our underground infrastructure is paid for mainly at the local level, and cash-strapped municipalities have not been able to implement rate increases for much needed improvements.

How many more Flint catastrophes need to happen before we wake up and fix the problem? A comprehensive state plan is sorely needed now to begin the replacement of outdated and failing systems; and, more importantly, to properly fund our ailing underground infrastructure throughout our state. This will take cooperation from the public, as well as local and state leaders — now — not after another public health emergency.

Clean water is essential, but it costs money. Nothing is more important to life, and nothing is taken more for granted. The lesson of Flint has been painful and costly. Let’s find a solution.

Mike Nystrom

Executive vice president

Michigan Infrastructure & Transportation Association

Flashpoint: Gov. Snyder talks water crisis, Michigan roads (Clickondetroit.com)

http://www.clickondetroit.com/news/politics/flashpoint/flashpoi gov-snyder-talks-water-crisis-michigan-roads/36038948

Published On: Oct 25 2015 10:37:18 AM EDT Updated On: Oct 25 2015 10:45:35 AM EDT

Video only at link

Questions on leadership emerge in Flint mayoral race (MLive)

http://www.mlive.com/news/flint/index.ssf/2015/10/leadership_q

Incumbent Mayor Dayne Walling answers questions as candidate Karen Weaver takes notes during a Flint mayoral candidate forum held Thursday, July 30, 2015 at the White Horse Tavern in Flint, just days before the primary election. *(MLive File Photo)*

By Gary Ridley | gridley@mlive.com
on October 25, 2015 at 5:03 AM, updated October 25, 2015 at 5:06 AM

FLINT, MI -- Leadership ability has been called into question for two people vying to lead a city in the midst of a crime epidemic, chronic unemployment and a drinking water crisis.

Incumbent Dayne Walling is attempting to retain his position as Flint mayor against newcomer Karen Weaver in the upcoming November election. Attacks have been waged on both candidates' ability to actually command a city that is attempting to incubate a revival and break the grip of rampant crime and economic calamity.

On one side, Weaver and her supporters have criticized Walling's handling of the decision to use the Flint River to provide drinking water to the city, which ended when it was discovered the switch caused elevated blood lead levels in some Flint children.

Meanwhile, Walling and his supporters have targeted Weaver's lack of public leadership experience, and her firing from a health center's managerial post.

Walling's time in office, which has been stippled with state-appointed emergency managers, has seen Flint routinely identified as one of the nation's most-violent cities and is in the center of a water crisis that has gained international attention.

"I believe it's a failure of leadership and broken trust," Weaver said of Walling's handling of the city's water emergency.

In 2014, the city ended its use of Lake Huron water purchased from the Detroit water system and began using the Flint River as a drinking water source.

That river use has ended after elevated lead levels were found in Flint water and in the blood of infants and children since the switch occurred. Using money from the city, state and Charles Stewart Mott Foundation, the city reconnected to Detroit water Oct. 16.

Walling has denied responsibility for the change and said the switch to the Flint River was done by then-emergency manager Darnell Earley. But it was Walling who pushed the button closing Flint's connection the Detroit water system and seemingly stood by the quality of the Flint River even as residents protested the dirty, stinking water coming out of some of their taps.

It's this apparent complicity that has drawn Walling the ire of protestors and Weaver. His opponent claims he should have been more vocal in opposition to the plan to use the river, despite the state takeover.

"When you know something is wrong, you should speak out," Weaver said. "I know there's an emergency manager, but it doesn't take your voice."

But Walling said he has been vocal in his opposition to some of the decisions made by the emergency managers. He said he was opposed to the switch to river water from the beginning and lobbied state leaders to provide a safe drinking water source for Flint residents.

"My opponent's accusations about raising my voice are wrong," Walling said, adding that he has a demanding, results-focused leadership style that he's used to help streamline and strategize the city's government.

Walling said he regularly raised his concerns on issues ranging from drinking water to cuts in the city police department with other key decision makers during the deliberation process, a fact his opponent wouldn't be aware of because she had no participation in Flint's governance prior to her decision to run for mayor.

It's his opponent's unfamiliarity with local politics that Walling has used to try and separate himself from Weaver during the campaign. He was routinely used phrases like "my opponent doesn't understand some of how these things work" during forums and public speaking opportunities in an attempt to highlight her lack of experience.

Weaver has challenged Walling's accusations, pointing to her experience in leadership roles during her professional career. But that experience isn't without its own controversy.

Throughout the campaign, Weaver has pointed to her position as director of behavioral services at Mott Children's Health Center to highlight her experience in managing a staff and a budget.

In 2010, Weaver filed a lawsuit against the health center, claiming that she was wrongfully discharged from her job because she threatened to testify against other health center leadership about billing practices and that she was a victim of age discrimination.

However, the health center contended it fired Weaver because she failed to improve the productivity goals for her department, according to court records.

Court records show that mental health specialists Weaver was tasked with overseeing were expected to see six clients per day. Under Weaver's leadership, the specialists were only visiting three per day.

The health center claimed Weaver was warned in February 2009 that a change of leadership would be made if there was no progress in her department and was even offered a change in positions, which she declined.

Productivity remained stagnant despite the intervention, according to court records.

Despite the health center's allegations, Weaver said she stands by her leadership experience at the facility.

"I'm not going to run from my record at Mott," Weaver said. "I stand by what I accomplished at Mott."

The lawsuit was eventually settled out of court. The terms of the settlement are not public due to a non-disclosure agreement.

Walling said the lawsuit will be addressed in radio ads from his campaign.

"My opponent's termination and lawsuit need to be considered by the public when they consider her professional experience," Walling said.

Voters head to the polls Nov. 3.

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To: Henry, Timothy[henry.timothy@epa.gov]
From: Schock, Michael
Sent: Mon 10/26/2015 1:34:42 PM
Subject: RE: Recommended response to DEQ re: Flint WTP PH2 SEG4 - Corrosion Control

Tim;

I have a big reservation about the highlighted sentence. I haven't had a chance to talk to Darren about it yet. I know Miguel agrees with me on it. If this hasn't gone out yet, we need to discuss the certified laboratory issue.

--Mike

From: Henry, Timothy
Sent: Friday, October 23, 2015 3:45 PM
To: Kaplan, Robert <kaplan.robert@epa.gov>
Cc: Lytle, Darren <Lytle.Darren@epa.gov>; Schock, Michael <Schock.Michael@epa.gov>; Poy, Thomas <poy.thomas@epa.gov>; Deltoral, Miguel <deltoral.miguel@epa.gov>; Kempic, Jeffrey <Kempic.Jeffrey@epa.gov>
Subject: Recommended response to DEQ re: Flint WTP PH2 SEG4 - Corrosion Control

Bob – below is a response we recommend you send to Jim.

+++

Jim – the following includes a couple of changes (in red italics) that we feel need to be incorporated into the text to reflect our earlier comments (from Mike and Darren) and the subsequent call. Additionally there is a recommendation at the very end that was discussed but not incorporated into the writeup you sent, which we also feel should be incorporated. Please feel free to get back with us if you have any questions. Otherwise we appreciate the opportunity to provide input and your willingness to address our comments.

- Bob

This will summarize our phone conversation of 10/19 and provide clarification regarding the previous comments.

The City of Flint converted back to purchasing of Detroit Water and Sewerage Department water on Friday October 16, 2015. No indications of upset in the distribution system have been reported to date.

Detroit Water and Sewerage Department (DWSD) has confirmed the use of Innophos "Phosphoric Acid 75% Technical" product which is NSF Standard 60 certified with a maximum allowable feed rate of 13 mg/L as product.

The City of Flint will need to supply a similar phosphoric acid product, NSF Standard 60 approved with allowable maximum dosage.

DWSD supplied water is currently dosed at 0.39 mg/L as P (1.2 mg/L as PO4) slightly above DWSD's OCCT requirement to dose a minimum of 0.9 mg/L as PO4 and have a minimum plant tap residual of 0.8 mg/L as PO4. DWSD plant tap residuals have been shown to consistently be at 0.39 mg/L as P (1.2 mg/L as PO4). In addition water supply entering Flint has been tested and so far shown to contain approximately 0.39 mg/L as P (1.2 mg/L as PO4) as well. *Flint will need to test to ensure that pH is not significantly affected at the PO4 target dosage.*

To achieve pipe passivation Flint will boost orthophosphate dosage to establish a minimum distribution residual of 1.0 mg/L as P (3.1 mg/L as PO4). The chemical feed system will be sized to achieve a dose up to 2.0 mg/L as P (6.1 mg/L as PO4) in case orthophosphate loss is observed.

Flint will continue Water Quality Parameter Monitoring in accordance with the LCR at the same 25 distribution locations used under the Flint River. In addition 10 of these locations also serve as total coliform monitoring sites, including disinfectant residual, and Flint will be told to, for the purpose of assessing water stability, conduct water quality parameter monitoring *for pH, alkalinity, orthophosphate*, along with turbidity and iron sampling will be at these 10 locations on a weekly basis as suggested. This will also ensure that a minimum recommended pH levels are being maintained throughout the system.

EPA ORD staff will provide instructions to the City of Flint for creating test loops to help confirm effectiveness of the corrosion control treatment. This data will help in rebuilding public trust.

The County Health Department and MI Department of Health and Human Services will be conducting blood lead level testing of children in Flint. Children with elevated blood lead levels will be offered exposure assessments of their homes. These assessments should include the contribution of lead from service line and interior plumbing sources. Such diagnostic testing should help further substantiate the effectiveness of corrosion control treatment. Procedures recommended by EPA should be shared with the Michigan Department of Health and Human Services.

The University of Michigan in Ann Arbor had previously expressed interest in assisting the City of Flint. Both the Department of Civil and Environmental Engineering, and School of Public Health should be contacted to determine if that interest still exists with potential to assist in both test loop construction and monitoring, and exposure assessment monitoring in homes. Any water analysis should occur at a certified laboratory.

The City will be required to complete a 6 month round of lead and copper compliance monitoring in the January – June 2016 period. The City continues to offer all residents a first draw lead sample collection and analysis. Any additional staggered monitoring suggestions should be brought before the City's Technical Advisory Committee.

Criteria for deeming the treatment optimized must be established as the LCR only requires compliance with the lead and copper Action Levels once this determination has been made.

The City of Flint is continuing to digitize service line index card records into a Geographic Information System to confirm the location of lead service lines. EPA can provide additional information to the City regarding a sampling procedure to verify lead service line sites.

The City's engineering consultant will need to evaluate KWA water in conjunction with the City of Flint treatment plant processes to determine any necessary adjustments in optimized corrosion control treatment prior to initiating service to customers. Full scale testing may not be feasible.

Lastly, we discussed additional lead drinking water monitoring Flint should do to better assess lead exposure, determine effectiveness of water source change and corrosion control, and identify lead sources. That discussion does not appear to be captured here.

To: Poy, Thomas[poy.thomas@epa.gov]
Cc: Kaplan, Robert[kaplan.robert@epa.gov]
From: Henry, Timothy
Sent: Mon 10/26/2015 2:32:25 PM
Subject: FW: Recommended response to DEQ re: Flint WTP PH2 SEG4 - Corrosion Control

Can we chat about the highlighted text and Mike's comment before the comment gets sent to MI?

Tim Henry
Deputy Director, Water Division
U.S. EPA (W-15J)
77 W. Jackson Blvd., Chicago, IL 60604-3590
Phone: 312.886.6107 Fax: 312.692.2578

From: Schock, Michael
Sent: Monday, October 26, 2015 9:16 AM
To: Henry, Timothy <henry.timothy@epa.gov>; Kaplan, Robert <kaplan.robert@epa.gov>
Cc: Lytle, Darren <Lytle.Darren@epa.gov>; Poy, Thomas <poy.thomas@epa.gov>; Deltoral, Miguel <deltoral.miguel@epa.gov>; Kempic, Jeffrey <Kempic.Jeffrey@epa.gov>
Subject: RE: Recommended response to DEQ re: Flint WTP PH2 SEG4 - Corrosion Control
Importance: High

Most of these suggestions are great, we (Darren and I) agree with the red text.

There is one sentence, however, with which we (myself, Miguel, Darren) have a strong disagreement. See yellow highlight. The sentence should be deleted.

While there is an SDWA legal reason why LCR and other regulatory compliance sample analysis needs to be done by a "certified" laboratory, there is no good reason why diagnostic testing and research studies must use a certified laboratory for analyses. There is no correlation between "quality" between certified and non-certified laboratories. Neither our own WSWRD laboratory or the Region 5 laboratory are "certified," but the analytical performance is of top quality. Similarly, university laboratories can give high quality results, given careful attention to good QA and methodological practices. Our laboratory, and other non-certified laboratories supporting research studies often employ even better and more accurate analytical techniques and more rigorous quality assurance standards.

So, requiring certified laboratories for research/diagnostic/assessment purposes increases costs, increases logistical burden, and does not result in any payoff in terms of improved data quality.

--Mike

From: Henry, Timothy
Sent: Friday, October 23, 2015 3:45 PM
To: Kaplan, Robert <kaplan.robert@epa.gov>
Cc: Lytle, Darren <Lytle.Darren@epa.gov>; Schock, Michael <Schock.Michael@epa.gov>; Poy, Thomas <poy.thomas@epa.gov>; Deltoral, Miguel <deltoral.miguel@epa.gov>; Kempic, Jeffrey <Kempic.Jeffrey@epa.gov>
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To: Henry, Timothy[henry.timothy@epa.gov]
Cc: Poy, Thomas[poy.thomas@epa.gov]
From: Kaplan, Robert
Sent: Mon 10/26/2015 4:39:01 PM
Subject: Re: Recommended response to DEQ re: Flint WTP PH2 SEG4 - Corrosion Control

We need to talk. Pls come by at 115 if you can. Bob

Sent from my iPhone

On Oct 26, 2015, at 9:32 AM, Henry, Timothy <henry.timothy@epa.gov> wrote:

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>
> Tim Henry
> Deputy Director, Water Division
> U.S. EPA (W-15J)
> 77 W. Jackson Blvd., Chicago, IL 60604-3590
> Phone: 312.886.6107 Fax: 312.692.2578
>
> **From:** Schock, Michael
> **Sent:** Monday, October 26, 2015 9:16 AM
> **To:** Henry, Timothy <henry.timothy@epa.gov>; Kaplan, Robert <kaplan.robert@epa.gov>
> **Cc:** Lytle, Darren <Lytle.Darren@epa.gov>; Poy, Thomas <poy.thomas@epa.gov>; Deltoral, Miguel <deltoral.miguel@epa.gov>; Kempic, Jeffrey <Kempic.Jeffrey@epa.gov>
> **Subject:** RE: Recommended response to DEQ re: Flint WTP PH2 SEG4 - Corrosion Control
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To: Kaplan, Robert <kaplan.robert@epa.gov>
Cc: Lytle, Darren <Lytle.Darren@epa.gov>; Schock, Michael <Schock.Michael@epa.gov>; Poy, Thomas <poy.thomas@epa.gov>; Deltoral, Miguel <deltoral.miguel@epa.gov>; Kempic, Jeffrey <Kempic.Jeffrey@epa.gov>
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From: Henry, Timothy
Sent: Mon 10/26/2015 4:46:26 PM
Subject: RE: Recommended response to DEQ re: Flint WTP PH2 SEG4 - Corrosion Control

OK

Tim Henry
Deputy Director, Water Division
U.S. EPA (W-15J)
77 W. Jackson Blvd., Chicago, IL 60604-3590
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Cc: Rowan, Anne[rowan.anne@epa.gov]; Beckmann, Ronna Erin[beckmann.ronna@epa.gov]; Harrison, Melissa[Harrison.Melissa@epa.gov]; Abrams, Dan[Abrams.Dan@epa.gov]; Poy, Thomas[poy.thomas@epa.gov]; Fortin, Denise[Fortin.Denise@epa.gov]; Deamer, Eileen[deamer.eileen@epa.gov]; Singer, Joshua[Singer.Joshua@epa.gov]; Arcaute, Francisco[Arcaute.Francisco@epa.gov]; Peterson, John[peterson.john@epa.gov]; Loop, Travis[Loop.Travis@epa.gov]; Purchia, Liz[Purchia.Liz@epa.gov]; Allen, Laura[Allen.Laura@epa.gov]; Henry, Timothy[henry.timothy@epa.gov]
From: Cassell, Peter
Sent: Tue 10/27/2015 3:09:43 PM
Subject: Flint News Clips Updated for Oct 27

FLINT DRINKING WATER CLIPS

US. EPA Region 5 – as prepared by Peter Cassell (ORA/OEC/PA) on Oct. 27

•□□□□□□□□ Column: Don't blame EM for Flint water disaster (Detroit News)

•□□□□□□□□ Ex-emergency manager says local leaders made decision to use Flint River water (Mlive/Flint Journal)

Column: Don't blame EM for Flint water disaster (Detroit News)

http://www.detroitnews.com/story/opinion/2015/10/26/opinion-flint-water-disaster/74657458/

Darnell Earley 11:32 p.m. EDT October 26, 2015

It is critically important that the record be set straight about the decision-making and approval processes that led to Flint joining the Karegnondi Water Authority (KWA) with the use of Flint River water as the interim water supply. The fact is, the river has served and been used as the back-up supply for decades, and this was the rationale given to me by staff and Mayor Walling, who also serves as chairperson of the KWA board. Contrary to reports in the media and rhetoric being espoused by individuals, the decision was made at the local level, by local civic leaders.

The decision to separate from Detroit Water and Sewerage Department and go with the

KWA, which included the decision to pump Flint River water in the interim, were part of a long-term plan that was approved by Flint's mayor and confirmed by a City Council vote of 7-1 on March 25, 2013. This plan was presented to me when I was appointed as Flint emergency manager in October 2013 – a full seven months after the City Council's affirmative vote.

Genesee County Drain Commissioner Jeff Wright also made the affirmative vote by the City Council a necessary condition of joining the KWA, and applauded the decision in a March 26, 2013, news release, "… I have said from the beginning that this decision must be made by Flint's City Council and Mayor … I am glad that the residents of Flint were able to have their voices heard via their elected officials."

The mayor's approval of the plan and the subsequent near unanimous vote by City Council were in no way coerced, forced or demanded by the state, nor any emergency manager. Council's affirmative vote was supported and signed as an Executive Order by then-Emergency Manager Edward Kurtz on March 29, 2013. A subsequent order Kurtz signed on June 26, 2013, speaks specifically to "… upgrading of the Flint Water Plant to ready it to treat water from the Flint River to serve as the primary drinking water source for approximately two years and then converting to KWA delivered lake water."

When I began my term as emergency manager, it fell to me to oversee the implementation of the previously accepted and approved plans, as the DWSD terminated the contract with Flint in April 2014. It did not fall to me to question, second guess or invalidate the actions taken prior to my appointment.

At the time the decision was made there was no way to predict such an unfortunate outcome. I would also offer that had local leaders known then what they know now, parts of their decision may have been entirely different. What the City of Flint and the State of Michigan are now dealing with is the management of an unintended consequence resulting in a negative outcome from an otherwise sound public policy decision. There is no "blame" to affix on any emergency manager for that.

As the solutions are put into place to address the serious concerns at hand, I believe that everyone's attention should now turn toward another serious concern – what is being done in the long term to replace the aged and crumbling water distribution systems that exists throughout Flint and Genesee County, which was a major contributing factor to this serious issue in the first place.

I am a strong believer that the truth supported by fact speaks for itself. This was a local decision that was made by local civic leaders. Anyone who says otherwise is being disingenuous for whatever reason.

Darnell Earley formerly served as the emergency manager of Flint. He is currently the emergency manager of Detroit Public Schools.

Ex-emergency manager says local leaders made decision to use Flint River water (Mlive/Flint Journal)

http://www.mlive.com/news/flint/index.ssf/2015/10/ex-emergency_manager_says_loca.html

By Ron Fonger | rfonger1@mlive.com
on October 26, 2015 at 4:21 PM, updated October 26, 2015 at 9:56 PM

FLINT, MI -- The city has stopped using the Flint River as its drinking water source, but that hasn't ended the finger-pointing over who decided to use it in the first place.

Former emergency manager Darnell Earley said in a statement to The Flint Journal-MLive that "local civic leaders" — not the state — made the decision, which came to an abrupt end earlier this month as the city was reconnected to the Detroit water system.

Earley, who was Flint's emergency manager at the time of the switch, said Mayor Dayne Walling and the City Council in March 2013 approved a "long-term plan" that included joining the Karegnondi Water Authority and the temporary use of the river.

The resolution does not indicate support or opposition to using the river, but Earley said river water was part of the overall plan presented to him by Walling and other city staff when he started working in Flint in October 2013.

"Anyone who says otherwise is being disingenuous for whatever reason," Earley's statement said.

The city began treating river water in April 2014, ending decades of buying treated Lake Huron water from Detroit, but operators struggled to control bacteria, total trihalomethanes (TTHM) and lead levels for the 17 months that followed.

Gov. Rick Snyder eventually intervened, offering a plan for the city to reconnect to Detroit water, using city, state and grant funds.

Walling, who toasted the switch to the river in a ceremony at the time, called Earley's statement about responsibility for the decision "blatantly false," and City Council President Josh Freeman said it amounts to a "fairy tale."

"It was the state emergency manager who failed to reach an agreement with Detroit to deliver water on a short-term contract after they" terminated an expired contract with the city, Freeman said.

Earley was appointed by Snyder to run Flint seven months after the council's vote to join the KWA. That vote happened during the tenure of another emergency manager, Ed Kurtz.

The Flint Journal could not reach Kurtz for comment.

Days after the council vote to join the KWA, Kurtz signed a similar order and, in June 2013, signed a contract for engineering services aimed at turning river water into drinking water.

"The mayor's approval of the plan, and the subsequent near-unanimous vote by City Council were in no way coerced, forced or demanded by the state, not any emergency manger," Earley's statement said.

The Flint Journal-MLive could not reach Earley for further comment.

But Walling said Earley's contention is simply untrue.

"The (2013) resolution makes no mention of the river and the financial projections provided to myself and the City Council (at that time) clearly show the city paying for Detroit water until connecting to the new pipeline," Walling wrote in an email to The Journal.

Walling has said he privately objected to using the Flint River as a temporary water source but was supportive of the plan once it was decided by Kurtz.

###

To: Kaplan, Robert[kaplan.robert@epa.gov]
From: Hedman, Susan
Sent: Wed 10/28/2015 3:20:44 PM
Subject: Re: Flint Safe Drinking Water Task Force

Thank you.

Sent from my iPhone

On Oct 28, 2015, at 11:15 AM, Kaplan, Robert <kaplan.robert@epa.gov> wrote:

From: Hedman, Susan
Sent: Monday, October 19, 2015 12:29 PM
To: Kaplan, Robert <kaplan.robert@epa.gov>
Subject: Flint Safe Drinking Water Task Force

FLINT SAFE DRINKING WATER TASK FORCE

US EPA is committed to working with our state and local partners to ensure a safe and reliable water supply for the residents of Flint, Michigan. To achieve this, the EPA Region 5 Administrator will establish a Task Force to provide the Agency's technical expertise through regular, but no less than weekly, conversations with designated officials* from MDEQ and the City of Flint to assist with developing and implementing a plan to secure water quality, including measures to optimize corrosion control. Task Force members will be available to consult with MDEQ and the City of Flint on site in Flint as needed. The Task Force will also coordinate as necessary with federal, state and local public health agencies to assist with protection of public health.

Specifically, the Task Force will provide technical assistance to the MDEQ and the City of Flint to reconnect the Flint system to a new source of drinking water (to be supplied by the Great Lakes Water Authority) and to optimize corrosion control for the Flint system, starting in October 2015. The Task Force will also provide technical assistance to the MDEQ and the City of Flint, as needed, in advance of and following connection of the Flint water system to a new source of drinking water (to be supplied by the Karegnondi Water Authority) and to optimize corrosion control for the Flint system, starting in 2016.

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Office of Research and Development Scientist Darren Lytle

Office of Research and Development Scientist Michael Schock

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Region 5 Water Division Deputy Director Tim Henry

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Sent from my iPhone

To: Kaplan, Robert[kaplan.robert@epa.gov]
From: Hedman, Susan
Sent: Wed 10/28/2015 3:26:22 PM
Subject: Re: Flint Safe Drinking Water Task Force

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Sent from my iPhone

To: Kelley, Jeff[kelley.jeff@epa.gov]; Hedman, Susan[hedman.susan@epa.gov]; Kaplan, Robert[kaplan.robert@epa.gov]; Hyde, Tinka[hyde.tinka@epa.gov]
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From: Cassell, Peter
Sent: Wed 10/28/2015 3:42:09 PM
Subject: Flint News Clips Updated for Oct 28

FLINT DRINKING WATER CLIPS

US. EPA Region 5 – as prepared by Peter Cassell *(ORA/OEC/PA)* on Oct. 28

- □□□□□□□□ Water is the main issue in next week's mayor's race in Flint (Michigan Radio)

- □□□□□□□□ Ananich blasts former emergency manager for Flint water switch 'fairy tale' (Mlive)

- □□□□□□□□ Group to head to Lansing regarding Flint water issues (ABC 12 WJRT)

- □□□□□□□□ An investigation is needed to determine if Flint's lead problems were just incompetence or something worse (Detroit Metro Times)

- □□□□□□□□ Agency criticized over Flint water drops marketing plan (AP)

- □□□□□□□□ State, emergency managers can't escape blame for Flint water switch (Flint Journal)

- □□□□□□□□ State DEQ pulls request for help with image amid Flint water crisis (MLive)

- □□□□□□□□ Congressman holding telephone town hall about Flint water (AP)

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http://michiganradio.org/post/water-main-issue-next-weeks-mayors-race-flint#stream/0

By Steve Carmody • 19 hours ago

Listen at link

Flint, Michigan voters will elect a mayor next week. The main issue in the election centers on the city's drinking water.

Flint's problem-plagued drinking water is expected to play a significant role in next week's election for mayor.

Flint residents have been complaining for more than a year about the quality of their city's drinking water. Next month, many voters say they will cast their votes for mayor with those problems in mind.

Credit Steve Carmody / Michigan Radio

For more than a year, people in Flint have been holding protests about the city's tap water.

"There's some people in Flint, Michigan who don't believe this water is safe," Pastor Alfred Harris told a crowd at one protest at Flint city hall a few months back.

Along with complaints about rising lead levels and other problems, many have been calling for changes at city hall.

"It's time for us to stand up…speak up and tell this mayor to get out of town," Pastor Alan Overton urged the crowd at that same rally.

That's not what a man running for re-election wants to hear.

Dayne Walling has been Flint's mayor for six years. He's on the ballot again next week.

Flint Mayor Dayne Walling is seeking his third term. But complaints about the city's water may cost him votes in next week's election.

Credit Steve Carmody / Michigan Radio

Walling's drawn the wrath of many people in Flint for his highly visible role in the city's switch from Detroit water to the Flint River back in April of 2014. Walling pushed the button making the switch happen and later toasted with other city officials at Flint's water plant. He also repeatedly told Flint residents their tap water was "safe to drink."

It turns out it wasn't.

Walling now blames state and federal agencies for misleading him.

"None of what happened over the last 18 months should have took place," Walling says, "The water didn't meet the standards, because the MDEQ wasn't even applying the standards. So yes, I feel…used."

Tests have shown high lead levels in the drinking water in some people's homes and in the blood of many Flint children. Researchers believe the highly corrosive Flint River water is to blame. They claim the water is leeching lead from pipes.

Walling says this issue is "personal" to him, since he and his family were among those in Flint drinking the water.

He blames state appointed emergency managers for the switch to the Flint River.

Mayor Walling says he's pushing the governor's office to come up with tens of millions of dollars to repair the damage done to the city's pipes.

But that might not be enough to convince Flint voters to separate Walling from the decision to switch away from Detroit water.

Just down the street from city hall, a campaign worker for Walling's opponent in next week's election was recently busy working the phones.

Karen Weaver has made fixing Flint's drinking water problems a key plank in her campaign platform

"Good Morning, I'm calling from Friends of Karen Weaver," the woman would say as she left a message, "This is a friendly reminder call to thank you for supporting and voting for Karen Weaver in the coming November 3rd election."

This is Karen Weaver's first run for elected office. The Flint businesswoman emerged from a four person field to win a spot in next week's general election.

Flint's water problems have become the main focus of her campaign to unseat Walling.

Weaver says the mayor shouldn't blame the city's water problems exclusively on emergency managers appointed by the governor.

"If everything was the emergency manager, why didn't you say that before?" asks Karen Weaver, "Why didn't you say this wasn't my idea before. But now all of a sudden you want to say what you think you need to say to get elected."

Weaver says Walling has also failed to address the city's crime and economic problems during his six years as mayor.

Weaver says she will do things differently if voters elect her next week.

For his part, Walling has repeatedly questioned Weaver's experience and her understanding of how government works.

Walling defends his record on crime, pointing to a decline in overall crime and more investment in downtown Flint and in other parts of the city.

Paul Rozycki is a professor emeritus at Mott Community College in Flint.

The long-time local political scientist says, despite the many issues facing Flint, water is the issue on voters' minds, and that's not good for Mayor Walling.

"He's taking heat for the water," says Rozycki. "Every time I go to a public forum, the first thing he gets beat up on is the water issue."

Earlier this month, Mayor Walling was the one to announce that Flint had reconnected to Detroit water. The switch took place less than two weeks after Walling stood next to Gov. Snyder to announce a $12 million dollar plan to disconnect the city's drinking water from the Flint River.

But challenger Karen Weaver hopes voters won't forget the 18 month experiment with the Flint River and that it happened during Mayor Walling's watch.

"I hope people don't say 'Oh well, he's done what he needs to do now…so everything's OK' because it's not," says Weaver. "Because this was a person who did not speak up for us. This was a person who was not honest with us."

Despite it all, Dayne Walling expects to win a third term as Flint mayor next week, though he predicts the election will be close.

"I'm in the fight. And I'm not going to stop fighting until it's won," says Walling. "I know there will be others that will come after me in later years. But, I want to continue leading this city as mayor."

Already hundreds of people have voted absentee, many of whom made up their minds about the mayor's race before the city switched back to Detroit water earlier this month.

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http://www.mlive.com/lansing-news/index.ssf/2015/10/ananich_blasts_flint_water_fai.html

By Jonathan Oosting | joosting@mlive.com
on October 28, 2015 at 7:01 AM, updated October 28, 2015 at 7:58 AM

LANSING, MI — Michigan Senate Minority Leader Jim Ananich had harsh words on Tuesday for former Flint Emergency Manager Darnell Earley, who has denied any culpability for the city's switch to Flint River water.

"This kind of fantasy, this fairy tale stuff, is just irresponsible, and he needs to take accountability for his failings in the past before he expects us to trust him in the future," said Ananich, D-Flint.

The city began drawing drinking water from the Flint River in April of 2014, while Earley was in charge. Scientists later discovered dangerously high lead levels in drinking water and the blood of children.

Earley, now serving as a state-appointed emergency manager for Detroit Public Schools, was at the Capitol for a legislative hearing on that district's financial struggles and need for state assistance.

Speaking with reporters before the hearing, Earley said he had been tasked with implementing a Flint water plan that had been put in motion before Gov. Rick Snyder picked him to run the city in October of 2013, calling it a "local decision" to switch sources.

The Flint City Council had approved a long-term plan to move off of Detroit water and join the new Karegnondi Water Authority, which is still in the process of building its own Lake Huron pipeline. The council resolution did not indicate support or opposition for using the Flint River in the interim, but Earley said that was part of the plan that city leaders presented him when he arrived.

"It didn't fall to me to second guess that issue," Earley said. "There's always concerns when you're treating water — river water is more difficult to treat — but it wasn't my role to act as the person responsible for determining what that involved."

Former Flint EM Darnell Earley: Water switch was local decision Darnell Earley answers Flint water questions outside an education hearing at the Michigan Capitol on October 27, 2015.

Flint Mayor Dayne Walling and other city leaders have disputed that characterization, and Ananich said he thinks "there's absolutely no question" that Earley is downplaying his role.

"He is telling a fairly tale from start to finish," Ananich said. "He knows the emergency manager made the decision. The City Council voted on the KWA, but there was nothing about Flint Water in there. It was a decision that was made by the emergency manager."

Ananich said Earley's recent comments make it difficult to trust him as he asks the Legislature to "bail out" Detroit Public Schools.

Snyder is seeking $715 million in state funding over 10 years to help the struggling district climb out from under a mountain of debt, a plan that Earley vouched for Tuesday at the Capitol.

"You fail in Flint, you fail everywhere else, and now you're asking me to trust you in Detroit? He needs to take responsibility for his actions before he expects me to do anything for him anywhere else," said Ananich.

The Michigan Legislature, at the behest of the governor, this month approved $9.35 million in state assistance to help Flint move back to Detroit water until the KWA pipeline is online, a switch that has already occurred. The state funding will also cover the costs of additional residential water filters and lead testing.

While Snyder has appointed a task force to review the Flint water switch. Ananich is also calling for legislative hearings and has backed U.S. Rep. Dan Kildee's call for a federal probe. Earley's description of the switch "really shows why an aggressive comprehensive investigation needs to happen," he said.

Jonathan Oosting is a Capitol reporter for MLive Media Group. *Email him*, find him on *Facebook* or follow him on *Twitter*.

Posted: Tue 6:19 PM, Oct 27, 2015

By: ABC12 News Team

FLINT (WJRT) - (10/27/15) - A group of people is heading to Lansing and will demand whole house filters for people living in Flint, their medical expenses paid for and they want a state of emergency declared.

The group blames the state and governor for the water issues in Flint.

We're told two busloads of people will arrive at the Capitol Wednesday at 9 a.m.

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http://www.metrotimes.com/detroit/michigans-department-of-environmental-quality-admitted-incompetence-in-the-flint-lead-problem-an-independent-investigation-is-needed-to-dete/Content?oid=2378217

Toxic Tapdance *By Curt Guyette*

You know things are bad when the best defense you can conjure is incompetence.

But that's exactly what Dan Wyant, director of Michigan's Department of Environmental Quality, resorted to last week when he admitted that the state mishandled the Flint water crisis.

"It has recently become clear that our drinking water program staff made a mistake while working with the city of Flint," Wyant announced in a written statement. "Simply stated, staff employed a federal protocol they believed was appropriate, and it was not."

It is bad enough that the obtuse and antiseptic nature of that admission stands in stark contrast to the human tragedy it is supposed to address: the contamination of a city's drinking water with lead, a potent neurotoxin that can cause permanent damage, especially in children.

Even worse than the statement itself is the fact that Wyant's comment, limp as it is, would likely not have been made at all were it not for a batch of emails obtained by Virginia Tech University professor Marc Edwards.

Edwards has been at the forefront of bringing to light the catastrophe that began in April 2014, when Flint's state-appointed emergency manager ordered the city stop buying its water from Detroit and start using the Flint River as the municipality's source of drinking water.

When that changeover occurred, the state should have ensured Flint continued using chemicals designed to control corrosion — and keep lead from leeching into the water flowing into people's homes.

Instead, according to Flint Public Works director Howard Croft, officials at the MDEQ decided against using corrosion control.

Why?

According to Wyant, it is because MDEQ staff was confused, and somehow applied rules intended for cities much smaller than Flint, which has nearly 100,000 residents.

Admitting to incompetence, it appears, is preferable to confessing to outright dishonesty and cover-up.

The documents obtained by Edwards and posted on the website FlintWaterStudy.org, as well as emails obtained by the ACLU of Michigan in a separate Freedom of Information Act request, show MDEQ staff adamantly refused to apply the type of corrosion control the U.S. Environmental Protection Agency said was required and common sense would indicate was absolutely needed to protect the health of Flint's residents.

Instead of reacting quickly when the problem started to become apparent in February, MDEQ officials dragged their feet, initially provided misinformation to the EPA, and then tried to tamp down legitimate fears once the true nature of the threat began to be publicly exposed.

The first alarm

On Feb. 26, Jennifer Crooks, Michigan program officer for the EPA's Region 5, sent MDEQ staff an urgent message regarding high levels of lead in the water at the home of Flint resident LeeAnne Walters and her family, according to documents obtained by the ACLU of Michigan through a Freedom of Information Act request.

Crooks reported to MDEQ that Flint's utilities manager, Mike Glasgow, had tested Walters' home for lead.

"WOW!!!! Did he find LEAD!" Crooks exclaimed.

Lead levels of 104 parts per billion were detected — seven times the federal action level of 15 parts per billion.

"She has two children under the age of 3," Crooks wrote. "Big worries here."

The problem, Crooks explained, was that the river water, chemically so different than the much cleaner Lake Huron water previously supplied by Detroit, was "leaching out contaminants of the biofilms inside the pipes."

That biofilm — essentially a protective coating created by the addition of phosphates to the water — was being destroyed by the highly corrosive river water.

Water that contained no corrosion control.

But the EPA, at that point, didn't know that. Crooks assumed MDEQ was adhering to federal regulations and using some sort of corrosion control, but wasn't sure about the specifics.

"Flint must have Optimal Corrosion Control Treatment," Crooks wrote. "Is it phosphates?"

The next day, the MDEQ's Stephen Busch, district supervisor for the Flint region, replied with an email assuring the EPA that the city of Flint did indeed have an optimized corrosion control program. But he offered no specifics.

In reality, however, there was no such program in place at all.

In March, Crooks sent another email to MDEQ staff, saying the situation at Citizen name / Ex. 6 had grown worse, with a second test finding water lead levels of 397 parts per billion.

"Any thoughts on how to respond to her?" Crooks asked. "I'm running out of ideas."

At that point, the MDEQ tried to make it seem that the high lead levels being found in Walters' home came from lead plumbing rather than from a citywide infrastructure problem with the old pipes that run throughout much of Flint.

But a personal inspection by the EPA's Miguel Del Toral found what the Walters family knew: The lead had to be coming from outside, because the plumbing in their house was all made of plastic.

It was in April that the EPA finally learned that Flint, operating under the guidance of the MDEQ, in fact had no corrosion-control program.

Despite that, MDEQ director Wyant was insisting at a press conference in October that the city *did* have a corrosion treatment program in place all along — even though two different independent studies had already produced evidence of a severe lead problem in Flint's water.

Lime was being used to do the job, Wyant told a crowd of reporters gathered in a room at Flint's Kettering University. It just wasn't doing a good enough job, he asserted.

But according to Virginia Tech's Edwards, adding lime to Flint's water was actually exacerbating the corrosion problem.

"I was relaying what staff and consultants have indicated to me," Wyant said in a statement provided to *The Detroit News*. "Lime softening was used to address the hardness of the water. While this has an impact on pH, testing bore out that more needed to be done."

Indeed.

"At this point, nothing MDEQ says should be believed," wrote Edwards in a posting on FlintWaterStudy.org.

All along, it had been forces outside of the MDEQ that have been responsible for getting the truth out about the problems of lead in Flint's water.

Regarding corrosion control, it was Walters, the mother of a 4-year-old son found to have elevated levels of lead in his blood, who ferreted out the truth.

Determined to do everything within her power to make sure no other innocent children were damaged, she kept digging for the truth, and then looked for allies who would help expose it.

One of the things she did, after learning from Del Toral the state's claims about the use of corrosion control, was to contact officials in the city's Department of Public Works. That's when she learned that corrosion control had not been used since April 2014, when the switch to the Flint River was made.

As Edwards reported on FlintWaterStudy.org:

"First, Flint residents had to determine on their own that MDEQ's assertion of 'optimal corrosion control' was false, after children's blood lead was elevated from drinking the water. When confronted, MDEQ then acknowledged that Flint had 'no corrosion control.'"

So, is it really incompetence, as Wyant is now claiming, or intentional cover-up?

That question has yet to be answered with certainty, but here is one fact to consider: In February, the EPA told the MDEQ that it could provide Flint with a corrosion expert who could come in and assist in uncovering the source of the city's lead problem.

That offer was ignored until September, when a collaborative effort by members of Flint's Clean Water Coalition, Edwards and his team of researchers at Virginia Tech, and the ACLU of Michigan led to an independent, citywide study the revealed the truth: Lead levels were much higher than what the city and state were claiming.

Lost trust

At this point, Wyant and the MDEQ have zero credibility.

As the emails obtained by Edwards and the ACLU of Michigan clearly show, the department knew as early as February that Flint had a lead problem.

When a scathing internal EPA memo written by Del Toral was obtained by the ACLU and published in July, MDEQ spokesman Brad Wurfel's public response was to call Del Toral a "rogue" employee and to assure the people of Flint they could "relax" when it came to concerns about lead in their water.

Likewise, the department's initial reaction to both the independent Virginia Tech study and a subsequent study by Dr. Mona Hanna-Attisha at Hurley Children's Hospital — who found the number of children with elevated levels of lead in their blood doubled after the switch to the river — was to attempt to discredit results that didn't comport with state and city claims that the water was safe.

When the MDEQ and Gov. Rick Snyder were finally forced to acknowledge, on Oct. 8, that the disastrous decision to switch to the Flint River — a cost-saving measure taken by the emergency manager given complete control of Flint by Snyder — had to be reversed, the governor continued to act as if this were all just some kind of governmental glitch.

A town's water supply had been contaminated with lead. Children would suffer from lower IQs, learning disabilities and behavioral problems as a result, scarred for the rest of their lives.

Even so, Snyder tried to maintain that there was no reason to find out who is to "blame" for this and hold them accountable. Instead, he maintained, an "after-action report" to assure similar mistakes wouldn't be made in the future would suffice.

To date, the only repercussion meted out by the MDEQ has been to reassign one employee.

That, clearly, is inadequate. It is also just as clear that the MDEQ can't be trusted to investigate itself.

Snyder has since been forced to step up his response and last week appointed an "independent" task force to investigate the issue.

Is that enough? State Sen. Minority Leader Jim Ananich (D-Flint) doesn't think so. He is calling for a truly independent inquiry, meaning that Snyder wouldn't be the one choosing the investigators, with the power to put people under oath.

Ananich has also joined with U.S. Rep. Dan Kildee in asking for the federal government to step in and investigate as well. Along with look at what the roles played by the state and city in creating this disaster, the two legislators want to know what responsibility the U.S. EPA bears as well.

"It has become clear to me that unacceptable lead levels were a failure of government at every level," Kildee wrote last week in a letter to EPA administrator Gina McCarthy. "In order to restore confidence, and to ensure that these failures never happen again, I believe that the EPA needs to conduct a thorough investigation into the causes of the water problems in Flint."

Curt Guyette is an investigative reporter for the ACLU of Michigan. He can be reached at 313-578-6834 or cguyette@aclumich.org.

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http://www.detroitnews.com/story/news/politics/2015/10/28/agency-criticized-flint-water-drops-marketing-plan/74729624/

Associated Press 8:44 a.m. EDT October 28, 2015

Lansing — The Michigan Department of Environmental Quality, which has faced criticism for its handling of Flint's problems with lead in drinking water, has shelved a proposal to spend up to $100,000 to develop its brand.

The Flint Journal reported that a request for proposals was issued Oct. 23. The newspaper sought details on Tuesday morning and was told by the department that it had pulled the bid and put the proposal on hold.

The request for proposals came several days after DEQ Director Dan Wyant acknowledged federal rules weren't followed properly in Flint when the city last year made the switch to the Flint River for its water supply. Flint has reconnected to Detroit's water system in hopes of resolving the health emergency.

Department spokesman Brad Wurfel said the marketing strategy was discussed for more than a year and isn't related to recent developments in Flint. He said the DEQ recognizes "that with the broader budget conversations underway, this is not the time to prioritize this project."

He said the request for proposals aligns with "the department's goal of continually improving its relationships with stakeholders and delivering the best customer service we can"

Flint, a city of about 99,000 people, switched from Detroit's water system while under state emergency financial management. The Flint River was supposed to be an interim source until the city could join a new system getting water from Lake Huron that is scheduled to be completed next year. But residents complained about the taste, smell and appearance of water coming into their homes and businesses from the Flint River.

Officials long maintained that the water met safety standards. But corrosive water was drawing lead from aging pipes, and the state recently corroborated findings of elevated lead levels in children and disclosed higher lead amounts in three Flint schools. Republican Gov. Rick Snyder and the GOP-led Legislature earlier this month approved $9.3 million in aid to address the crisis.

The DEQ had posted a request for marketing strategy proposals online, seeking a contractor to develop a DEQ brand, a communication plan, branding techniques and training for state workers. The deadline was listed as Nov. 4 and the anticipated start date for the contract was Jan. 2.

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http://www.mlive.com/opinion/flint/index.ssf/2015/10/editorial_darnell_earley_water.html

MLive/Flint Journal opinion
on October 27, 2015 at 3:30 PM, updated October 27, 2015 at 3:55 PM

The following is an opinion by The Flint Journal Editorial Board.

FLINT, MI -- Protests by ex-Flint emergency manager Darnell Earley that local leaders are to blame for the Flint River water switch should fall on deaf ears.

Earley says that the decision to use Flint River water as the city's drinking source was a local decision made months before his 2013 appointment to run the city.

That claim, however, ignores the fact that Flint has been under the control of state-appointed financial managers since 2011.

In making the case for not holding himself accountable, Earley points to a March 2013 vote by the Flint City Council that approved a plan by Flint Mayor Dayne Walling to go with the KWA pipeline from Lake Huron for city drinking water.

But the subject of that vote was not for a switch to the Flint River as primary source of drinking water. And, perhaps more importantly, that vote — like every other vote and plan from the mayor over the past four years under state stewardship — held no real power.

At the end of the day, it was Earley and the other three emergency managers selected by Gov. Rick Snyder who had ultimate say in how the city got its drinking water. A June 2013 resolution signed by Emergency Manager Ed Kurtz is the only documentation we've seen that points to who made the decision to switch to the Flint River.

To that end, we would ask that Kurtz step forward and explain exactly what went into the decision to use Flint River water and who signed off on it.

He and Snyder owe that much to the citizens who lost their democratic voice when the state declared its takeover of Flint.

It's nonsense to shift the blame onto powerless local people.

The state's emergency manager law makes it clear: "Upon appointment, an emergency manager shall act for and in the place and stead of the governing body and the office of chief administrative officer of the local government."

The wording of the law goes on to say that elected leaders shall not exercise their powers of office unless the emergency manager says so, and adds: "The emergency manager shall have broad powers in receivership... to assure the fiscal accountability of the local government and the local government's capacity to provide or cause to be provided necessary governmental services essential to the public health, safety, and welfare."

Sara Wurfel, a spokeswoman for Snyder, said in a statement last week that the decision to use the Flint River "was pushed or supported by the city and community."

It's nonsense to shift the blame onto powerless local people. The city council voted in March to end use of the Flint River, but it was purely symbolic. The state-appointed emergency manager was still at the helm of the city and the council had no authority.

To put the responsibility for the change on the back of a community forcibly taken over by the state is yet another insult from Lansing.

At a time when Flint parents are left to wonder how much lead damage has been done to their children, it's outrageous for anyone to shirk responsibility in the decisions that were made.

It's time for the blame game to end.

The state and its emergency managers are ultimately responsible for the decision and they must own it.

View more Flint Journal editorials *here*.

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http://www.mlive.com/news/flint/index.ssf/2015/10/state_deq_seeks_marketing_stra.html

By Ron Fonger | rfonger1@mlive.com
FLINT, MI -- The state Department of Environmental Quality has shelved a proposal to spend up to $100,000 to develop its brand -- a marketing plan that was issued just a few days after the agency admitted it made mistakes in Flint's water crisis.

The Flint Journal-MLive requested information on the proposal on Tuesday morning, Oct. 27. Shortly after, a DEQ spokesman said the agency "pulled the bid this morning and put the proposal on hold."

"It'll remain a long-term consideration for us..." spokesman Brad Wurfel said.

The DEQ had posted a request for marketing strategy proposals online, seeking a contractor to develop a DEQ brand, a communication plan, branding techniques and training for state workers at a cost not to exceed $100,000.

"The goal of this project is to implement strategies that connect the vision and brand DEQ is trying to portray with the image that DEQ's stakeholders and staff perceive," reads the RFP.

The request for proposals was issued Oct. 23, four days after Dan Wyant, the DEQ's director, acknowledged his department had mistakenly followed the wrong federal regulations for 17 months in Flint as a lead-in-water health emergency developed.

Wyant has also told The Associated Press that the DEQ's response to criticism "was the wrong tone early in this conversation."

Wurfel said the development of a marketing strategy is something that's been discussed for more than a year at the department and is unrelated to recent developments with

Flint's water.

He said the request for proposals aligns with "the department's goal of continually improving its relationships with stakeholders and delivering the best customer service we can ..."

In pulling the proposal on Tuesday, the DEQ recognized "that with the broader budget conversations underway, this is not the time to prioritize this project," Wurfel said.

DEQ has increasingly been fielding questions about its role in protecting public health in Flint following the declaration of a public health emergency because of rising lead levels here.

Wyant has said DEQ employees should have required the city to treat Flint River water to make it less corrosive for the last 17 months but did not because they followed the wrong federal regulation.

Researchers have said the resulting corrosive water, combined with many lead service lines in the city, caused elevated lead levels in drinking water and in the blood of infants and young children since the city began using the river in April 2014.

Rising levels of lead in Flint water have attracted the attention of a national audience and fixing the problem is costing the state millions of dollars, including $6 million to reconnect Flint to Lake Huron water from the Detroit Water and Sewerage Department.

The deadline for DEQ marketing strategy proposals was listed as Nov. 4 and the anticipated start date for the contract was Jan. 2, 2016.

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http://www.washingtontimes.com/news/2015/oct/28/congressman-holding-telephone-town-hall-about-flin/

By - Associated Press - Wednesday, October 28, 2015

FLINT, Mich. (AP) - Congressman Dan Kildee is holding a telephone town hall for Flint residents featuring experts who can discuss the city's water problems.

The Michigan Democrat's call-in event takes place Wednesday night. He says it will offer an update about ongoing efforts to improve water quality. Experts, including those who helped draw attention to Flint's water problems, are expected to take questions from residents.

Kildee, who represents the Flint area, and state Senate Minority Leader Jim Ananich of Flint said last week they asked U.S. Environmental Protection Agency to answer questions after elevated blood-lead levels were found in children whose Flint homes received river water.

Flint switched from Detroit's water system last year in a cost-cutting move. The city has reconnected in hopes of resolving the health emergency.

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Online:

RSVP: http://www.tinyurl.com/FlintWater

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To: Poy, Thomas[poy.thomas@epa.gov]; Deltoral, Miguel[deltoral.miguel@epa.gov]
Cc: Nowotarski, Allison[nowotarski.allison@epa.gov]
From: Cannon, Phillippa
Sent: Wed 10/28/2015 7:11:29 PM
Subject: Is any of this advice we provided to Chicago residents about lead in drinking water relevant or helpful for Flint residents?

Hi Tom and Miguel, We are building a web page about the Flint drinking water situation and are trying to decide which information will be most helpful and relevant for Flint residents. This is some of the information we posted following the publication of the Chicago lead in drinking water study two years ago. Do you think any of it could be adapted for Flint residents? Do you think any of it would be helpful?

Advice to Chicago Residents

EPA and the Centers for Disease Control and Prevention believe there is no safe level of lead exposure. Lead is harmful to health, especially for children. While paint, dust, and soil are the most common sources of lead, drinking water can contribute 20 to 40 percent of an infant's lead exposure.

The goal is to remove as much lead from your drinking water as possible.

Chicagoans concerned about lead in their drinking water have a number of options to help reduce the amount of lead in their drinking water.

- **Have your water tested.** Many public water systems will test drinking water for residents upon request. Chicago residents can call 311 for information. You can also check the State of Illinois' drinking water website EXIT Disclaimer for a list of laboratories certified to analyze for lead.
- **Be aware of any work that could disturb your lead service line,** such as water main replacement, lead service line repair or replacement of part of the service line.
- **Run water before use if it has not been used for several hours**. The amount of time to run the water will depend on whether the home has a lead service line or not.
- **Use only cold water for drinking, cooking, and preparing baby formula.**
- **Purchase a water filter** that is certified to remove "total lead."
- On a regular basis **clean and remove any debris from faucet aerators** to clear out any particles of lead that may become trapped in the aerator.
- **Purchase lead-free faucets and plumbing components.**
- **Remove the entire lead service line.**

Flushing Instructions

Flushing *when the water has not been used for several hours*

Whether or not you have a lead service line, whenever the water has not been used in the household for several hours, you should run the water to flush the lead out. The more time water has been sitting in your home's pipes, the more lead it may contain. This is true even if you do not have a lead service line because plumbing fixtures like faucets and valves can contain small amounts of lead. However, the amount of time you should run the water to flush the lead out depends on whether you have a lead service line or not.

How long to run the water *if you do not have a lead service line*

Running the water for 30 to 45 seconds at the kitchen tap should clear the lead from your household plumbing to the kitchen tap. If you have old (corroded) galvanized iron pipe in your home, it may take up to 1 minute to fully flush the tap. Once you have done this, fill a container with water and store it in the refrigerator for drinking and cooking throughout the day.

How long to run the water *if you do have a lead service line*

Flushing times can vary based on the length of your lead service line and the plumbing configuration in your home. The length of lead service lines varies considerably. If your home is set back far from the street, a longer flushing time may be needed to lower lead levels, which may not be a practical solution.

The results of the lead sampling study conducted in Chicago in single-family homes with lead service lines showed that it could take 3 minutes of running the water to significantly reduce lead levels and it is not possible to clear all of the lead from the drinking water using flushing. There will always be some lead in the water. If you have old galvanized iron plumbing, lead can deposit in the corroded pipes and it can take up to 5 minutes of running of the water to significantly reduce lead levels.

In addition, flushing will vary with your household plumbing. Flushing one tap in the home in most cases does not clear lead from all of the household plumbing, because the water flows from the lead service line only to the faucets that are open, so running the water anywhere for 3-5 minutes will clear most of the lead from the lead service line, but depending on your household plumbing there may still be lead in the pipes and other taps in your home. You may need to flush the tap you are going to use water from for another 30-45 seconds to clear any remaining lead.

If you have a lead service line and you flush the tap you are going to use, such as the kitchen tap, for 3-5 minutes (or longer if instructed to do so by your water provider) this will clear most of the lead from the water.

To conserve water, instead of flushing the tap to be used for 3-5 minutes, take a shower or do a load of laundry. Either activity would clear most of the lead from the lead service line. However, taking a shower or doing a load of laundry will not flush the lead out of the entire the interior plumbing. Flushing the kitchen or bathroom tap for additional 30-45 seconds after showering or doing a load of laundry will clear the rest of the plumbing to the kitchen or bathroom tap.

Another alternative to conserve water is watering the garden for 3 minutes using the outside tap, which will clear the high lead from within the lead service line. This will not clear any of the lead from the internal plumbing, so right after watering the garden, flush the kitchen or bathroom tap for an additional 30-45 seconds.

After you have flushed your plumbing, filling up a container of water and storing it in the refrigerator for drinking and cooking throughout the day will reduce your lead exposure.

When is *flushing not recommended*

- If your lead service line is very long, flushing may not effectively lower lead levels.
- If your home has old (corroded) galvanized iron pipes, flushing may not be practical.

If the water flows slowly in your home and you have galvanized iron pipes, these pipes may be severely corroded inside. If you have a lead service line, the water may need to run for at least 5 minutes to significantly reduce lead levels, which may not be a practical solution for you, and you may wish to consider using a water filter that is certified to remove 'total lead'. Total lead includes lead that is dissolved in the water as well as lead particles that come loose from the plumbing.

Instructions for flushing out the particles and sediment *following a disturbance* to your lead service line.

If you have a lead service line and your lead service is disturbed, lead in your drinking water can increase to dangerous levels and particles containing high levels of lead can become trapped in your home plumbing.

Avoid bringing the lead-containing particles and sediment into your home or to the tap you drink from by following these instructions whenever your lead service is disturbed.

Find the closest available tap to where the water comes into the home that is not used for drinking water (such as an outside hose bib, laundry sink or bathtub) to flush the lead-containing particles out of the plumbing. Fully open the cold water tap and let the water run for at least five minutes to flush the lead-containing particles out of the plumbing so that the particles and sediment do not enter the rest of your household plumbing. The key is to pick the closest faucet not used for drinking that would result in the least amount of particles and sediment coming into the home plumbing.

Collecting Samples

If you are having your water tested for lead, it's important that you collect water samples in a specific way to ensure accurate results. The sampling recommendations and instructions depend on whether you have a lead service line or not. Testing the water for homes with lead service lines is more complex than for homes without a lead service line, so there are different sampling instructions for each situation.

Phillippa Cannon

Superfund Division

U.S. EPA Region 5

312-353-6218

To: Sygo, Jim (DEQ)[SygoJ@michigan.gov]
Cc: Robert Kaplan[Kaplan.Robert@epa.gov]
From: Henry, Timothy
Sent: Wed 10/28/2015 7:46:36 PM
Subject: RE: After Action - Flint Task Force Discussion of School Sampling Event - Please call Nonresponsive Conference Code
Nonresponsive Conference Code

Thanks Jim. Can you confirm whether at this point in time Flint is providing any orthophosphate addition for corrosion control beyond what is in the incoming water from the Great Lakes Water Authority (Detroit). The question came up in a recent call and we did not have a definitive answer.

Tim Henry
Deputy Director, Water Division
U.S. EPA (W-15J)
77 W. Jackson Blvd., Chicago, IL 60604-3590
Phone: 312.886.6107 Fax: 312.692.2578

From: Sygo, Jim (DEQ) [mailto:SygoJ@michigan.gov]
Sent: Wednesday, October 28, 2015 2:03 PM
To: Kaplan, Robert <kaplan.robert@epa.gov>; shekterl@michigan.gov; Krisztian, George (DEQ) <krisztiang@michigan.gov>; Busch, Stephen (DEQ) <BUSCHS@michigan.gov>; Prysby, Mike (DEQ) <PRYSBYM@michigan.gov>; Shaler, Karen (DEQ) <SHALERK@michigan.gov>; Henry, Timothy <henry.timothy@epa.gov>; Deltoral, Miguel <deltoral.miguel@epa.gov>; Poy, Thomas <poy.thomas@epa.gov>; Schock, Michael <Schock.Michael@epa.gov>; Kempic, Jeffrey <Kempic.Jeffrey@epa.gov>; Lytle, Darren <Lytle.Darren@epa.gov>
Cc: Shaler, Karen (DEQ) <SHALERK@michigan.gov>
Subject: RE: After Action - Flint Task Force Discussion of School Sampling Event - Please call
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Linda D. Dykema, Ph.D.

Environmental Public Health Director

Division of Environmental Health

Michigan Department of Health & Human Services

517.335.8566

dykemal@michigan.gov

Eden V. Wells, MD, MPH, FACPM

Chief Medical Executive

Michigan Department of Health and Human Services

201 Townsend Street, 5th Floor CVB

Lansing, MI 48913

Phone: 517-335-8011

wellse3@michigan.gov

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From: Kaplan, Robert [mailto:kaplan.robert@epa.gov]
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To: Kaplan, Robert; Sygo, Jim (DEQ); Shekter Smith, Liane (DEQ); Krisztian, George (DEQ); Busch, Stephen (DEQ); Prysby, Mike (DEQ); Shaler, Karen (DEQ); Henry, Timothy; Deltoral, Miguel; Poy, Thomas; Schock, Michael; Kempic, Jeffrey; Lytle, Darren
Cc: Cook, Pat (DEQ); Devereaux, Tracy Jo (DEQ)
Subject: FW: After Action - Flint Task Force Discussion of School Sampling Event - Please call Nonresponsive Conference Code **Nonresponsive Conference Code**
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Where: Region 5 - Robert Kaplan's Office

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Thomas Poy

Michael Schock

Jeffrey Kempic

Darren Lytle

Jim Sygo

George Krisztian

Liane Shekter Smith

Steve Busch

Mike Prysby

To: Henry, Timothy[henry.timothy@epa.gov]
Cc: Kaplan, Robert[kaplan.robert@epa.gov]
From: Sygo, Jim (DEQ)
Sent: Wed 10/28/2015 8:00:26 PM
Subject: RE: After Action - Flint Task Force Discussion of School Sampling Event - Please call Nonresponsive Conference Code **Nonresponsive Conference Code**

They are not. We expect to finish their permit today and the cover letter tomorrow so they can start construction of the additional feed later this week.

From: Henry, Timothy [mailto:henry.timothy@epa.gov]
Sent: Wednesday, October 28, 2015 3:47 PM
To: Sygo, Jim (DEQ)
Cc: Kaplan, Robert
Subject: RE: After Action - Flint Task Force Discussion of School Sampling Event - Please call Nonresponsive Conference Code **Nonresponsive Conference Code**

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Cc: Kaplan, Robert[kaplan.robert@epa.gov]
From: Henry, Timothy
Sent: Wed 10/28/2015 8:01:35 PM
Subject: Re: After Action - Flint Task Force Discussion of School Sampling Event - Please call Nonresponsive Conference Code **Nonresponsive Conference Code**

Thank you Jim

Tim Henry
Deputy Director, Water Division
US EPA Region V
312-886-6107 (office)
312-296-0690 (cell)

Sent from my iPhone

On Oct 28, 2015, at 15:00, Sygo, Jim (DEQ) <SygoJ@michigan.gov> wrote:

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> **Sent:** Wednesday, October 28, 2015 3:47 PM
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Mike Prysby

City of Flint
Technical Advisory Committee - Weekly Report

October 28th, 2015

Last meeting: 10-7-2015
Next meeting: 11-18-2015, 2:00 pm

I. Overview –

Please note that we have set the date for the next meeting at **Wednesday November 18th** 2:00 pm at Flint City Hall (there will be a call in number). The previous date proposed is Veterans Day and there were several conflicts.

II. New Items this week

Technical Advisory Committee Addition

I have added Professor Shawn McElmurry, An Associate Professor at Wayne State University in the Dept. of Civil and Environmental Engineering to the TAC team. Professor McElmurry contacted me a few weeks ago and visited the Water Plant and took several samples from the Flint River and the distribution system.

Professor McElmurry's team has submitted a proposal to the National Institute of Environmental Health Sciences (NIEHS) for funding to evaluate how changes in the drinking water system are impacting water quality. Their project has the following goals:

- Define exposure within Flint's drinking water system using a combined sampling and modeling approach.
- Quantify how the concentrations of DBPs and Pb change over time within the water distribution system.
- Apply a high-throughput bioassay to evaluate toxicity of complex chemical mixtures (focused on DBPs).
- Communicate results to water utility operators, government officials (city, state, and federal), public health agencies and residents using principles of risk communication through a variety of channels including social media.

Given their goals and their proximity to Flint, I believe that adding Professor McElmurry to the Technical Advisory Team will bring added evaluation and data to our cause.

III. Ongoing Items of concern or in process

A. Detroit Water

Water from Detroit is now flowing through all of the transition mains and should be present at most taps throughout the City. We are flushing hydrants in a manner to help circulate water within the system, individual usage patterns will dictate water being at every household and business. We will be testing hardness and phosphate levels over the next several days across the city to verify the presence of Detroit water.

B. Service Lines

I want to clarify where we are regarding the service line data. The 45,000+ cards are only one aspect of the information and represent the original data. As work has occurred over the last several decades, the Service Center has built a second, partial set of cards with updated information. Both sets of cards are kept as permanent records with accurate data. We also have maps which were last updated in 1984 with additional information. Finishing what the City started has involved stitching together three sets of data and then putting that into a database.

U of M Flint has taken ownership of the project and they have measured how much labor it will take to complete the task. Professor Kaufman is working pro bono but has just submitted a proposal to the City for the labor required in order to complete the task. The proposal will be turned around ASAP for them to complete the work.

C. Corrosion Control

On October 19th 2015 our engineering consultant submitted a design package to the DEQ with recommended phosphate dosing. After EPA review, the comments were just returned and today LAN is discussing with DEQ when to expect final approval and permitting. There are questions regarding the elevated dose of phosphate that we will bring to the next Technical Advisory meeting for discussion. The questions will are largely around the pros and cons of the specified dose level and the public communication and expectations that should accompany the implementation.

Issue	Description	Action Item	Owner
Corrosion Control	To help recoat the piping	The final design has been sent to MDEQ for peritting.	LAN
Surge Protection	Main breaks are down.	Leak detection will continue for the next few months.	City Staff
KWA - Prep	Design and installation of final improvements needed	Internal November 5th meeting scheduled to discuss specifics. See item IV.	LAN/City
KWA - Transfer Station	Buffer for water supply from KWA	Internal November 5th meeting scheduled to discuss specifics. See item IV.	LAN
Hydraulic Model	Filling with data	Need to verify broken valve locations for model to be accurate.	LAN/City
SCADA Upgrades	Used to develop automation within the system.	First phase went in in FY15 second and final phase due to be installed prioir to KWA's arrival.	City Staff

IV. Needs for treating and using water from KWA

The City is meeting with the engineering consultants on Thursday November 5th in order to build a project timeline of all items needed to be prepared for water delivery from KWA. The following items will be discussed:

A. Design and construction of transfer station to Dort Reservoir (while in use).
  - Needed to buffer the volume of water that KWA is capable of delivering prior to their reservoir tank being activated.

B. KWA access to the plant.
  - The current design calls for use of the pipe that was empty and is now in use. An alternate plan needs to be discussed and vetted.

C. Alum feed system
  - Needed for coagulant change to raw water and to reduce chloride.

V. Testing Data

We will continue to update this data table weekly, if there is something that is missing or additional data that is requested please let me know and we will attempt to add it to the table.

Date	Flow (MGD)	pH (S.U.)	Total Hardness (mg/L)	Total Alkalinity (mg/L)	Non-carbonate Hardness (mg/L)	Chloride (mg/L)	Calcium (mg/L)	Magnesium (mg/L)	Total Phosphate (mg/L)
Range GLWA	12 - 19	7.3 - 7.6	98 - 102	70 - 76	26 - 32	11 - 13	26 - 32	3.9 - 6.3	1.0 - 1.2
10/26/2015	12	7.36	102	74	28	11	30.5	6.3	1.14

To: Schock, Michael[Schock.Michael@epa.gov]; Henry, Timothy[henry.timothy@epa.gov]
Cc: Kaplan, Robert[kaplan.robert@epa.gov]; Lytle, Darren[Lytle.Darren@epa.gov]; Deltoral, Miguel[deltoral.miguel@epa.gov]; Poy, Thomas[poy.thomas@epa.gov]
From: Kempic, Jeffrey
Sent: Wed 10/28/2015 8:21:07 PM
Subject: RE: TAC Team Update 10_28_15

Tim,

In addition to WQTC being that week, it is also the same week as the National Drinking Water Advisory Council meeting, which is why I won't be at WQTC this year. The NDWAC will be deliberating Tuesday afternoon and all day Wednesday on the NDWAC Working Group report so that they can provide final recommendations to EPA on revisions to the Lead and Copper Rule.

Jeff

From: Schock, Michael
Sent: Wednesday, October 28, 2015 4:08 PM
To: Henry, Timothy <henry.timothy@epa.gov>
Cc: Kaplan, Robert <kaplan.robert@epa.gov>; Kempic, Jeffrey <Kempic.Jeffrey@epa.gov>; Lytle, Darren <Lytle.Darren@epa.gov>; Deltoral, Miguel <deltoral.miguel@epa.gov>; Poy, Thomas <poy.thomas@epa.gov>
Subject: FW: TAC Team Update 10_28_15

Tim;

Thanks for clearly representing our concerns about the certified labs today. I am still concerned that the requirement will inhibit other studies that need to be done—the pilot testing and assessment kinds of investigations that are engineering/corrosion control "best practices," not LCR requirements. Plus, testing diagnostic testing protocols to determine best what does and doesn't work, such as techniques for sampling to detect LSLs, and sampling programs for buildings that better locate contamination or reflect more on resident exposure. It still sounded to me that they wanted direct control over all Pb results, regardless of the study origin. Maybe we in EPA should talk about this some more?

The other thing which really annoys me is AGAIN scheduling the Technical Advisory committee meeting with zero consultation with the technical "experts." I had to miss the last one, and Darren, myself, and Marc Edwards, all are going to be at WQTC. Jeff usually goes. That conference is the most important technical drinking water conference of the year, and the dates are well known. I might even add, shouldn't some of the others be going there, too, given the many treatment and sampling issues that have become so clear in the last few months?

--Mike

From: Howard Croft [mailto:hcroft@cityofflint.com]
Sent: Wednesday, October 28, 2015 3:28 PM
To: Amy Hovey <Amy.Hovey@mail.house.gov>; Andy Leavitt <aleavitt@senatedems.org>; Anthony Chubb <achubb@cityofflint.com>; Brent Wright <bwright@cityofflint.com>; Lytle, Darren <Lytle.Darren@epa.gov>; Dayne Walling <dwalling@cityofflint.com>; donna. cole <donna.cole@genesys.org>; dykemal <dykemal@mich.gov>; Eden Wells (DHHS) <wellse3@michigan.gov>; edwardsm <edwardsm@vt.edu>; George Krisztian (DEQ) <krisztiang@michigan.gov>; Personal Address / Ex. 6; Howard Croft <hcroft@cityofflint.com>; James Henry <jhenry@gchd.us>; Jamie Gaskin <jgaskin@unitedwaygenesee.org>; Jason Lorenz <jlorenz@cityofflint.com>; Personal Address / Ex. 6 Personal Address / Ex. 6; JoAnne Herman <jherman@genesys.org>; John O'Brien <jfobrien@gcdcwws.com>; Kevin J. Keane <KEVIN.KEANE@cmsenergy.com>; Kirk Smith <ksmith@flint.org>; larry.koehler@mcc.edu; Personal Address / Ex. 6; Lawrence Reynolds <LawrenceR@mottchc.org>; Lawrence Reynolds <reynolds@mottchc.org>; Michael Glasgow <mglasgow@cityofflint.com>; Schock, Michael <Schock.Michael@epa.gov>; Wright, Michael <Wright.Michael@epa.gov>; Mike Lane <mjlane@umflint.edu>; Mike Prysby (DEQ) <prysbym@michigan.gov>; MVALACAK@gchd.us; Natasha Henderson <nhenderson@cityofflint.com>; Norb Birchmeier <nbirchm1@hurleymc.com>; Pete Levine <plevine@gcms.org>; Robert Bincsik <rbincsik@cityofflint.com>; rosejo@msu.edu; Russell Hudson <Russell.Hudson@mclaren.org>; Samir Matta <SFMatta@lan-inc.com>; Sean Kammer <skammer@cityofflint.com>; Stephen Busch (DEQ) <BUSCHS@michigan.gov>; thompsons2@michigan.gov; Warren Green <jwgreen@lan-inc.com>; Shawn McElmurry <s.mcelmurry@wayne.edu>
Subject: TAC Team Update 10_28_15

Team,

The next Technical Advisory Meeting is set for **Wednesday November 18th 2:00 pm** at Flint City Hall. The previous date being considered was Veterans Day and we encountered several conflicts. There will be a call in number available and I will send an agenda prior to the meeting.

There is a significant amount of new information included in this weekly report and I expect that trend to continue as we move forward. Several of the items mentioned such as the specific dosing level of phosphate will become targets of discussion at this next meeting in order to thoroughly evaluate the pros and cons and to help with public information.

The testing map continues to have information added as it becomes available and on the weekly report we have inserted a data table that will be updated regularly as well. Please let me know if anyone is interested in additional data being reported.

Please be prepared to give input on the potential of a December meeting which would have to be December 9th or December 16th.

Thank you,

--

Howard Croft

Public Works Director

City of Flint

1101 S. Saginaw Street

Flint, MI 48502

PH# 810.766.7135 Ext.2043

hcroft@cityofflint.com

To: Robert Kaplan[Kaplan.Robert@epa.gov]; Fortin, Denise[Fortin.Denise@epa.gov]
From: Henry, Timothy
Sent: Wed 10/28/2015 8:39:53 PM
Subject: FW: After Action - Flint Task Force Discussion of School Sampling Event - Please call Nonresponsive Conference Code
Nonresponsive Conference Code

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U.S. EPA (W-15J)
77 W. Jackson Blvd., Chicago, IL 60604-3590
Phone: 312.886.6107 Fax: 312.692.2578

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Subject: FW: After Action - Flint Task Force Discussion of School Sampling Event - Please call Nonresponsive Conference Code **Nonresponsive Conference Code**
When: Wednesday, October 28, 2015 1:30 PM-2:30 PM (UTC-05:00) Eastern Time (US & Canada).
Where: Region 5 - Robert Kaplan's Office

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Attendees:

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Timothy Henry

Miguel Deltoral

Thomas Poy

Michael Schock

Jeffrey Kempic

Darren Lytle

Jim Sygo

George Krisztian

Liane Shekter Smith

Steve Busch

Mike Prysby

To: Cannon, Phillippa[Cannon.Phillippa@epa.gov]
Cc: Deltoral, Miguel[deltoral.miguel@epa.gov]
From: Poy, Thomas
Sent: Wed 10/28/2015 9:05:21 PM
Subject: RE: Is any of this advice we provided to Chicago residents about lead in drinking water relevant or helpful for Flint residents?

Hi Phillippa: The Chicago instructions are ok for Flint with the modifications in red below.

Tom

Tom Poy

Chief, Ground Water and Drinking Water Branch

USEPA - Region 5

(312) 886-5991

From: Cannon, Phillippa
Sent: Wednesday, October 28, 2015 2:11 PM
To: Poy, Thomas <poy.thomas@epa.gov>; Deltoral, Miguel <deltoral.miguel@epa.gov>
Cc: Nowotarski, Allison <nowotarski.allison@epa.gov>
Subject: Is any of this advice we provided to Chicago residents about lead in drinking water relevant or helpful for Flint residents?

Hi Tom and Miguel, We are building a web page about the Flint drinking water situation and are trying to decide which information will be most helpful and relevant for Flint residents. This is some of the information we posted following the publication of the Chicago lead in drinking water study two years ago. Do you think any of it could be adapted for Flint residents? Do you think any of it would be helpful?

Advice to Chicago Residents

EPA and the Centers for Disease Control and Prevention believe there is no safe level of lead exposure. Lead is harmful to health, especially for children. While paint, dust, and soil are the most common sources of lead, drinking water can contribute 20 to 40 percent of an infant's lead exposure.

The goal is to remove as much lead from your drinking water as possible.

Chicagoans concerned about lead in their drinking water have a number of options to help reduce the amount of lead in their drinking water.

- **Have your water tested.** Many public water systems will test drinking water for residents upon request. Chicago residents can call 311 for information. You can also check the State of Illinois' drinking water website EXIT Disclaimer for a list of laboratories certified to analyze for lead.
- **Be aware of any work that could disturb your lead service line and flush your water per the flushing direction below,** such as water main replacement, lead service line repair or replacement of part of the service line.
- **Run water before use if it has not been used for several hours**. The amount of time to run the water will depend on whether the home has a lead service line or not.
- **Use only cold water for drinking, cooking, and preparing baby formula.**
- **Purchase a water filter** that is certified to remove "total lead."
- On a regular basis **clean and remove any debris from faucet aerators** to clear out any particles of lead that may become trapped in the aerator.
- **Purchase lead-free faucets and plumbing components.**
- **Remove the entire lead service line.**

Flushing Instructions

Flushing *when the water has not been used for several hours*

Whether or not you have a lead service line, whenever the water has not been used in the household for several hours, you should run the water to flush the lead out. The more time water has been sitting in your home's pipes, the more lead it may contain. This is true even if you do not have a lead service line because plumbing fixtures like faucets and valves can contain small amounts of lead. However, the amount of time you should run the water to flush the lead out depends on whether you have a lead service line or not.

How long to run the water *if you do not have a lead service line*

Running the water for 30 to 45 seconds at the kitchen tap should clear the lead from your household plumbing to the kitchen tap. If you have old (corroded) galvanized iron pipe in your home, it may take up to 1 minute to fully flush the tap. Once you have done this, fill a container with water and store it in the refrigerator for drinking and cooking throughout the day.

How long to run the water *if you do have a lead service line*

Flushing times can vary based on the length of your lead service line and the plumbing configuration in your home. The length of lead service lines varies considerably. If your home is set back far from the street, a longer flushing time may be needed to lower lead levels, which may not be a practical solution.

~~The results of the lead sampling study conducted in Chicago in~~ single-family homes with lead service lines showed that it could take ~~3~~ 5 minutes of running the water to significantly reduce lead levels and it is not possible to clear all of the lead from the drinking water using flushing. There will always be some lead in the water. If you have old galvanized iron plumbing, lead can deposit in the corroded pipes and it can take up to 5 minutes of running of the water to significantly reduce lead levels.

In addition, flushing will vary with your household plumbing. Flushing one tap in the home in most cases does not clear lead from all of the household plumbing, because the water flows from the lead service line only to the faucets that are open, so running the water anywhere for 3-5 minutes will clear most of the lead from the lead service line, but depending on your household plumbing there may still be lead in the pipes and other taps in your home. You may need to flush the tap you are going to use water from for another 30-45 seconds to clear any remaining lead.

If you have a lead service line and you flush the tap you are going to use, such as the kitchen tap, for ~~3-~~5 minutes (or longer if instructed to do so by your water provider) this will clear most of the lead from the water.

To conserve water, instead of flushing the tap to be used for 3-5 minutes, take a shower or do a load of laundry. Either activity would clear most of the lead from the lead service line. However, taking a shower or doing a load of laundry will not flush the lead out of the entire the interior plumbing. Flushing the kitchen or bathroom tap for additional 30-45 seconds after showering or doing a load of laundry will clear the rest of the plumbing to the kitchen or bathroom tap.

Another alternative to conserve water is watering the garden for 3 minutes using the outside tap, which will clear the high lead from within the lead service line. This will not clear any of the lead from the internal plumbing, so right after watering the garden, flush the kitchen or bathroom tap for an additional 30-45 seconds.

After you have flushed your plumbing, filling up a container of water and storing it in the refrigerator for drinking and cooking throughout the day will reduce your lead exposure.

When is *flushing not recommended*

- If your lead service line is very long, flushing may not effectively lower lead levels.
- If your home has old (corroded) galvanized iron pipes, flushing may not be practical.

If the water flows slowly in your home and you have galvanized iron pipes, these pipes may be severely corroded inside. If you have a lead service line, the water may need to run for at least 5 minutes to significantly reduce lead levels, which may not be a practical solution for you, and you may wish to consider using a water filter that is certified to remove 'total lead'. Total lead includes lead that is dissolved in the water as well as lead particles that come loose from the plumbing.

Instructions for flushing out the particles and sediment *following a disturbance* to your lead service line.

If you have a lead service line and your lead service is disturbed, lead in your drinking water can increase to dangerous levels and particles containing high levels of lead can become trapped in your home plumbing.

Avoid bringing the lead-containing particles and sediment into your home or to the tap you drink from by following these instructions whenever your lead service is disturbed.

Find the closest available tap to where the water comes into the home that is not used for drinking water (such as an outside hose bib, laundry sink or bathtub) to flush the lead-containing particles out of the plumbing. Fully open the cold water tap and let the water run for at least five minutes to flush the lead-containing particles out of the plumbing so that the particles and sediment do not enter the rest of your household plumbing. The key is to pick the closest faucet not used for drinking that would result in the least amount of particles and sediment coming into the home plumbing.

Collecting Samples

If you are having your water tested for lead, it's important that you collect water samples in a specific way to ensure accurate results. The sampling recommendations and instructions depend on whether you have a lead service line or not. Testing the water for homes with lead service lines is more complex than for homes without a lead service line, so there are different sampling instructions for each situation.

Phillippa Cannon

Superfund Division

U.S. EPA Region 5

312-353-6218

To: Henry, Timothy[henry.timothy@epa.gov]; Fortin, Denise[Fortin.Denise@epa.gov]
From: Kaplan, Robert
Sent: Wed 10/28/2015 9:16:00 PM
Subject: RE: After Action - Flint Task Force Discussion of School Sampling Event - Please call Nonresponsive Conference Code
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How about this, Tim?

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Robert Kaplan

Deputy Regional Administrator

U.S. EPA Region 5

Phone: (312) 886-1499

Cell: (312) 515-9827

Fax: (312) 692-2075

From: Henry, Timothy
Sent: Wednesday, October 28, 2015 3:40 PM
To: Kaplan, Robert <kaplan.robert@epa.gov>; Fortin, Denise <Fortin.Denise@epa.gov>
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U.S. EPA (W-15J)
77 W. Jackson Blvd., Chicago, IL 60604-3590
Phone: 312.886.6107 Fax: 312.692.2578

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wellse3@michigan.gov

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Liane Shekter Smith

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To: Kaplan, Robert[kaplan.robert@epa.gov]
From: Henry, Timothy
Sent: Wed 10/28/2015 9:18:05 PM
Subject: RE: After Action - Flint Task Force Discussion of School Sampling Event - Please call Nonresponsive Conference Code
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Looks good

Tim Henry
Deputy Director, Water Division
U.S. EPA (W-15J)
77 W. Jackson Blvd., Chicago, IL 60604-3590
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Karen Shaler

-----Original Appointment-----
From: Kaplan, Robert [mailto:kaplan.robert@epa.gov]
Sent: Friday, October 23, 2015 1:58 PM
To: Kaplan, Robert; Sygo, Jim (DEQ); Shaler, Karen (DEQ); Henry, Timothy; Deltoral, Miguel; Poy, Thomas; Schock, Michael; Kempic, Jeffrey; Lytle, Darren
Subject: After Action - Flint Task Force Discussion of School Sampling Event - Please call Nonresponsive Conference Code Nonresponsive Conference Code
When: Wednesday, October 28, 2015 12:30 PM-1:30 PM (UTC-06:00) Central Time (US & Canada).
Where: Region 5 - Robert Kaplan's Office

Attendees:

Robert Kaplan

Timothy Henry

Miguel Deltoral

Thomas Poy

Michael Schock

Jeffrey Kempic

Darren Lytle

Jim Sygo

George Krisztian

Liane Shekter Smith

Steve Busch

Mike Prysby

To: Kaplan, Robert[kaplan.robert@epa.gov]
From: Henry, Timothy
Sent: Wed 10/28/2015 9:24:48 PM
Subject: RE: TAC Team Update 10_28_15

Bob – I was going to send the following to the task force members, but thought I had better check with you before I strayed too far out of my lane.

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Tim Henry
Deputy Director, Water Division
U.S. EPA (W-15J)
77 W. Jackson Blvd., Chicago, IL 60604-3590
Phone: 312.886.6107 Fax: 312.692.2578

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Thanks,

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Deputy Regional Administrator

U.S. EPA Region 5

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Howard Croft

Public Works Director

City of Flint

1101 S. Saginaw Street

Flint, MI 48502

PH# 810.766.7135 Ext.2043

hcroft@cityofflint.com

To: Henry, Timothy[henry.timothy@epa.gov]
From: Kaplan, Robert
Sent: Wed 10/28/2015 9:26:52 PM
Subject: RE: TAC Team Update 10_28_15

Stray all you want. Please sent this.

Robert Kaplan

Deputy Regional Administrator

U.S. EPA Region 5

Phone: (312) 886-1499

Cell: (312) 515-9827

Fax: (312) 692-2075

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To: Kaplan, Robert <kaplan.robert@epa.gov>
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From: Deltoral, Miguel
Sent: Wed 10/28/2015 9:45:02 PM
Subject: Re: content for webpage - Flint -- jpegs + needed asap

Hi Anne,

Sorry for not responding. There's a lot going on and nowhere near enough time to do it. We are doing the best we can and trying to focus on the most important things we can do to help the citizens in Flint. Tom and I are on the EPA task force, working with DEQ on the school sampling as well as ORD/DEQ on the OCCT framework. This takes a lot of time and discussion. We are also coordinating with ORC on the Flint timeline and responsive documents to information requests.

I think the most important thing right now for the website would be to provide information for residents in Flint on what we have found and how they can take interim measures to protect their families. That is very important and I will take a look at that first thing tomorrow morning, but I am respectfully requesting that we put off the videos for now so that we have adequate time to plan, discuss and work on matters that are directly related to fixing the problems in Flint.

Respectfully,

Miguel A. Del Toral
Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

From: Rowan, Anne
Sent: Wednesday, October 28, 2015 02:34 PM
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Cc: Cannon, Phillippa; Nowotarski, Allison; Cassell, Peter; Ostermeier, Jennifer; Reshkin, Karen; Fortin,

Denise; Deamer, Eileen
Subject: content for webpage - Flint -- jpegs + needed asap

Hi all, as I think most of you know, my office is mocking up a webpage on Flint drinking water issues. This needs to be ready for review by tomorrow --COB Thursday, Oct. 29. I know all the WD folks are busy but we still need you to provide us with the final report (currently undergoing ORC review) and jpegs for the pictures from that final report, help with infographics and interviewees for the 1 minute “in the moment videos”.

Thanks very much. We’ll try to take up as little of your time as possible.

Anne Rowan, Chief

Public Affairs Section

Office of External Communications

U.S. EPA Region 5, Chicago

rowan.anne@epa.gov

312-353-9391

To: Kempic, Jeffrey[Kempic.Jeffrey@epa.gov]
Cc: Schock, Michael[Schock.Michael@epa.gov]; Henry, Timothy[henry.timothy@epa.gov]; Kaplan, Robert[kaplan.robert@epa.gov]; Lytle, Darren[Lytle.Darren@epa.gov]; Deltoral, Miguel[deltoral.miguel@epa.gov]
From: Poy, Thomas
Sent: Wed 10/28/2015 9:45:40 PM
Subject: Re: TAC Team Update 10_28_15

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Chief, Ground and Drinking Water Branch
USEPA - Region 5
(312) 886-5991

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Please be prepared to give input on the potential of a December meeting which would have to be December 9th or December 16th.

Thank you,

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Howard Croft

Public Works Director

City of Flint

1101 S. Saginaw Street

Flint, MI 48502

PH# 810.766.7135 Ext.2043

hcroft@cityofflint.com

To: Bair, Rita[bair.rita@epa.gov]; Damato, Nicholas[damato.nicholas@epa.gov]; Porter, Andrea[porter.andrea@epa.gov]; Shoven, Heather[shoven.heather@epa.gov]; Crooks, Jennifer[crooks.jennifer@epa.gov]
From: Deltoral, Miguel
Sent: Wed 10/28/2015 9:47:17 PM
Subject: Fw: content for webpage - Flint -- jpegs + needed asap

Sorry, I should've copied you folks on this...

Miguel A. Del Toral
Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

From: Deltoral, Miguel
Sent: Wednesday, October 28, 2015 04:45 PM
To: Rowan, Anne; Hyde, Tinka; Henry, Timothy; Poy, Thomas
Cc: Cannon, Phillippa; Nowotarski, Allison; Cassell, Peter; Ostermeier, Jennifer; Reshkin, Karen; Fortin, Denise; Deamer, Eileen; Glowacki, Joanna
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Hi all, as I think most of you know, my office is mocking up a webpage on Flint drinking water issues. This needs to be ready for review by tomorrow --COB Thursday, Oct. 29. I know all the WD folks are busy but we still need you to provide us with the final report (currently undergoing ORC review) and jpegs for the pictures from that final report, help with infographics and interviewees for the 1 minute “in the moment videos”.

Thanks very much. We’ll try to take up as little of your time as possible.

Anne Rowan, Chief

Public Affairs Section

Office of External Communications

U.S. EPA Region 5, Chicago

rowan.anne@epa.gov

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From: Lytle, Darren
Sent: Wed 10/28/2015 9:54:09 PM
Subject: Re: TAC Team Update 10_28_15

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From: Kaplan, Robert
Sent: Wed 10/28/2015 10:00:12 PM
Subject: RE: TAC Team Update 10_28_15

That sounds like a great idea. Thanks for letting me know. Moving the TAC to Monday would be ideal. -- Bob

Robert Kaplan

Deputy Regional Administrator

U.S. EPA Region 5

Phone: (312) 886-1499

Cell: (312) 515-9827

Fax: (312) 692-2075

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From: Fortin, Denise
Sent: Wed 10/28/2015 10:07:20 PM
Subject: FW: Lead corrosion control question

FYI

Denise Fortin

Congressional Liaison

Office of Regional Administrator

U.S. Environmental Protection Agency

312-886-9859

From: Fortin, Denise
Sent: Wednesday, October 28, 2015 5:06 PM
To: 'Dickinson, Jordan' <Jordan.Dickinson@mail.house.gov>; Amy Hovey (amy.hovey@mail.house.gov) <amy.hovey@mail.house.gov>
Cc: Deamer, Eileen <deamer.eileen@epa.gov>; Davis, CatherineM <Davis.CatherineM@epa.gov>
Subject: Lead corrosion control question

Jordan & Amy:

To follow up on your question from today's call, here's what I've learned:

Flint recently switched back to receiving its water from the Great Lakes Water Authority (Detroit) -- as it had been doing prior to the shift to the Flint River. The Detroit water is treated with orthophosphate for lead corrosion control. MDEQ, in consultation with the EPA Task Force, is currently working on a plan for supplemental treatment to optimize the corrosion control dosage and monitoring for Flint.

Please let us know if you have additional questions.

Thanks,

Denise

Denise Fortin

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From: Rowan, Anne
Sent: Wed 10/28/2015 10:19:57 PM
Subject: RE: content for webpage - Flint -- jpegs + needed asap

Thanks, and I DO understand there's quite a bit to do. I'm fairly sure we can accomplish this pretty quickly tomorrow. We just did a trial run with Tinka today and it was fairly easy.

We'd like to have 3 slots

- Tim or Bob explaining the purpose of the task force
- Tom P explaining corrosion control
- Miguel discussing his work with a Flint resident to determine lead source

None of these slots will be more than 60 seconds. Phillippa and Pete help you walk you through the process tomorrow. It should take less than a half hour from start to finish.

So think about what points you want to make and we'll revisit tomorrow.

Thanks, again. We know there are many demands on your time.

Anne Rowan, Chief

Public Affairs Section

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U.S. EPA Region 5, Chicago

rowan.anne@epa.gov

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Cc: Cannon, Phillippa; Nowotarski, Allison; Cassell, Peter; Ostermeier, Jennifer; Reshkin, Karen; Fortin, Denise; Deamer, Eileen
Subject: content for webpage - Flint -- jpegs + needed asap

Hi all, as I think most of you know, my office is mocking up a webpage on Flint drinking water issues. This needs to be ready for review by tomorrow --COB Thursday, Oct. 29. I know all the WD folks are busy but we still need you to provide us with the final report (currently undergoing ORC review) and jpegs for the pictures from that final report, help with infographics and interviewees for the 1 minute "in the moment videos".

Thanks very much. We'll try to take up as little of your time as possible.

Anne Rowan, Chief

Public Affairs Section

Office of External Communications

U.S. EPA Region 5, Chicago

rowan.anne@epa.gov

312-353-9391

To: Deltoral, Miguel[deltoral.miguel@epa.gov]
Cc: Rowan, Anne[rowan.anne@epa.gov]; Hyde, Tinka[hyde.tinka@epa.gov]; Henry, Timothy[henry.timothy@epa.gov]; Poy, Thomas[poy.thomas@epa.gov]; Cannon, Phillippa[Cannon.Phillippa@epa.gov]; Nowotarski, Allison[nowotarski.allison@epa.gov]; Ostermeier, Jennifer[Ostermeier.Jennifer@epa.gov]; Reshkin, Karen[Reshkin.Karen@epa.gov]; Fortin, Denise[Fortin.Denise@epa.gov]; Deamer, Eileen[deamer.eileen@epa.gov]; Glowacki, Joanna[glowacki.joanna@epa.gov]
From: Cassell, Peter
Sent: Thur 10/29/2015 1:39:33 PM
Subject: Re: content for webpage - Flint -- jpegs + needed asap

The videos are solely to enhance the web content and user experience on the website we will be standing up. This website will be a key gateway to information for flint residents about what to do, what EPA is doing and what information they need to protect their health. I completely understand your concerns. Tinka's video test yesterday took about 10 to 15 min just given practice and each take. So it can be as short of a time grab as that. Let me know if you have time. If not I understand.

Sent from my iPhone

On Oct 28, 2015, at 4:45 PM, Deltoral, Miguel <deltoral.miguel@epa.gov> wrote:

> Hi Anne,
>
> Sorry for not responding. There’s a lot going on and nowhere near enough time to do it. We are doing the best we can and trying to focus on the most important things we can do to help the citizens in Flint. Tom and I are on the EPA task force, working with DEQ on the school sampling as well as ORD/DEQ on the OCCT framework. This takes a lot of time and discussion. We are also coordinating with ORC on the Flint timeline and responsive documents to information requests.
>
> I think the most important thing right now for the website would be to provide information for residents in Flint on what we have found and how they can take interim measures to protect their families. That is very important and I will take a look at that first thing tomorrow morning, but I am respectfully requesting that we put off the videos for now so that we have adequate time to plan, discuss and work on matters that are directly related to fixing the problems in Flint.
>
> Respectfully,
>
> Miguel A. Del Toral

Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

From: Rowan, Anne
Sent: Wednesday, October 28, 2015 02:34 PM
To: Hyde, Tinka; Henry, Timothy; Poy, Thomas; Deltoral, Miguel
Cc: Cannon, Phillippa; Nowotarski, Allison; Cassell, Peter; Ostermeier, Jennifer; Reshkin, Karen; Fortin, Denise; Deamer, Eileen
Subject: content for webpage - Flint -- jpegs + needed asap

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Thanks very much. We'll try to take up as little of your time as possible.

Anne Rowan, Chief

Public Affairs Section

Office of External Communications

U.S. EPA Region 5, Chicago

rowan.anne@epa.gov

312-353-9391

To: Henry, Timothy[henry.timothy@epa.gov]; Deltoral, Miguel[deltoral.miguel@epa.gov]; Kaplan, Robert[kaplan.robert@epa.gov]; Kempic, Jeffrey[Kempic.Jeffrey@epa.gov]; Poy, Thomas[poy.thomas@epa.gov]; Schock, Michael[Schock.Michael@epa.gov]
From: Lytle, Darren
Sent: Thur 10/29/2015 3:21:10 PM
Subject: RE: TAC Team Update 10_28_15

When driving to Flint last, I made notes on hotels figuring I would be back. I found a Holiday Inn express about 10 minutes south of downtown Flint off of RT 75:

http://www.ihg.com/holidayinnexpress/hotels/us/en/grand-blanc/fntgb/hoteldetail

Mike and I booked a room for the evening of Nov. 9.

Darren

Darren A. Lytle, Ph.D., P.E.

Branch Chief (Acting)

U.S. Environmental Protection Agency

26 West Martin Luther King Dr.

Cincinnati, Ohio 45268

Phone: (513) 569-7432

Fax: (513) 487-2543

email: lytle.darren@epa.gov

From: Henry, Timothy

Sent: Wednesday, October 28, 2015 5:30 PM
To: Deltoral, Miguel <deltoral.miguel@epa.gov>; Kaplan, Robert <kaplan.robert@epa.gov>; Kempic, Jeffrey <Kempic.Jeffrey@epa.gov>; Lytle, Darren <Lytle.Darren@epa.gov>; Poy, Thomas <poy.thomas@epa.gov>; Schock, Michael <Schock.Michael@epa.gov>
Subject: RE: TAC Team Update 10_28_15

Hi all –

Just a quick note regarding the meeting in Flint. We are looking at hotel accommodations for the evening of the 9th and will let you know what looks to be available. We would like to be able to have a short face-to-face meeting before the official meeting on the 10th and it may be that the only available time would be the evening of the 9th at the hotel or maybe over dinner…we will see if that works out.

Also, it would be helpful to get your thoughts about what we want to make sure we cover or see or do while we are in Flint beyond the 10:00 meeting. For example, do we want to get to the treatment plant to see its condition and where they will be installing equipment for orthophosphate addition? Please let us know and we will see what we can arrange.

Tim Henry
Deputy Director, Water Division
U.S. EPA (W-15J)
77 W. Jackson Blvd., Chicago, IL 60604-3590
Phone: 312.886.6107 Fax: 312.692.2578

From: Kaplan, Robert
Sent: Wednesday, October 28, 2015 3:57 PM
To: Kempic, Jeffrey <Kempic.Jeffrey@epa.gov>; Schock, Michael <Schock.Michael@epa.gov>; Henry, Timothy <henry.timothy@epa.gov>
Cc: Lytle, Darren <Lytle.Darren@epa.gov>; Deltoral, Miguel <deltoral.miguel@epa.gov>; Poy, Thomas <poy.thomas@epa.gov>
Subject: RE: TAC Team Update 10_28_15

Task Force Members –

Thanks for a very good call today with MDEQ. Ideally, we would have had a pre-call to discuss and present our concerns. Thanks for your flexibility in handling our concerns about laboratory certification at the outset of the call.

Also, since we are not in the same room, it's sometimes hard to know when and if we have heard all voices. Please know that I never mean to cut short any discussion – if you feel we need to continue on a subject, or if we have not fully considered something, I encourage you to speak up. Please feel free, and know that my attempts to find agreement and move to the next subject should never be construed as an attempt to limit full and robust discussion.

We should all plan to be in Flint on the morning of Nov. 10. Please start making your travel arrangements now. Details to follow.

Thanks,

Bob

Robert Kaplan

Deputy Regional Administrator

U.S. EPA Region 5

Phone: (312) 886-1499

Cell: (312) 515-9827

Fax: (312) 692-2075

From: Kempic, Jeffrey
Sent: Wednesday, October 28, 2015 3:21 PM
To: Schock, Michael <Schock.Michael@epa.gov>; Henry, Timothy <henry.timothy@epa.gov>
Cc: Kaplan, Robert <kaplan.robert@epa.gov>; Lytle, Darren <Lytle.Darren@epa.gov>; Deltoral, Miguel <deltoral.miguel@epa.gov>; Poy, Thomas <poy.thomas@epa.gov>
Subject: RE: TAC Team Update 10_28_15

Tim,

In addition to WQTC being that week, it is also the same week as the National Drinking Water Advisory Council meeting, which is why I won't be at WQTC this year. The NDWAC will be deliberating Tuesday afternoon and all day Wednesday on the NDWAC Working Group report so that they can provide final recommendations to EPA on revisions to the Lead and Copper Rule.

Jeff

From: Schock, Michael
Sent: Wednesday, October 28, 2015 4:08 PM
To: Henry, Timothy <henry.timothy@epa.gov>
Cc: Kaplan, Robert <kaplan.robert@epa.gov>; Kempic, Jeffrey <Kempic.Jeffrey@epa.gov>; Lytle, Darren <Lytle.Darren@epa.gov>; Deltoral, Miguel <deltoral.miguel@epa.gov>; Poy, Thomas <poy.thomas@epa.gov>
Subject: FW: TAC Team Update 10_28_15

Tim;

Thanks for clearly representing our concerns about the certified labs today. I am still concerned that the requirement will inhibit other studies that need to be done—the pilot testing and assessment kinds of investigations that are engineering/corrosion control "best practices," not LCR requirements. Plus, testing diagnostic testing protocols to determine best what does and doesn't work, such as techniques for sampling to detect LSLs, and sampling programs for buildings that better locate contamination or reflect more on resident exposure. It still sounded to me that they wanted direct control over all Pb results, regardless of the study origin. Maybe we in EPA should talk about this some more?

The other thing which really annoys me is AGAIN scheduling the Technical Advisory committee meeting with zero consultation with the technical "experts." I had to miss the last one, and Darren, myself, and Marc Edwards, all are going to be at WQTC. Jeff usually goes. That conference is the most important technical drinking water conference of the year, and the dates are well known. I might even add, shouldn't some of the others be going there, too, given the many treatment and sampling issues that have become so clear in the last few months?

--Mike

From: Howard Croft [mailto:hcroft@cityofflint.com]
Sent: Wednesday, October 28, 2015 3:28 PM
To: Amy Hovey <Amy.Hovey@mail.house.gov>; Andy Leavitt <aleavitt@senatedems.org>; Anthony Chubb <achubb@cityofflint.com>; Brent Wright <bwright@cityofflint.com>; Lytle, Darren <Lytle.Darren@epa.gov>; Dayne Walling <dwalling@cityofflint.com>; donna. cole <donna.cole@genesys.org>; dykemal <dykemal@mich.gov>; Eden Wells (DHHS) <wellse3@michigan.gov>; edwardsm <edwardsm@vt.edu>; George Krisztian (DEQ) <krisztiang@michigan.gov>; Personal Address / Ex. 6; Howard Croft <hcroft@cityofflint.com>; James Henry <jhenry@gchd.us>; Jamie Gaskin <jgaskin@unitedwaygenesee.org>; Jason Lorenz <jlorenz@cityofflint.com>; Personal Address / Ex. 6 Personal Address / Ex. 6; JoAnne Herman <jherman@genesys.org>; John O'Brien <jfobrien@gcdcwws.com>; Kevin J. Keane <KEVIN.KEANE@cmsenergy.com>; Kirk Smith <ksmith@flint.org>; larry.koehler@mcc.edu; Personal Address / Ex. 6; Lawrence Reynolds <LawrenceR@mottchc.org>; Lawrence Reynolds <reynolds@mottchc.org>; Michael Glasgow <mglasgow@cityofflint.com>; Schock, Michael <Schock.Michael@epa.gov>; Wright, Michael <Wright.Michael@epa.gov>; Mike Lane <mjlane@umflint.edu>; Mike Prysby (DEQ) <prysbym@michigan.gov>; MVALACAK@gchd.us; Natasha Henderson <nhenderson@cityofflint.com>; Norb Birchmeier <nbirchm1@hurleymc.com>; Pete Levine <plevine@gcms.org>; Robert Bincsik <rbincsik@cityofflint.com>; rosejo@msu.edu; Russell Hudson <Russell.Hudson@mclaren.org>; Samir Matta <SFMatta@lan-inc.com>; Sean Kammer <skammer@cityofflint.com>; Stephen Busch (DEQ) <BUSCHS@michigan.gov>; thompsons2@michigan.gov; Warren Green <jwgreen@lan-inc.com>; Shawn McElmurry <s.mcelmurry@wayne.edu>
Subject: TAC Team Update 10_28_15

Team,

The next Technical Advisory Meeting is set for **Wednesday November 18th 2:00 pm** at Flint City Hall. The previous date being considered was Veterans Day and we encountered several conflicts. There will be a call in number available and I will send an agenda prior to the meeting.

There is a significant amount of new information included in this weekly report and I expect that trend to continue as we move forward. Several of the items mentioned such as the specific dosing level of phosphate will become targets of discussion at this next meeting in order to thoroughly evaluate the pros and cons and to help with public information.

The testing map continues to have information added as it becomes available and on the weekly report we have inserted a data table that will be updated regularly as well. Please let me know if anyone is interested in additional data being reported.

Please be prepared to give input on the potential of a December meeting which would have to be December 9th or December 16th.

Thank you,

--

Howard Croft

Public Works Director

City of Flint

1101 S. Saginaw Street

Flint, MI 48502

PH# 810.766.7135 Ext.2043

hcroft@cityofflint.com

To: Poy, Thomas[poy.thomas@epa.gov]; Deltoral, Miguel[deltoral.miguel@epa.gov]; Lytle, Darren[Lytle.Darren@epa.gov]; Schock, Michael[Schock.Michael@epa.gov]; Kempic, Jeffrey[Kempic.Jeffrey@epa.gov]
Cc: Kaplan, Robert[kaplan.robert@epa.gov]
From: Henry, Timothy
Sent: Thur 10/29/2015 6:39:33 PM
Subject: RE: Corrosion Control Plan

Suggested email message from Bob to Jim Sygo w/ cc to Natasha Henderson. Please let me know if this raises any questions or concerns ASAP.

Jim –

On behalf of the Task Force, thank you for the opportunity to discuss and comment on the corrosion control plan for Flint. We are encouraged to hear that yesterday Michigan issued the permit to Flint for installation of the equipment needed for phosphate addition for corrosion control treatment. The Task Force believes that the instructions in the plan regarding the form of phosphate, dosage, and equipment sizing are clear and that Flint needs to begin to implement the additional corrosion control treatment as soon as possible.

Tim Henry
Deputy Director, Water Division
U.S. EPA (W-15J)
77 W. Jackson Blvd., Chicago, IL 60604-3590
Phone: 312.886.6107 Fax: 312.692.2578

From: Poy, Thomas
Sent: Thursday, October 29, 2015 1:17 PM
To: Henry, Timothy <henry.timothy@epa.gov>
Subject: Corrosion Control Plan

Tim: Called Miguel and had him check with Mike. Both are ok with sending out the "move forward ASAP" memo.

Tom Poy

Chief, Ground Water and Drinking Water Branch

USEPA - Region 5

(312) 886-5991

To: Henry, Timothy[henry.timothy@epa.gov]; Deltoral, Miguel[deltoral.miguel@epa.gov]; Lytle, Darren[Lytle.Darren@epa.gov]; Schock, Michael[Schock.Michael@epa.gov]; Kempic, Jeffrey[Kempic.Jeffrey@epa.gov]
Cc: Kaplan, Robert[kaplan.robert@epa.gov]
From: Poy, Thomas
Sent: Thur 10/29/2015 6:43:37 PM
Subject: RE: Corrosion Control Plan

Tim: The email does a good job of capturing the message that issues are resolved and supplemental orthophosphate addition should start ASAP.

Tom

Tom Poy

Chief, Ground Water and Drinking Water Branch

USEPA - Region 5

(312) 886-5991

From: Henry, Timothy
Sent: Thursday, October 29, 2015 1:40 PM
To: Poy, Thomas <poy.thomas@epa.gov>; Deltoral, Miguel <deltoral.miguel@epa.gov>; Lytle, Darren <Lytle.Darren@epa.gov>; Schock, Michael <Schock.Michael@epa.gov>; Kempic, Jeffrey <Kempic.Jeffrey@epa.gov>
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Cc: Kaplan, Robert[kaplan.robert@epa.gov]
From: Lytle, Darren
Sent: Thur 10/29/2015 6:44:36 PM
Subject: RE: Corrosion Control Plan

Looks fine to me, Darren

Darren A. Lytle, Ph.D., P.E.

Branch Chief (Acting)

U.S. Environmental Protection Agency

26 West Martin Luther King Dr.

Cincinnati, Ohio 45268

Phone: (513) 569-7432

Fax: (513) 487-2543

email: lytle.darren@epa.gov

From: Henry, Timothy
Sent: Thursday, October 29, 2015 2:40 PM
To: Poy, Thomas <poy.thomas@epa.gov>; Deltoral, Miguel <deltoral.miguel@epa.gov>; Lytle, Darren <Lytle.Darren@epa.gov>; Schock, Michael <Schock.Michael@epa.gov>; Kempic, Jeffrey <Kempic.Jeffrey@epa.gov>
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Cc: Kaplan, Robert[kaplan.robert@epa.gov]
From: Kempic, Jeffrey
Sent: Thur 10/29/2015 6:45:49 PM
Subject: RE: Corrosion Control Plan

Tim,

Looks good to me.

Jeff

Jeffrey Kempic

Treatment Technology and Cost Team Leader

Standards and Risk Management Division

Phone: (202) 564-4880

From: Henry, Timothy
Sent: Thursday, October 29, 2015 2:40 PM
To: Poy, Thomas <poy.thomas@epa.gov>; Deltoral, Miguel <deltoral.miguel@epa.gov>; Lytle, Darren <Lytle.Darren@epa.gov>; Schock, Michael <Schock.Michael@epa.gov>; Kempic, Jeffrey <Kempic.Jeffrey@epa.gov>
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Subject: RE: Corrosion Control Plan

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Chief, Ground Water and Drinking Water Branch

USEPA - Region 5

(312) 886-5991

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Cc: Deltoral, Miguel[deltoral.miguel@epa.gov]; Kaplan, Robert[kaplan.robert@epa.gov]; Kempic, Jeffrey[Kempic.Jeffrey@epa.gov]; Lytle, Darren[Lytle.Darren@epa.gov]; Poy, Thomas[poy.thomas@epa.gov]; Schock, Michael[Schock.Michael@epa.gov]
From: Henry, Timothy
Sent: Thur 10/29/2015 8:22:35 PM
Subject: FW: Corrosion Control Plan

Bob –

I knew it would be difficult to convene a call of all of the TF members this afternoon, so I sought their feedback on a draft message to the state by means of email. I got responses back from Jeff, Tom and Darren. I called and spoke with Mike. All responded favorably. I did not hear back from Miguel, but I understand that he is off for the day. Tom informed me that his earlier discussion with Miguel confirmed that he supported sending such a message and that he did not believe that Miguel would have any issue with how the message was written. Based on this feedback, I believe that the message below represents the position of the TF and encourage you to send it to Jim.

Tim Henry
Deputy Director, Water Division
U.S. EPA (W-15J)
77 W. Jackson Blvd., Chicago, IL 60604-3590
Phone: 312.886.6107 Fax: 312.692.2578

Recommended Message to go to Jim Sygo, cc to Natasha Henderson:

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To: Schock, Michael[Schock.Michael@epa.gov]; Henry, Timothy[henry.timothy@epa.gov]; Deltoral, Miguel[deltoral.miguel@epa.gov]; Kaplan, Robert[kaplan.robert@epa.gov]; Lytle, Darren[Lytle.Darren@epa.gov]; Poy, Thomas[poy.thomas@epa.gov]
From: Kempic, Jeffrey
Sent: Thur 10/29/2015 9:58:02 PM
Subject: RE: Flint Task Force -- MDEQ PO4 permit

Tim,

I agree with Mike that there appears to be an issue with the orthophosphate being reported as P or as PO4. The language we were discussing stated:

DWSD supplied water is currently dosed at 0.39 mg/L as P (1.2 mg/L as PO4) slightly above DWSD's OCCT requirement to dose a minimum of 0.9 mg/L as PO4 and have a minimum plant tap residual of 0.8 mg/L as PO4. DWSD plant tap residuals have been shown to consistently be at 0.39 mg/L as P (1.2 mg/L as PO4). In addition water supply entering Flint has been tested and so far shown to contain approximately 0.39 mg/L as P (1.2 mg/L as PO4) as well.

To achieve pipe passivation Flint will boost orthophosphate dosage to establish a minimum distribution residual of 1.0 mg/L as P (3.1 mg/L as PO4). The chemical feed system will be sized to achieve a dose up to 2.0 mg/L as P (6.1 mg/L as PO4) in case orthophosphate loss is observed.

The language on the PO4 permit is a bit different in a couple of areas:

It states that a dosage of 0.8 mg/L as PO4 has been recommended for the Detroit water. This seems inconsistent with the above DWSD's OCCT requirement for a minimum of 0.9 mg/L and the current dose of 1.2 mg/L as PO4.

In the first paragraph of the permit, the units are expressed as mg/L as PO4. In the third paragraph, the permit states that the arriving water from Detroit will have some residual PO4 and it has been reported that this residual will be approximately 0.4 mg/L The permit does not specify the units here. Based on the information that we were discussing (and excerpted above), it appears that it is approximately 0.4 mg/L as P or 1.2 mg/L as PO4. Thus, it appears that the permit is not using consistent units between the first and third paragraphs. I think the permit needs to either use consistent reporting units or even better spell out as P or as PO4 in every instance to avoid problems.

Hope that helps.

Jeff

From: Schock, Michael
Sent: Thursday, October 29, 2015 5:05 PM
To: Henry, Timothy <henry.timothy@epa.gov>; Deltoral, Miguel <deltoral.miguel@epa.gov>; Kaplan, Robert <kaplan.robert@epa.gov>; Kempic, Jeffrey <Kempic.Jeffrey@epa.gov>; Lytle, Darren <Lytle.Darren@epa.gov>; Poy, Thomas <poy.thomas@epa.gov>
Subject: RE: Flint Task Force -- MDEQ PO4 permit
Importance: High

Tim;

There is a unit "issue" in the section of phosphate dosages. In our phone call the other day, DEQ indicate the units discussed were mg/L as P, when we questioned how much phosphate was being consumed in the Flint system from the Detroit water feed This also came up in a prior discussion on the phone Darren and I had with DEQ about observations of phosphate loss, even within Detroit. The recommendations Darren and I provided for an initial dose of a total amount of PO4 (as PO4), were that the target residual to the estimated theoretical point of diminishing returns to optimize phosphate (in lieu of having it be determined by actual pilot testing) should be in the 3-4 mg/L as PO4 neighborhood, closer to 4.

At this time (but not when they change water supplies!) they only need to supplement the PO4 coming from Detroit, Thus, the pumps to be installed should have the minimum capacity to dose to achieve the 3-4 mg/L as PO4 level (1-1.3 mg/L as P), with extra capacity to achieve 4-6 mg/L as PO4 (1.3 to 2 mg/L as P), to assure that they could overcome an estimated system pipe wall demand. So, the design max dosage for the pumps should be 6 mg/L as PO4 – (the minimum amount of phosphate received from Detroit, in mg/L as PO4). The minimum would be 3.5 to 5 mg/L as PO4 – (the maximum amount of phosphate received from Detroit, in mg/L as PO4).

I seem to recall that we were assured on our phone call the other day that the changes were being made to address our concerns, but that the units were in mg/L as P. Since the conversion factor of P to PO4 is 3, then clearly, the target residual would be about 1-1.3 mg/L as P, but it looks like the units are PO4 in this permit. They say the max design dosage would be 1.5 mg/L, which is still a little low, if the units truly are mg/L as P (4.5 mg/L supplement on top of received water). But I'm really confused by the level they say is received from Detroit, because they very explicitly say "as PO4" in the engineering report that is the basis for the permit request, not as "P."

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Sent: Thursday, October 29, 2015 4:27 PM
To: Deltoral, Miguel <deltoral.miguel@epa.gov>; Kaplan, Robert <kaplan.robert@epa.gov>; Kempic, Jeffrey <Kempic.Jeffrey@epa.gov>; Lytle, Darren <Lytle.Darren@epa.gov>; Poy, Thomas <poy.thomas@epa.gov>; Schock, Michael <Schock.Michael@epa.gov>
Subject: FW: Flint Task Force -- MDEQ PO4 permit

Please take a quick look at the conditions in this permit and confirm that they match what we discussed with DEQ earlier this week

Tim Henry
Deputy Director, Water Division
U.S. EPA (W-15J)
77 W. Jackson Blvd., Chicago, IL 60604-3590
Phone: 312.886.6107 Fax: 312.692.2578

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Thanks. -- Bob

Robert Kaplan

Deputy Regional Administrator

U.S. EPA Region 5

Phone: (312) 886-1499

Cell: Personal Phone / Ex. 6

Fax: (312) 692-2075

To: Kempic, Jeffrey[Kempic.Jeffrey@epa.gov]
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From: Henry, Timothy
Sent: Thur 10/29/2015 10:48:32 PM
Subject: Re: Flint Task Force -- MDEQ PO4 permit

Thanks Jeff

Tim Henry
Deputy Director, Water Division
US EPA Region V
312-886-6107 (office)
Personal Phone / Ex. 6 [redacted] (cell)

Sent from my iPhone

On Oct 29, 2015, at 16:58, Kempic, Jeffrey <Kempic.Jeffrey@epa.gov> wrote:

Tim,

I agree with Mike that there appears to be an issue with the orthophosphate being reported as P or as PO4. The language we were discussing stated:

DWSD supplied water is currently dosed at 0.39 mg/L as P (1.2 mg/L as PO4) slightly above DWSD's OCCT requirement to dose a minimum of 0.9 mg/L as PO4 and have a minimum plant tap residual of 0.8 mg/L as PO4. DWSD plant tap residuals have been shown to consistently be at 0.39 mg/L as P (1.2 mg/L as PO4). In addition water supply entering Flint has been tested and so far shown to contain approximately 0.39 mg/L as P (1.2 mg/L as PO4) as well.

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In the first paragraph of the permit, the units are expressed as mg/L as PO4. In the third paragraph, the permit states that the arriving water from Detroit will have some residual PO4 and it has been reported that this residual will be approximately 0.4 mg/L The permit does not specify the units here. Based on the information that we were discussing (and excerpted above), it appears that it is approximately 0.4 mg/L as P or 1.2 mg/L as PO4. Thus, it appears that the permit is not using consistent units between the first and third paragraphs. I think the permit needs to either use consistent reporting units or even better spell out as P or as PO4 in every instance to avoid problems.

Hope that helps.

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Subject: RE: Flint Task Force -- MDEQ PO4 permit
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U.S. EPA Region 5

Phone: (312) 886-1499

Cell: Personal Phone / Ex. 6

Fax: (312) 692-2075

To: Henry, Timothy[henry.timothy@epa.gov]
From: Poy, Thomas
Sent: Thur 10/29/2015 10:54:23 PM
Subject: RE: Flint Task Force -- MDEQ PO4 permit

I'll talk to Bob tomorrow morning about this.

Tom

Tom Poy

Chief, Ground Water and Drinking Water Branch

USEPA - Region 5

(312) 886-5991

From: Henry, Timothy
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To: Kempic, Jeffrey <Kempic.Jeffrey@epa.gov>
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Cc: Kempic, Jeffrey[Kempic.Jeffrey@epa.gov]; Lytle, Darren[Lytle.Darren@epa.gov]; Poy, Thomas[poy.thomas@epa.gov]; Schock, Michael[Schock.Michael@epa.gov]
From: Deltoral, Miguel
Sent: Fri 10/30/2015 12:39:49 PM
Subject: Re: Corrosion Control Plan

Apologies - I could not get into my email all day yesterday and until recently this am. I think it looks fine as well.

Miguel A. Del Toral
Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

From: Henry, Timothy
Sent: Thursday, October 29, 2015 03:22 PM
To: Kaplan, Robert
Cc: Deltoral, Miguel; Kaplan, Robert; Kempic, Jeffrey; Lytle, Darren; Poy, Thomas; Schock, Michael
Subject: FW: Corrosion Control Plan

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Recommended Message to go to Jim Sygo, cc to Natasha Henderson:

Jim –

On behalf of the Task Force, thank you for the opportunity to discuss and comment on the corrosion control plan for Flint. We are encouraged to hear that yesterday Michigan issued the permit to Flint for installation of the equipment needed for phosphate addition for corrosion control treatment. The Task Force believes that the instructions in the plan regarding the form of phosphate, dosage, and equipment sizing are clear and that Flint needs to begin to implement the additional corrosion control treatment as soon as possible.

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From: Kaplan, Robert
Sent: Fri 10/30/2015 12:47:00 PM
Subject: Re: Corrosion Control Plan

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FYI, Tim is not available today.

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Sent from my iPhone

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> **Sent:** Thursday, October 29, 2015 03:22 PM
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From: Deltoral, Miguel
Sent: Fri 10/30/2015 12:51:27 PM
Subject: Re: Flint Task Force -- MDEQ PO4 permit

I agree as well. On a related note - For the school and OCCT efforts, if the CRL is going to provide analytical support I will need to prepare a QAPP as soon as possible so that we are ready on our end. This issue was left somewhat up in the air so I just wanted to point that out as it would take about a week to define the scope of work for each of these efforts and to get the QAPP finalized. We would also need to give the lab folks a heads-up asap so that they have adequate supplies on hand.

Miguel A. Del Toral
Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

From: Lytle, Darren
Sent: Friday, October 30, 2015 06:53 AM
To: Henry, Timothy; Deltoral, Miguel; Kaplan, Robert; Kempic, Jeffrey; Poy, Thomas; Schock, Michael
Subject: RE: Flint Task Force -- MDEQ PO4 permit

I agree will all that has already been pointed out. We also mentioned doing a simple pH check to make sure the target phosphate dose does not significantly impact pH. I do not see mention of this.

Darren

Darren A. Lytle, Ph.D., P.E.

Branch Chief (Acting)

U.S. Environmental Protection Agency

26 West Martin Luther King Dr.

Cincinnati, Ohio 45268

Phone: (513) 569-7432

Fax: (513) 487-2543

email: lytle.darren@epa.gov

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From: Deltoral, Miguel
Sent: Fri 10/30/2015 12:54:24 PM
Subject: Re: Corrosion Control Plan

I believe Mike is also off today as well. I am working from home and will stay on-line (network permitting) until we finish this up.

Miguel A. Del Toral
Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

From: Kaplan, Robert
Sent: Friday, October 30, 2015 07:46 AM
To: Deltoral, Miguel
Cc: Henry, Timothy; Kempic, Jeffrey; Lytle, Darren; Poy, Thomas; Schock, Michael
Subject: Re: Corrosion Control Plan

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To: Deltoral, Miguel[deltoral.miguel@epa.gov]
Cc: Henry, Timothy[henry.timothy@epa.gov]; Kempic, Jeffrey[Kempic.Jeffrey@epa.gov]; Lytle, Darren[Lytle.Darren@epa.gov]; Poy, Thomas[poy.thomas@epa.gov]; Schock, Michael[Schock.Michael@epa.gov]
From: Kaplan, Robert
Sent: Fri 10/30/2015 12:59:03 PM
Subject: Re: Corrosion Control Plan

Thanks! I have shipped over the units issue Mike noted to MDEQ. Awaiting response. Will keep us all in the loop.

Sent from my iPhone

On Oct 30, 2015, at 7:54 AM, Deltoral, Miguel <deltoral.miguel@epa.gov> wrote:

> I believe Mike is also off today as well. I am working from home and will stay on-line (network permitting) until we finish this up.
>
> Miguel A. Del Toral
> Regulations Manager
> U.S. EPA R5 GWDWB
> 77 West Jackson Blvd, (WG-15J)
> Chicago, IL 60604
> Phone: (312) 886-5253

> **From:** Kaplan, Robert
> **Sent:** Friday, October 30, 2015 07:46 AM
> **To:** Deltoral, Miguel
> **Cc:** Henry, Timothy; Kempic, Jeffrey; Lytle, Darren; Poy, Thomas; Schock, Michael
> **Subject:** Re: Corrosion Control Plan
>
> Thanks, all. New question for us. It appears that the permit issued may have not taken account of some of the comments we provided. MDEQ assured me the letter to Flint, expected later today, will take account of those comments. I'm have held off sending the message below until we all agree that the letter is adequate (and enforceable). I will this morning share our concerns with MDEQ. Does that sound OK?
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Miguel A. Del Toral
Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

From: Henry, Timothy
Sent: Thursday, October 29, 2015 03:22 PM
To: Kaplan, Robert
Cc: Deltoral, Miguel; Kaplan, Robert; Kempic, Jeffrey; Lytle, Darren; Poy, Thomas; Schock, Michael
Subject: FW: Corrosion Control Plan

Bob –

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Tim Henry
Deputy Director, Water Division
U.S. EPA (W-15J)
77 W. Jackson Blvd., Chicago, IL 60604-3590
Phone: 312.886.6107 Fax: 312.692.2578

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From: Lytle, Darren
Sent: Fri 10/30/2015 1:15:17 PM
Subject: RE: Corrosion Control Plan

I am also at home but available today. Darren

Darren A. Lytle, Ph.D., P.E.

Branch Chief (Acting)

U.S. Environmental Protection Agency

26 West Martin Luther King Dr.

Cincinnati, Ohio 45268

Phone: (513) 569-7432

Fax: (513) 487-2543

email: lytle.darren@epa.gov

From: Deltoral, Miguel
Sent: Friday, October 30, 2015 8:54 AM
To: Kaplan, Robert <kaplan.robert@epa.gov>
Cc: Henry, Timothy <henry.timothy@epa.gov>; Kempic, Jeffrey <Kempic.Jeffrey@epa.gov>; Lytle, Darren <Lytle.Darren@epa.gov>; Poy, Thomas <poy.thomas@epa.gov>; Schock, Michael <Schock.Michael@epa.gov>
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Cc: Henry, Timothy[henry.timothy@epa.gov]; Poy, Thomas[poy.thomas@epa.gov]; Schock, Michael[Schock.Michael@epa.gov]
From: Kempic, Jeffrey
Sent: Fri 10/30/2015 1:38:49 PM
Subject: RE: Corrosion Control Plan

I am at work today and can review the letter when we receive it.

Jeffrey Kempic

Treatment Technology and Cost Team Leader

Standards and Risk Management Division

Phone: (202) 564-4880

From: Lytle, Darren
Sent: Friday, October 30, 2015 9:15 AM
To: Deltoral, Miguel <deltoral.miguel@epa.gov>; Kaplan, Robert <kaplan.robert@epa.gov>
Cc: Henry, Timothy <henry.timothy@epa.gov>; Kempic, Jeffrey <Kempic.Jeffrey@epa.gov>; Poy, Thomas <poy.thomas@epa.gov>; Schock, Michael <Schock.Michael@epa.gov>
Subject: RE: Corrosion Control Plan

Nonresponsive

Darren A. Lytle, Ph.D., P.E.

Branch Chief (Acting)

U.S. Environmental Protection Agency

26 West Martin Luther King Dr.

Cincinnati, Ohio 45268

Phone: (513) 569-7432

Fax: (513) 487-2543

email: lytle.darren@epa.gov

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From: Kempic, Jeffrey
Sent: Fri 10/30/2015 3:08:11 PM
Subject: RE: TAC Team Update 10_28_15

Nonresponsive

Jeff

From: Lytle, Darren
Sent: Thursday, October 29, 2015 11:21 AM
To: Henry, Timothy <henry.timothy@epa.gov>; Deltoral, Miguel <deltoral.miguel@epa.gov>; Kaplan, Robert <kaplan.robert@epa.gov>; Kempic, Jeffrey <Kempic.Jeffrey@epa.gov>; Poy, Thomas <poy.thomas@epa.gov>; Schock, Michael <Schock.Michael@epa.gov>
Subject: RE: TAC Team Update 10_28_15

Nonresponsive

Darren

Darren A. Lytle, Ph.D., P.E.

Branch Chief (Acting)

U.S. Environmental Protection Agency

26 West Martin Luther King Dr.

Cincinnati, Ohio 45268

Phone: (513) 569-7432

Fax: (513) 487-2543

email: lytle.darren@epa.gov

From: Henry, Timothy
Sent: Wednesday, October 28, 2015 5:30 PM
To: Deltoral, Miguel <deltoral.miguel@epa.gov>; Kaplan, Robert <kaplan.robert@epa.gov>; Kempic, Jeffrey <Kempic.Jeffrey@epa.gov>; Lytle, Darren <Lytle.Darren@epa.gov>; Poy, Thomas <poy.thomas@epa.gov>; Schock, Michael <Schock.Michael@epa.gov>
Subject: RE: TAC Team Update 10_28_15

Hi all –

Just a quick note regarding the meeting in Flint. We are looking at hotel accommodations for the evening of the 9th and will let you know what looks to be available. We would like to be able to have a short face-to-face meeting before the official meeting on the 10th and it may be that the only available time would be the evening of the 9th at the hotel or maybe over dinner…we will see if that works out.

Also, it would be helpful to get your thoughts about what we want to make sure we cover or see or do while we are in Flint beyond the 10:00 meeting. For example, do we want to get to the treatment plant to see its condition and where they will be installing equipment for orthophosphate addition? Please let us know and we will see what we can arrange.

Tim Henry
Deputy Director, Water Division

U.S. EPA (W-15J)
77 W. Jackson Blvd., Chicago, IL 60604-3590
Phone: 312.886.6107 Fax: 312.692.2578

From: Kaplan, Robert
Sent: Wednesday, October 28, 2015 3:57 PM
To: Kempic, Jeffrey <Kempic.Jeffrey@epa.gov>; Schock, Michael <Schock.Michael@epa.gov>; Henry, Timothy <henry.timothy@epa.gov>
Cc: Lytle, Darren <Lytle.Darren@epa.gov>; Deltoral, Miguel <deltoral.miguel@epa.gov>; Poy, Thomas <poy.thomas@epa.gov>
Subject: RE: TAC Team Update 10_28_15

Task Force Members –

Thanks for a very good call today with MDEQ. Ideally, we would have had a pre-call to discuss and present our concerns. Thanks for your flexibility in handling our concerns about laboratory certification at the outset of the call.

Also, since we are not in the same room, it's sometimes hard to know when and if we have heard all voices. Please know that I never mean to cut short any discussion – if you feel we need to continue on a subject, or if we have not fully considered something, I encourage you to speak up. Please feel free, and know that my attempts to find agreement and move to the next subject should never be construed as an attempt to limit full and robust discussion.

We should all plan to be in Flint on the morning of Nov. 10. Please start making your travel arrangements now. Details to follow.

Thanks,

Bob

Robert Kaplan

Deputy Regional Administrator

U.S. EPA Region 5

Phone: (312) 886-1499

Cell: (312) 515-9827

Fax: (312) 692-2075

From: Kempic, Jeffrey
Sent: Wednesday, October 28, 2015 3:21 PM
To: Schock, Michael <Schock.Michael@epa.gov>; Henry, Timothy <henry.timothy@epa.gov>
Cc: Kaplan, Robert <kaplan.robert@epa.gov>; Lytle, Darren <Lytle.Darren@epa.gov>; Deltoral, Miguel <deltoral.miguel@epa.gov>; Poy, Thomas <poy.thomas@epa.gov>
Subject: RE: TAC Team Update 10_28_15

Tim,

In addition to WQTC being that week, it is also the same week as the National Drinking Water Advisory Council meeting, which is why I won't be at WQTC this year. The NDWAC will be deliberating Tuesday afternoon and all day Wednesday on the NDWAC Working Group report so that they can provide final recommendations to EPA on revisions to the Lead and Copper Rule.

Jeff

From: Schock, Michael
Sent: Wednesday, October 28, 2015 4:08 PM
To: Henry, Timothy <henry.timothy@epa.gov>
Cc: Kaplan, Robert <kaplan.robert@epa.gov>; Kempic, Jeffrey <Kempic.Jeffrey@epa.gov>; Lytle, Darren <Lytle.Darren@epa.gov>; Deltoral, Miguel <deltoral.miguel@epa.gov>; Poy, Thomas <poy.thomas@epa.gov>
Subject: FW: TAC Team Update 10_28_15

Tim;

Thanks for clearly representing our concerns about the certified labs today. I am still concerned that the requirement will inhibit other studies that need to be done—the pilot testing and assessment kinds of investigations that are engineering/corrosion control "best practices," not LCR requirements. Plus, testing diagnostic testing protocols to determine best what does and doesn't work, such as techniques for sampling to detect LSLs, and sampling programs for buildings that better locate contamination or reflect more on resident exposure. It still sounded to me that they wanted direct control over all Pb results, regardless of the study origin. Maybe we in EPA should talk about this some more?

The other thing which really annoys me is AGAIN scheduling the Technical Advisory committee meeting with zero consultation with the technical "experts." I had to miss the last one, and Darren, myself, and Marc Edwards, all are going to be at WQTC. Jeff usually goes. That conference is the most important technical drinking water conference of the year, and the dates are well known. I might even add, shouldn't some of the others be going there, too, given the many treatment and sampling issues that have become so clear in the last few months?

--Mike

From: Howard Croft [mailto:hcroft@cityofflint.com]
Sent: Wednesday, October 28, 2015 3:28 PM
To: Amy Hovey <Amy.Hovey@mail.house.gov>; Andy Leavitt <aleavitt@senatedems.org>; Anthony Chubb <achubb@cityofflint.com>; Brent Wright <bwright@cityofflint.com>; Lytle, Darren <Lytle.Darren@epa.gov>; Dayne Walling <dwalling@cityofflint.com>; donna. cole <donna.cole@genesys.org>; dykemal <dykemal@mich.gov>; Eden Wells (DHHS) <wellse3@michigan.gov>; edwardsm <edwardsm@vt.edu>; George Krisztian (DEQ) <krisztiang@michigan.gov>; Gerald (Jed) Natzke <gdn2@aol.com>; Howard Croft <hcroft@cityofflint.com>; James Henry <jhenry@gchd.us>; Jamie Gaskin <jgaskin@unitedwaygenesee.org>; Jason Lorenz <jlorenz@cityofflint.com>; jmikewright <jmikewright@yahoo.com>; JoAnne Herman <jherman@genesys.org>; John O'Brien <jfobrien@gcdcwws.com>; Kevin J. Keane <KEVIN.KEANE@cmsenergy.com>; Kirk Smith <ksmith@flint.org>; larry.koehler@mcc.edu; Laura Sullivan <dr.laura2@gmail.com>; Lawrence Reynolds <LawrenceR@mottchc.org>; Lawrence Reynolds <reynolds@mottchc.org>; Michael Glasgow <mglasgow@cityofflint.com>; Schock, Michael <Schock.Michael@epa.gov>; Wright, Michael <Wright.Michael@epa.gov>; Mike Lane <mjlane@umflint.edu>; Mike Prysby (DEQ) <prysbym@michigan.gov>; MVALACAK@gchd.us; Natasha Henderson <nhenderson@cityofflint.com>; Norb Birchmeier <nbirchm1@hurleymc.com>; Pete Levine <plevine@gcms.org>; Robert Bincsik <rbincsik@cityofflint.com>; rosejo@msu.edu; Russell Hudson <Russell.Hudson@mclaren.org>; Samir Matta <SFMatta@lan-inc.com>; Sean Kammer <skammer@cityofflint.com>; Stephen Busch (DEQ) <BUSCHS@michigan.gov>; thompsons2@michigan.gov; Warren Green <jwgreen@lan-inc.com>; Shawn McElmurry <s.mcelmurry@wayne.edu>
Subject: TAC Team Update 10_28_15

Team,

The next Technical Advisory Meeting is set for **Wednesday November 18th 2:00 pm** at Flint City Hall. The previous date being considered was Veterans Day and we encountered several conflicts. There will be a call in number available and I will send an agenda prior to the meeting.

There is a significant amount of new information included in this weekly report and I expect that trend to continue as we move forward. Several of the items mentioned such as the specific dosing level of phosphate will become targets of discussion at this next meeting in order to thoroughly evaluate the pros and cons and to help with public information.

The testing map continues to have information added as it becomes available and on the weekly report we have inserted a data table that will be updated regularly as well. Please let me know if anyone is interested in additional data being reported.

Please be prepared to give input on the potential of a December meeting which would have to be December 9th or December 16th.

Thank you,

--

Howard Croft

Public Works Director

City of Flint

1101 S. Saginaw Street

Flint, MI 48502

PH# 810.766.7135 Ext.2043

hcroft@cityofflint.com

To: Poy, Thomas[poy.thomas@epa.gov]; Kempic, Jeffrey[Kempic.Jeffrey@epa.gov]; Deltoral, Miguel[deltoral.miguel@epa.gov]; Henry, Timothy[henry.timothy@epa.gov]; Lytle, Darren[Lytle.Darren@epa.gov]; Schock, Michael[Schock.Michael@epa.gov]
From: Kaplan, Robert
Sent: Fri 10/30/2015 5:48:01 PM
Subject: Urgent -- Task Force Review of Permit and Letter
Draft Flint CCT operation letter.docx

Task Force,

Attached is MDEQ's draft corrosion control letter to Flint to accompany the permit I sent around yesterday.

Two things – First, MDEQ tells me that this letter will be enforceable via a state reg, as if part of the permit. Second, MDEQ tells me that the letter takes account of our feedback to date, including the units issue raised concerning the permit yesterday.

Please review. DEQ intends to send this letter today. While it would be good to accommodate that schedule, we *do not want to rush or otherwise cut off any necessary EPA review.* Please let me know your thoughts, **including whether the time constraints on the review are feasible or not**.

Thanks, all.

- Bob

Robert Kaplan

Deputy Regional Administrator

U.S. EPA Region 5

Phone: (312) 886-1499

Cell: Personal Phone / Ex. 6

Fax: (312) 692-2075

STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY
LANSING DISTRICT OFFICE

RICK SNYDER
GOVERNOR

DAN WYANT
DIRECTOR

October 30, 2015

Mr. Mike Glasgow
Utilities Administrator
City of Flint
4500 North Dort Highway
Flint, Michigan 48505

Dear Mr. Glasgow:

SUBJECT: Water Supply – City of Flint (City) – Corrosion Control Treatment Operation

The purpose of this letter is to outline additional requirements and recommendations regarding the additional corrosion control treatment measures being taken by the City water system.

The City has been purchasing drinking water from the Detroit Water and Sewerage Department (DWSD)/Great Lakes Water Authority (GLWA) since Friday, October 16, 2015. DWSD/GLWA provides corrosion control treatment to its water and DWSD/GLWA has been deemed by the Michigan Department of Environmental Quality (MDEQ) to have fully optimized corrosion control treatment. This optimization requires DWSD/GLWA to provide orthophosphate addition, maintain a minimum dose of 0.9 milligrams per liter (mg/L) as PO_4, and maintain a DWSD/GLWA plant tap residual of 0.8 mg/L as PO_4. As part of its optimization, DWSD/GLWA is also required to maintain a minimum pH of 7.0 at the DWSD/GLWA plant tap.

DRAFT

Corrosion Control Treatment and Operation

To further enhance pipe passivation in the City water distribution system, customer service lines, and customer plumbing, **the City shall dose additional orthophosphate to increase distribution system phosphate residual to a minimum of 3.1 mg/L as PO_4 (1.0 mg/L as P).** The City has obtained a Michigan Safe Drinking Water Act, 1976 PA 399, as amended (Act 399), water system construction permit for the installation of this treatment equipment at Control Station 2 and Pump Station 4, construction permit number W151104, issued on October 28, 2015.

The City should also maintain a minimum pH level of 7.0 throughout the City's water distribution system. If pH levels of 7.0 or less are detected, the City shall immediately notify the MDEQ.

As part of the City water system operations, the City shall conduct:

- **Daily monitoring of incoming DWSD/GLWA water for pH and for orthophosphate residual, as PO_4**
- **Daily monitoring of additional orthophosphate dosage, as PO_4**
- **Daily monitoring of water entering the City distribution system for pH and for orthophosphate residual, as PO_4**

This information shall be included in the City's monthly operation report and shall be reported to the MDEQ as required under Administrative Rule 1502 (R 325.11502) of the administrative rules promulgated pursuant to Act 399.

Enhanced Water Quality Parameter Monitoring

The City's revised monitoring schedule dated October 22, 2015, requires quarterly Water Quality Parameter Monitoring at 25 sites throughout the City's water distribution system for temperature (Celcius), Conductivity (mS), pH, Total Alkalinity (mg/L as $CaCO_3$), Calcium (mg/L as Ca^{2+}), and orthophosphate (mg/L PO_4). Ten of these 25 sites are also used by the City to conduct required total coliform bacteria and chlorine residual monitoring (location numbers 1, 2, 3, 4, 5, 6, 7, 8, CS, and WS). **At these ten locations the City shall also conduct weekly monitoring for the following parameters at the same time that total coliform bacteria and chlorine residual monitoring is conducted to further assess water stability:**

- **Turbidity (NTU)**
- **Iron (mg/L)**
- **Orthophosphate (mg/L PO_4)**
- **pH**
- **Total Alkalinity (mg/L as $CaCO_3$)**
- **Calcium (mg/L as Ca^{2+})**
- **Chloride (mg/L as Cl^-)**
- **Temperature (Celcius)**
- **Conductivity (mS)**

If orthophosphate residual levels less than 3.1 mg/L as PO_4 (1.0 mg/L as P) are detected at any of these locations, then orthophosphate dosage shall be increased to achieve the minimum phosphate residual of 3.1 mg/L as PO_4 (1.0 mg/L as P) at all locations. In addition, if pH levels of 7.0 or less are detected at any of these locations, the City shall immediately notify the MDEQ.

Corrosion Control Treatment Test Loops

To further confirm the effectiveness of corrosion control treatment and the City's operations, it is recommended that the City construct, install, and monitor test loops of service line and plumbing materials. Instructions for construction, installation, and monitoring of these test loops can be obtained from the United States Environmental Protection Agency's (U.S. EPA) Office of Research and Development. Please contact Mr. Darren Lytle, Acting Branch Chief, at 512-569-7432 or lytle.darren@epa.gov.

Lead Service Line Verification Sampling

The City has been reviewing customer service connection records in order to confirm customer service line materials at each connection. The U.S. EPA has developed a sampling procedure that can be used to help verify the presence of lead service lines and it is recommended that the City conduct this sampling at a selection of customer locations for this purpose. Information regarding this verification sampling can also be obtained from Mr. Lytle. Any water analysis for lead and copper is expected to be completed by a certified lab.

Customer Household Exposure Assessment

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DRAFT

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If you have any questions regarding this correspondence, please contact me at the number below or at prysbym@michigan.gov.

Sincerely,

Michael F. Prysby, P.E.
District Engineer
Field Operations Section
Office of Drinking Water and
Municipal Assistance
517-290-8817

cc: Mr. Brent Wright, City of Flint
Mr. Howard Croft, City of Flint
Ms. Natasha Henderson, City of Flint
Mr. Darren Lytle, U.S. EPA
Mr. Samir F. Matta, P.E., Lockwood, Andrews & Newnam, Inc.
Mr. Warren Green, Lockwood, Andrews & Newnam, Inc.
Genesee County Health Department
Dr. Linda Dykema, MDHHS
Mr. Jim Sygo, Chief Deputy Director, MDEQ
Mr. Stephen Busch, MDEQ
Mr. Adam Rosenthal, MDEQ

DRAFT

To: Kempic, Jeffrey[Kempic.Jeffrey@epa.gov]; Deltoral, Miguel[deltoral.miguel@epa.gov]; Henry, Timothy[henry.timothy@epa.gov]; Lytle, Darren[Lytle.Darren@epa.gov]; Schock, Michael[Schock.Michael@epa.gov]
From: Poy, Thomas
Sent: Fri 10/30/2015 6:47:39 PM
Subject: RE: Urgent -- Task Force Review of Permit and Letter

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They are requiring:

the additional dose to be a minimum of 3.1 mg/L as PO4

a minimum pH of 7.0 throughout the distribution system

daily monitoring of pH and orthophosphate residual as PO4 from Detroit

daily monitoring of additional orthophosphate dosage as PO4

daily monitoring of pH and ortho residual

monitoring for enhanced WQP (turbidity, iron, ortho, pH, total alkalinity, calcium, chloride, temp, conductivity)

recommending CCT test loops be constructed

confirmation of LSLs

additional lead exposure research monitoring be evaluated by the TAC

evaluate CCT with respect to the Karegnondi Water pipeline.

Is there anything missing or can MDEQ send the letter out? Please provide me with any comments so I can consolidate.

Thanks.

Tom

Tom Poy

Chief, Ground Water and Drinking Water Branch

USEPA - Region 5

(312) 886-5991

From: Kaplan, Robert
Sent: Friday, October 30, 2015 12:48 PM
To: Poy, Thomas <poy.thomas@epa.gov>; Kempic, Jeffrey <Kempic.Jeffrey@epa.gov>; Deltoral, Miguel <deltoral.miguel@epa.gov>; Henry, Timothy <henry.timothy@epa.gov>; Lytle, Darren <Lytle.Darren@epa.gov>; Schock, Michael <Schock.Michael@epa.gov>
Subject: Urgent -- Task Force Review of Permit and Letter

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Thanks, all.

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Robert Kaplan

Deputy Regional Administrator

U.S. EPA Region 5

Phone: (312) 886-1499

Cell: Personal Phone / Ex. 6

Fax: (312) 692-2075

Cc: Kaplan, Robert[kaplan.robert@epa.gov]; Henry, Timothy[henry.timothy@epa.gov]; Schock, Michael[Schock.Michael@epa.gov]; Lytle, Darren[Lytle.Darren@epa.gov]; Kempic, Jeffrey[Kempic.Jeffrey@epa.gov]
To: Poy, Thomas[poy.thomas@epa.gov]
From: Deltoral, Miguel
Sent: Fri 10/30/2015 6:56:49 PM
Subject: Re: Urgent -- Task Force Review of Permit and Letter
Draft Flint CCT operation letter mdt.docx

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Miguel A. Del Toral
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U.S. EPA R5 GWDWB
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Chicago, IL 60604
Phone: (312) 886-5253

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STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY
LANSING DISTRICT OFFICE

RICK SNYDER
GOVERNOR

DAN WYANT
DIRECTOR

October 30, 2015

Mr. Mike Glasgow
Utilities Administrator
City of Flint
4500 North Dort Highway
Flint, Michigan 48505

Dear Mr. Glasgow:

SUBJECT: Water Supply – City of Flint (City) – Corrosion Control Treatment Operation

The purpose of this letter is to outline additional requirements and recommendations regarding the additional corrosion control treatment measures being taken by the City water system.

The City has been purchasing drinking water from the Detroit Water and Sewerage Department (DWSD)/Great Lakes Water Authority (GLWA) since Friday, October 16, 2015. DWSD/GLWA provides corrosion control treatment to its water and DWSD/GLWA has been deemed by the Michigan Department of Environmental Quality (MDEQ) to have fully optimized corrosion control treatment. This optimization requires DWSD/GLWA to provide orthophosphate addition, maintain a minimum dose of 0.9 milligrams per liter (mg/L) as PO_4, and maintain a DWSD/GLWA plant tap residual of 0.8 mg/L as PO_4. As part of its optimization, DWSD/GLWA is also required to maintain a minimum pH of 7.0 at the DWSD/GLWA plant tap.

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Corrosion Control Treatment and Operation

To further enhance pipe passivation in the City water distribution system, customer service lines, and customer plumbing, **the City shall dose additional orthophosphate to increase distribution system phosphate residual to a minimum of 3.1 mg/L as PO_4 (1.0 mg/L as P).** The City has obtained a Michigan Safe Drinking Water Act, 1976 PA 399, as amended (Act 399), water system construction permit for the installation of this treatment equipment at Control Station 2 and Pump Station 4, construction permit number W151104, issued on October 28, 2015.

The City should also maintain a minimum pH level of 7.0 throughout the City's water distribution system. If pH levels of 7.0 or less are detected, the City shall immediately notify the MDEQ.

As part of the City water system operations, the City shall conduct:

- **Daily monitoring of incoming DWSD/GLWA water for pH and for orthophosphate residual, as PO_4**
- **Daily monitoring of additional orthophosphate dosage, as PO_4**
- **Daily monitoring of water entering the City distribution system for pH and for orthophosphate residual, as PO_4**

This information shall be included in the City's monthly operation report and shall be reported to the MDEQ as required under Administrative Rule 1502 (R 325.11502) of the administrative rules promulgated pursuant to Act 399.

Enhanced Water Quality Parameter Monitoring

The City's revised monitoring schedule dated October 22, 2015, requires quarterly Water Quality Parameter Monitoring at 25 sites throughout the City's water distribution system for temperature (Celcius), Conductivity (mS), pH, Total Alkalinity (mg/L as $CaCO_3$), Calcium (mg/L as Ca^{2+}), and orthophosphate (mg/L PO_4). Ten of these 25 sites are also used by the City to conduct required total coliform bacteria and chlorine residual monitoring (location numbers 1, 2, 3, 4, 5, 6, 7, 8, CS, and WS). **At these ten locations the City shall also conduct weekly monitoring for the following parameters at the same time that total coliform bacteria and chlorine residual monitoring is conducted to further assess water stability:**

- **Turbidity (NTU)**
- **Iron (mg/L)**
- **Orthophosphate (mg/L PO_4)**
- **pH**
- **Total Alkalinity (mg/L as $CaCO_3$)**
- **Calcium (mg/L as Ca^{2+})**
- **Chloride (mg/L as Cl^-)**
- **Temperature (Celcius)**
- **Conductivity (mS)**

If orthophosphate residual levels less than 3.1 mg/L as PO_4 (1.0 mg/L as P) are detected at any of these locations, then orthophosphate dosage shall be increased to achieve the minimum phosphate residual of 3.1 mg/L as PO_4 (1.0 mg/L as P) at all locations. In addition, if pH levels of 7.0 or less are detected at any of these locations, the City shall immediately notify the MDEQ.

Corrosion Control Treatment Test Loops

To further confirm the effectiveness of corrosion control treatment and the City's operations, it is recommended that the City construct, install, and monitor test loops of service line and plumbing materials. Instructions for construction, installation, and monitoring of these test loops can be obtained from the United States Environmental Protection Agency's (U.S. EPA) Office of Research and Development. The US. EPA has also offered to provide analytical services to support this effort [at no cost to the City of Flint?] [free of charge?]. Please contact Mr. Darren Lytle, Acting Branch Chief, at
512-569-7432 or lytle.darren@epa.gov.

Lead Service Line Verification Sampling

The City has been reviewing customer service connection records in order to confirm customer service line materials at each connection. The U.S. EPA has developed a sampling procedure that can be used to help verify the presence of lead service lines and it is recommended that the City conduct this sampling at a selection of customer locations for this purpose. Information regarding this verification sampling can also be obtained from Mr. Lytle. Any water analysis for lead and copper is expected to be completed by a certified lab. Alternatively, the City of Flint may wish to conduct this sampling in cooperation with the U.S. EPA, which has offered to provide analytical services for the LSL verification sampling [at no cost to the City of Flint?] [free of charge?].

DRAFT

Customer Household Exposure Assessment

The Michigan Department of Health and Human Services (MDHHS) is continuing to conduct blood lead level testing for children in the City. Families with children found to have elevated blood lead levels will be asked to have an elevated blood lead level investigation conducted at their residence that will include a lead exposure assessment, including the contribution of lead from water service lines and premise plumbing. This diagnostic testing is different than the first draw sampling being conducted by the City and should help further substantiate the effectiveness of corrosion control treatment. Any water analysis for lead and copper is expected to be completed by a certified lab. Alternatively, the City of Flint may wish to conduct the LSL sampling in cooperation with the U.S. EPA, which has offered to provide analytical services for the LSL sampling free of charge. It is also recommended that any additional research monitoring should be further evaluated by the City's Technical Advisory Committee prior to being conducted.

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The City is planning to change source water in the next year to raw water from Lake Huron purchased from the KWA. The City is required to evaluate the Flint Water Treatment Plant (WTP) processes related to optimization of corrosion control treatment using source water purchased from the KWA to determine if any adjustments are necessary. It is recognized that full scale testing at the Flint WTP may not be feasible. A report of this evaluation shall be provided to our office for review and approval prior to initiating service of this treated water to its customers.

If you have any questions regarding this correspondence, please contact me at the number below or at prysbym@michigan.gov.

Sincerely,

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cc: Mr. Brent Wright, City of Flint
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Genesee County Health Department
Dr. Linda Dykema, MDHHS
Mr. Jim Sygo, Chief Deputy Director, MDEQ
Mr. Stephen Busch, MDEQ
Mr. Adam Rosenthal, MDEQ

DRAFT

DRAFT

To: Poy, Thomas[poy.thomas@epa.gov]
From: Kaplan, Robert
Sent: Fri 10/30/2015 7:02:53 PM
Subject: FW: Urgent -- Task Force Review of Permit and Letter
Draft Flint CCT operation letter mdt.docx

Hi Tom,

As we discussed, I'm looking to you to give me a" go-no go" on comments today, as well as coalesce the comments into a single document for the Task Force.

- Bob

Robert Kaplan

Deputy Regional Administrator

U.S. EPA Region 5

Phone: (312) 886-1499

Cell: Personal Phone / Ex. 6

Fax: (312) 692-2075

From: Deltoral, Miguel
Sent: Friday, October 30, 2015 1:57 PM
To: Poy, Thomas <poy.thomas@epa.gov>
Cc: Kaplan, Robert <kaplan.robert@epa.gov>; Henry, Timothy <henry.timothy@epa.gov>; Schock, Michael <Schock.Michael@epa.gov>; Lytle, Darren <Lytle.Darren@epa.gov>; Kempic, Jeffrey <Kempic.Jeffrey@epa.gov>
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Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

From: Kaplan, Robert
Sent: Friday, October 30, 2015 12:48 PM
To: Poy, Thomas; Kempic, Jeffrey; Deltoral, Miguel; Henry, Timothy; Lytle, Darren; Schock, Michael
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To: Deltoral, Miguel[deltoral.miguel@epa.gov]
From: Kaplan, Robert
Sent: Fri 10/30/2015 7:06:55 PM
Subject: RE: Urgent -- Task Force Review of Permit and Letter

Thanks, Miguel. Can you give me a call on the phone when you get a chance? - Bob

Robert Kaplan

Deputy Regional Administrator

U.S. EPA Region 5

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From: Lytle, Darren
Sent: Fri 10/30/2015 7:08:19 PM
Subject: RE: Urgent -- Task Force Review of Permit and Letter

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Darren

Darren A. Lytle, Ph.D., P.E.

Branch Chief (Acting)

U.S. Environmental Protection Agency

26 West Martin Luther King Dr.

Cincinnati, Ohio 45268

Phone: (513) 569-7432

Fax: (513) 487-2543

email: lytle.darren@epa.gov

From: Deltoral, Miguel
Sent: Friday, October 30, 2015 2:57 PM
To: Poy, Thomas <poy.thomas@epa.gov>
Cc: Kaplan, Robert <kaplan.robert@epa.gov>; Henry, Timothy <henry.timothy@epa.gov>; Schock, Michael <Schock.Michael@epa.gov>; Lytle, Darren <Lytle.Darren@epa.gov>; Kempic, Jeffrey <Kempic.Jeffrey@epa.gov>
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From: Kempic, Jeffrey
Sent: Fri 10/30/2015 7:11:26 PM
Subject: RE: Urgent -- Task Force Review of Permit and Letter

Tom,

They have addressed my concerns based on their statement during our last call that all of the lead and copper samples will be analyzed by the State lab, since that it is the only way the State can pay for the analyses and that lab is a certified lab. I am assuming that since they did not specify certified labs for the pipe loop monitoring, that the Regional or ORD or uncertified University labs could be used to analyze those samples. I am not sure how long the State is committed to analyzing the samples, but they may want to allow themselves some flexibility on the certified lab requirement for the lead service line verification samples if Flint may continue to do these samples after the State's commitment ends.

The letter is vastly improved over the permit on the phosphate dosing units issue and does reflect the recommendations on the supplemental dose.

Let me know if you have any questions. Thanks.

Jeff

Jeffrey Kempic

Treatment Technology and Cost Team Leader

Standards and Risk Management Division

Phone: (202) 564-4880

From: Poy, Thomas
Sent: Friday, October 30, 2015 2:48 PM
To: Kempic, Jeffrey <Kempic.Jeffrey@epa.gov>; Deltoral, Miguel <deltoral.miguel@epa.gov>; Henry, Timothy <henry.timothy@epa.gov>; Lytle, Darren <Lytle.Darren@epa.gov>; Schock, Michael <Schock.Michael@epa.gov>
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Chief, Ground Water and Drinking Water Branch

USEPA - Region 5

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Cc: Kaplan, Robert[kaplan.robert@epa.gov]; Henry, Timothy[henry.timothy@epa.gov]; Schock, Michael[Schock.Michael@epa.gov]; Kempic, Jeffrey[Kempic.Jeffrey@epa.gov]
From: Deltoral, Miguel
Sent: Fri 10/30/2015 7:26:05 PM
Subject: Re: Urgent -- Task Force Review of Permit and Letter

Hi Darren

I was referring to the CRL here for the analytical support. Our lab folks said they could provide whatever support was needed for Flint (Pb, Cu, other) and in discussions with Mike, it seemed that was what he really preferred because our lab can analyze for other parameters that we like will not get if they use another lab.

All - Just as a couple of examples of the value added...the samples from the Citizen name / Ex. 6 home included parameters that are not normally ever tested for (Aluminum, Phosphate, Zinc, and more) and analyzing that data showed strong correlations among certain parameters that was instrumental in helping us determine that the source of the high lead was dislodged scale from the pipes. Data from similar analyses of particulate lead found in the aerators in some homes also showed this same Pb/Al/P correlation, indicating once again that the lead-bearing scale is the source. We ran other parameters as well and the absence of some of the other constituents can be just as valuable as the presence of the ones that are found. We would lose a lot of information without that. This would be a good opportunity to show folks the value of doing this for future use.

Miguel A. Del Toral
Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

From: Lytle, Darren
Sent: Friday, October 30, 2015 02:08 PM
To: Deltoral, Miguel; Poy, Thomas
Cc: Kaplan, Robert; Henry, Timothy; Schock, Michael; Kempic, Jeffrey
Subject: RE: Urgent -- Task Force Review of Permit and Letter

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Cc: Kaplan, Robert <kaplan.robert@epa.gov>; Henry, Timothy <henry.timothy@epa.gov>; Schock, Michael <Schock.Michael@epa.gov>; Lytle, Darren <Lytle.Darren@epa.gov>; Kempic, Jeffrey <Kempic.Jeffrey@epa.gov>
Subject: Re: Urgent -- Task Force Review of Permit and Letter
Importance: High

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Miguel A. Del Toral

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77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

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To: Poy, Thomas; Kempic, Jeffrey; Deltoral, Miguel; Henry, Timothy; Lytle, Darren; Schock, Michael
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U.S. EPA Region 5

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Cell: Personal Phone / Ex. 6

Fax: (312) 692-2075

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From: Lytle, Darren
Sent: Fri 10/30/2015 7:27:39 PM
Subject: RE: Urgent -- Task Force Review of Permit and Letter

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Branch Chief (Acting)

U.S. Environmental Protection Agency

26 West Martin Luther King Dr.

Cincinnati, Ohio 45268

Phone: (513) 569-7432

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email: lytle.darren@epa.gov

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Fax: (513) 487-2543

email: lytle.darren@epa.gov

From: Deltoral, Miguel
Sent: Friday, October 30, 2015 2:57 PM
To: Poy, Thomas <poy.thomas@epa.gov>
Cc: Kaplan, Robert <kaplan.robert@epa.gov>; Henry, Timothy <henry.timothy@epa.gov>; Schock, Michael <Schock.Michael@epa.gov>; Lytle, Darren <Lytle.Darren@epa.gov>; Kempic, Jeffrey <Kempic.Jeffrey@epa.gov>
Subject: Re: Urgent -- Task Force Review of Permit and Letter
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Phone: (312) 886-5253

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Sent: Fri 10/30/2015 7:46:36 PM
Subject: RE: Urgent -- Task Force Review of Permit and Letter

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Cc: Kaplan, Robert; Henry, Timothy; Schock, Michael; Kempic, Jeffrey
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From: Deltoral, Miguel
Sent: Fri 10/30/2015 7:50:09 PM
Subject: Re: Urgent -- Task Force Review of Permit and Letter

From past conversations, I think the State wanted all of the sampling to be done by certified labs, regardless. They said the same on the school sampling, none of which is compliance sampling since they are not regulated PWSs. I think they are just looking for certainty in the validity of the results.

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Cell: Personal Phone / Ex. 6 [redacted]

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To: Poy, Thomas[poy.thomas@epa.gov]
From: Kempic, Jeffrey
Sent: Fri 10/30/2015 8:11:51 PM
Subject: RE: Urgent -- Task Force Review of Permit and Letter

Tom,

Thanks. I agree that the first draw in a sequence will likely meet the criteria for inclusion in the 90th percentile and should be done by a certified lab. The term "compliance" can lead to the misinterpretation that the action level is the compliance level for Flint and that was my concern.

Jeff

Jeffrey Kempic

Treatment Technology and Cost Team Leader

Standards and Risk Management Division

Phone: (202) 564-4880

From: Poy, Thomas
Sent: Friday, October 30, 2015 4:06 PM
To: Kempic, Jeffrey <Kempic.Jeffrey@epa.gov>
Subject: RE: Urgent -- Task Force Review of Permit and Letter

Jeff: I was just thinking that the first liter of a sequential set could meet the criteria for a sample that needs to be included in 90th percentile calculations. I will send out other language.

Tom

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From: Poy, Thomas
Sent: Fri 10/30/2015 8:12:13 PM
Subject: RE: Urgent -- Task Force Review of Permit and Letter
Draft Flint CCT operation letter tpedits.docx

How's this?

Jeff: I left the certified language in the customer household portion since it's still a true statement that compliance samples must be analyzed by certified labs.

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Darren A. Lytle, Ph.D., P.E.

Branch Chief (Acting)

U.S. Environmental Protection Agency

26 West Martin Luther King Dr.

Cincinnati, Ohio 45268

Phone: (513) 569-7432

Fax: (513) 487-2543

email: lytle.darren@epa.gov

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Darren A. Lytle, Ph.D., P.E.

Branch Chief (Acting)

U.S. Environmental Protection Agency

26 West Martin Luther King Dr.

Cincinnati, Ohio 45268

Phone: (513) 569-7432

Fax: (513) 487-2543

email: lytle.darren@epa.gov

From: Deltoral, Miguel
Sent: Friday, October 30, 2015 2:57 PM
To: Poy, Thomas <poy.thomas@epa.gov>
Cc: Kaplan, Robert <kaplan.robert@epa.gov>; Henry, Timothy <henry.timothy@epa.gov>; Schock, Michael <Schock.Michael@epa.gov>; Lytle, Darren <Lytle.Darren@epa.gov>; Kempic, Jeffrey <Kempic.Jeffrey@epa.gov>
Subject: Re: Urgent -- Task Force Review of Permit and Letter
Importance: High

My comments...

As we would be relying on ORD for their technical review of any data, I will defer to ORD as far the parametric data they need. On the rest of the letter...I thought we had resolved the 'certified lab' issue but I see they still include that statement which I don't understand. Did I miss something? Some additional suggested edits as well.

Miguel A. Del Toral

Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604

Phone: (312) 886-5253

From: Kaplan, Robert
Sent: Friday, October 30, 2015 12:48 PM
To: Poy, Thomas; Kempic, Jeffrey; Deltoral, Miguel; Henry, Timothy; Lytle, Darren; Schock, Michael
Subject: Urgent -- Task Force Review of Permit and Letter

Task Force,

Attached is MDEQ's draft corrosion control letter to Flint to accompany the permit I sent around yesterday.

Two things – First, MDEQ tells me that this letter will be enforceable via a state reg, as if part of the permit. Second, MDEQ tells me that the letter takes account of our feedback to date, including the units issue raised concerning the permit yesterday.

Please review. DEQ intends to send this letter today. While it would be good to accommodate that schedule, we *do not want to rush or otherwise cut off any necessary EPA review.* Please let me know your thoughts, **including whether the time constraints on the review are feasible or not**.

Thanks, all.

- Bob

Robert Kaplan

Deputy Regional Administrator

U.S. EPA Region 5

Phone: (312) 886-1499

Cell: Personal Phone / Ex. 6

Fax: (312) 692-2075

To: Kempic, Jeffrey[Kempic.Jeffrey@epa.gov]; Schock, Michael[Schock.Michael@epa.gov]; Lytle, Darren[Lytle.Darren@epa.gov]; Deltoral, Miguel[deltoral.miguel@epa.gov]; Timothy Henry[Henry.Timothy@epa.gov]; Poy, Thomas[poy.thomas@epa.gov]
From: Kaplan, Robert
Sent: Fri 10/30/2015 10:23:25 PM
Subject: FW: EPA Task Force comments on letter sending Flint Corrosion Control Permit
Flint CCT Operation Letter 10-30-15.pdf

Task Force:

Please see the attached final letter sent today by MDEQ. Please see the exchange below as well.

Many thanks for your quick turnaround today, and thanks particularly to Tom for consolidating the comments into the edited letter.

- Bob

Robert Kaplan

Deputy Regional Administrator

U.S. EPA Region 5

Phone: (312) 886-1499

Cell: Personal Phone / Ex. 6

Fax: (312) 692-2075

From: Sygo, Jim (DEQ) [mailto:SygoJ@michigan.gov]
Sent: Friday, October 30, 2015 4:36 PM
To: Kaplan, Robert <kaplan.robert@epa.gov>
Subject: RE: EPA Task Force comments on letter sending Flint Corrosion Control Permit

Bob,

Thanks for the edits. Attached is a copy of the letter sent to the City of Flint today. We have made some minor edits but did emphasize that EPA is available for doing analysis and that a certified lab must analyze any sample that will be used tin the calculation of the 90 percentile of the Lead/Copper rule. We also added the additional point for sampling beyond the ten identifies.

Thanks for your assistance and your quick turn around.

DEQ will be sampling 2 more schools on Saturday as we discussed earlier in the week. Plumbing assessments were completed today.

From: Kaplan, Robert [mailto:kaplan.robert@epa.gov]
Sent: Friday, October 30, 2015 4:26 PM
To: Sygo, Jim (DEQ)
Subject: EPA Task Force comments on letter sending Flint Corrosion Control Permit

Jim,

On behalf of the Task Force, thank you for sending us the corrosion control plan letter this morning for our review. Attached please find EPA's edits to that letter. We also understand that MDEQ will issue an amended permit shortly to take account of the Task Force's comments sent to you today.

EPA encourages the City to take advantage of our offer for analytical support as our laboratory can analyze for a more robust set of parameters. The presence or absence of these additional parameters has provided valuable information and insights in past efforts on identifying potential sources of lead.

The Task Force believes Flint should implement the additional corrosion control treatment as soon as possible. The letter and amended permit are an important step in making sure additional corrosion control takes place quickly and appropriately.

- Bob

Robert Kaplan

Deputy Regional Administrator

U.S. EPA Region 5

Phone: (312) 886-1499

Cell: Personal Phone / Ex. 6

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STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY
LANSING DISTRICT OFFICE

RICK SNYDER
GOVERNOR

DAN WYANT
DIRECTOR

October 30, 2015

VIA E-MAIL and U.S. MAIL

Mr. Mike Glasgow
Utilities Administrator
City of Flint
4500 North Dort Highway
Flint, Michigan 48505

Dear Mr. Glasgow:

SUBJECT: Water Supply – City of Flint (City) – Corrosion Control Treatment Operation

The purpose of this letter is to outline additional requirements and recommendations regarding the additional corrosion control treatment measures being taken by the City water system.

The City has been purchasing drinking water from the Detroit Water and Sewerage Department (DWSD)/Great Lakes Water Authority (GLWA) since Friday, October 16, 2015. DWSD/GLWA provides corrosion control treatment to its water and DWSD/GLWA has been deemed by the Michigan Department of Environmental Quality (MDEQ) to have fully optimized corrosion control treatment. This optimization requires DWSD/GLWA to provide orthophosphate addition, maintain a minimum dose of 0.9 milligrams per liter (mg/L) as PO_4, and maintain a DWSD/GLWA plant tap residual of 0.8 mg/L as PO_4. As part of its optimization, DWSD/GLWA is also required to maintain a minimum pH of 7.0 at the DWSD/GLWA plant tap.

Corrosion Control Treatment and Operation

To further enhance pipe passivation in the City water distribution system, customer service lines, and customer plumbing, **the City shall dose additional orthophosphate to increase distribution system phosphate residual to a minimum of 3.1 mg/L as PO_4 (1.0 mg/L as P).** The City has obtained a Michigan Safe Drinking Water Act, 1976 PA 399, as amended (Act 399), water system construction permit for the installation of this treatment equipment at Control Station 2 and Pump Station 4, construction permit number W151104, issued on October 28, 2015.

The City should also maintain a minimum pH level of 7.0 throughout the City's water distribution system. If pH levels of 7.0 or less are detected, the City shall immediately notify the MDEQ.

As part of the City water system operations, the City shall conduct:

- **Daily monitoring of incoming DWSD/GLWA water for pH and for orthophosphate residual, as PO_4**
- **Daily monitoring of additional orthophosphate dosage, as PO_4**
- **Daily monitoring of water entering the City distribution system for pH and for orthophosphate residual, as PO_4**

This information shall be included in the City's monthly operation report and shall be reported to the MDEQ as required under Administrative Rule 1502 (R 325.11502) of the administrative rules promulgated pursuant to Act 399.

Enhanced Water Quality Parameter Monitoring

The City's revised monitoring schedule dated October 22, 2015, requires quarterly Water Quality Parameter Monitoring at 25 sites throughout the City's water distribution system for temperature (Celcius), Conductivity (mS), pH, Total Alkalinity (mg/L as $CaCO_3$), Calcium (mg/L as Ca^{2+}), and orthophosphate (mg/L PO_4). Ten of these 25 sites are also used by the City to conduct required total coliform bacteria and chlorine residual monitoring (location numbers 1, 2, 3, 4, 5, 6, 7, 8, CS, and WS). **At these ten locations, the City shall also conduct weekly monitoring for the following parameters at the same time that total coliform bacteria and chlorine residual monitoring is conducted to further assess water stability:**

- **Turbidity (NTU)**
- **Iron (mg/L)**
- **Orthophosphate (mg/L PO_4)**
- **pH**
- **Total Alkalinity (mg/L as $CaCO_3$)**
- **Calcium (mg/L as Ca^{2+})**
- **Chloride (mg/L as Cl^-)**
- **Temperature (Celcius)**
- **Conductivity (mS)**

In addition to the 10 locations, the entry point to the distribution system should be one of the locations for enhanced water quality parameter monitoring.

If orthophosphate residual levels less than 3.1 mg/L as PO_4 (1.0 mg/L as P) are detected at any of these locations, then orthophosphate dosage shall be increased to achieve the minimum phosphate residual of 3.1 mg/L as PO_4 (1.0 mg/L as P) at all locations. In addition, if pH levels of 7.0 or less are detected at any of these locations, the City shall immediately notify the MDEQ.

Corrosion Control Treatment Test Loops

To further confirm the effectiveness of corrosion control treatment and the City's operations, it is recommended that the City construct, install, and monitor test loops of service line and plumbing materials. Instructions for construction, installation, and monitoring of these test loops can be obtained from the United States Environmental Protection Agency's (U.S. EPA) Office of Research and Development. The U.S. EPA has also offered to provide analytical services to support this investigative effort. Please contact Mr. Darren Lytle, Acting Branch Chief, at 512-569-7432 or lytle.darren@epa.gov.

Lead Service Line Verification Sampling

The City has been reviewing customer service connection records in order to confirm customer service line materials at each connection. The U.S. EPA has developed a sampling procedure that can be used to help verify the presence of lead service lines and it is recommended that the City conduct this sampling at a selection of customer locations for this purpose. Information regarding this verification sampling can also be obtained from Mr. Lytle. Any water analysis for samples meeting the criteria for inclusion in the 90th percentile calculation for lead and copper compliance must be completed by a certified laboratory.

Customer Household Exposure Assessment

The Michigan Department of Health and Human Services (MDHHS) is continuing to conduct blood lead level testing for children in the City. Families with children found to have elevated blood lead levels will be asked to have an elevated blood lead level investigation conducted at their residence that will include a lead exposure assessment, including the contribution of lead from water service lines and premise plumbing. This diagnostic testing is different than the first draw sampling being conducted by the City and should help further substantiate the effectiveness of corrosion control treatment. Any water analysis samples meeting the criteria for inclusion in the 90th percentile calculation for compliance purposes for lead and copper must be completed by a certified laboratory.

Flint Water Treatment Plant Evaluation of Karegnondi Water Authority (KWA) Raw Water

The City is planning to change source water in the next year to raw water from Lake Huron purchased from the KWA. The City is required to evaluate the Flint Water Treatment Plant (WTP) processes related to optimization of corrosion control treatment using source water purchased from the KWA to determine if any adjustments are necessary. It is recognized that full scale testing at the Flint WTP may not be feasible. A report of this evaluation shall be provided to our office for review and approval prior to initiating service of this treated water to its customers.

If you have any questions regarding this correspondence, please contact me at the number below or at prysbym@michigan.gov.

Sincerely,

Michael Prysby

Michael F. Prysby, P.E.
District Engineer
Field Operations Section
Office of Drinking Water and
Municipal Assistance
517-290-8817

cc: Mr. Brent Wright, City of Flint
Mr. Howard Croft, City of Flint
Ms. Natasha Henderson, City of Flint
Mr. Darren Lytle, U.S. EPA
Mr. Samir F. Matta, P.E., Lockwood, Andrews & Newnam, Inc.
Mr. Warren Green, Lockwood, Andrews & Newnam, Inc.
Mr. James Henry, Genesee County Health Department
Dr. Linda Dykema, MDHHS
Mr. Jim Sygo, Chief Deputy Director, MDEQ
Mr. Stephen Busch, MDEQ
Mr. Adam Rosenthal, MDEQ

To: Hedman, Susan[hedman.susan@epa.gov]; Kaplan, Robert[kaplan.robert@epa.gov]; Nelson, Leverett[nelson.leverett@epa.gov]
Cc: Hyde, Tinka[hyde.tinka@epa.gov]
From: Deamer, Eileen
Sent: Sun 11/1/2015 10:26:37 PM
Subject: Fwd: Update on Flint Corrosion Control

Eileen Deamer
(312) 886-1728

Begin forwarded message:

> **From:** "Deamer, Eileen" <deamer.eileen@epa.gov>
> **Date:** October 30, 2015 at 5:10:05 PM CDT
> **To:** "jordan.dickinson@mail.house.gov" <jordan.dickinson@mail.house.gov>, "Hovey, Amy" <Amy.Hovey@mail.house.gov>
> **Cc:** "Fortin, Denise" <Fortin.Denise@epa.gov>, "Beckmann, Ronna Erin" <beckmann.ronna@epa.gov>, "Davis, CatherineM" <Davis.CatherineM@epa.gov>, "Distefano, Nichole" <DiStefano.Nichole@epa.gov>, "Asher, Jonathan" <Asher.Jonathan@epa.gov>
> **Subject: Update on Flint Corrosion Control**
>
> Hello – The Regional Administrator asked me to reach out to you to let you know that the necessary permit and specification letter have been issued by MDEQ which authorize the City of Flint to implement additional corrosion control. The EPA Task Force reviewed and commented on both the permit and letter.
>
> We will continue to keep you posted.
>
> Thanks,
>
> Eileen

To: Kelley, Jeff[kelley.jeff@epa.gov]; Hedman, Susan[hedman.susan@epa.gov]; Kaplan, Robert[kaplan.robert@epa.gov]; Hyde, Tinka[hyde.tinka@epa.gov]
Cc: Rowan, Anne[rowan.anne@epa.gov]; Beckmann, Ronna Erin[beckmann.ronna@epa.gov]; Harrison, Melissa[Harrison.Melissa@epa.gov]; Abrams, Dan[Abrams.Dan@epa.gov]; Poy, Thomas[poy.thomas@epa.gov]; Fortin, Denise[Fortin.Denise@epa.gov]; Deamer, Eileen[deamer.eileen@epa.gov]; Singer, Joshua[Singer.Joshua@epa.gov]; Arcaute, Francisco[Arcaute.Francisco@epa.gov]; Peterson, John[peterson.john@epa.gov]; Loop, Travis[Loop.Travis@epa.gov]; Purchia, Liz[Purchia.Liz@epa.gov]; Allen, Laura[Allen.Laura@epa.gov]; Henry, Timothy[henry.timothy@epa.gov]
From: Cassell, Peter
Sent: Mon 11/2/2015 4:11:53 PM
Subject: Flint News Clips Updated for Nov 2

FLINT DRINKING WATER CLIPS

US. EPA Region 5 – as prepared by Peter Cassell *(ORA/OEC/PA)* On Nov. 2

- □□□□□□□□ Letters to be sent to Flint parents with information on lead testing (MLive)
- □□□□□□□□ Health officials to issue guidelines on lead exposure to families in Flint (AP)
- □□□□□□□□ Michigan DEQ audit expanded to include Flint water response (MLive)
- □□□□□□□□ Flint water crisis — can it happen here? (Tricounty Times)
- □□□□□□□□ Safe to drink? Livingston faces own water issues (Livingston Daily)
- □□□□□□□□ Some Adrian families at risk for lead poisoning (Lenconnect.com)
- □□□□□□□□ Drinking water tests come back safe at Capac, Marysville (Times Herald)

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http://www.mlive.com/news/flint/index.ssf/2015/10/letters_to_be_sent_to_flint_pa.html

By Amanda Emery | aemery@mlive.com
Follow on Twitter
on October 31, 2015 at 4:00 PM, updated October 31, 2015 at 4:01 PM

FLINT, MI -- In a joint effort to inform the community about lead exposure, the Genesee County Health Department and Michigan Department of Health and Human Services will be sending letters to parents.

The letters to be sent out next week will provide parents with information regarding lead testing, how to reduce lead exposure, where lead comes from, as well as other useful information. Children cane be exposed to lead from drinking water in lead pipes, old lead paint, soil, pottery, cosmetics, toys, and some household remedies, according to a joint news release from the GCHD and MDHHHS.

Adult jobs and hobbies -- like auto repair, stained glass and jewelry making, and ammunition handling can also put children at risk if they touch clothing or play in areas where lead is found, according to the release.

Following results that showed elevated blood lead levels for some Flint children, the GCHD and MDHHHS have worked together to develop guidance for families.

Routine lead testing should be part of a well-child visit at ages one and two, according to the release.

"This is a good time to check with your healthcare provider to make certain your child has been tested at the recommended times and if not have the test performed." said Dr. Gary Johnson, Medical Director at the Genesee County Health Department in a statement.

The GCHD and MDHHHS are issuing the following recommendations for parents:

Families who live in the city of Flint and are on the Flint water system or who attend school, childcare, or spend time with a caregiver in the city, are encouraged to get their children tested for lead poisoning at their doctor's office or the GCHD.

Families can get their water tested for lead for free by calling 810-787-6537 for details.

Families are encouraged to use an NSF Certified water filter in their home. Free filters are still available. Call 211 for information about where to pick up a free filter.

Run only cold water through the filter.

Use filtered or bottled water for drinking -- including making coffee, drink mixes, juice, and baby formula -- and cooking. Even if people boil water, the lead will stay in the water and food.

People can use unfiltered tap water for washing your hands and dishes. If people must use unfiltered water for drinking or cooking, run the tap for five minutes before using the tap water.

Safe cleaning can also reduce risk of lead exposure in homes. People can use unfiltered tap water to wipe down counter tops, mop floors, and wash clothes.

Keep children away from lead paint and dust. Use wet paper towels to clean up lead dust around windows, play areas and floors. Wash hands and toys often using soap and water.

Lastly, always was fruits with filtered water. Some foods help keep lead from being stored in the child's body, such as calcium rich foods, iron rich foods, and foods with vitamin C.

The GCHD and MDHHHS plan to continue to provide information to the community regarding lead exposure and protecting the health of residents, according to the release. For more information click here.

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http://www.clickondetroit.com/news/health-officials-to-issue-guidelines-on-lead-exposure-to-families-in-flint/36199214

Children can be exposed to lead from drinking water in lead pipes, old lead paint, soil, pottery, cosmetics, toys

Published On: Nov 02 2015 07:48:13 AM EST

FLINT, Mich. - Health officials have established guidelines for families on how they should respond to ongoing problems with the municipal water supply in Flint.

The Genesee County Health Department and the Michigan Department of Health and Human Services plan to send letters to parents this week with information regarding lead testing and how to reduce lead exposure after elevated blood lead levels were found in some Flint children.

Children can be exposed to lead from drinking water in lead pipes, old lead paint, soil, pottery, cosmetics, toys, some home remedies and adult jobs or hobbies, including auto repair, stained glass and jewelry making.

The departments recommend children between the ages of 1 and 2 undergo lead testing during routine doctor visits.

They also suggest using filtered water for drinking, cooking and washing fruits.

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http://www.mlive.com/lansing-news/index.ssf/2015/10/michigan_deq_audit_expanded_to.html

By Jonathan Oosting | joosting@mlive.com
on October 30, 2015 at 9:26 AM, updated October 30, 2015 at 9:34 AM

LANSING, MI — Michigan Auditor General Doug Ringler is expanding an ongoing review of the Department of Environmental Quality's water division to include response protocols related to lead contamination in Flint drinking water.

The expansion comes two weeks after a request by Senate Minority Leader Jim Ananich, D-Flint.

"The Flint water crisis was mishandled by experts from the beginning and it's inexcusable," Ananich said in a statement announcing the request earlier this month. "This audit can help answer questions and inform the independent and legislative review that is necessary."

DEQ Director Dan Wyant issued a written statement two weeks ago acknowledging the state had enforced the wrong federal standards for treating Flint River water for more than 17 months, failing to require that the city make it less corrosive.

Wyant attributed the mistake to "drinking water program staff" and replaced the head of the Office of Drinking Water and Municipal Assistance.

Ananich asked auditors to review how ODWMA ensures data it receives is accurate, what accountability measures are in place for staff who fail to follow data verification protocols or misrepresent information to the Environmental Protection Agency.

He also wants to know what policies the water office and DEQ have in place to "escalate major infractions" up the chain of command.

Auditor General Ringler, in a letter sent to Ananich this week, said he has assigned an audit team to address Ananich's questions. The audit report is expected to be released in late February of 2016.

Michigan Gov. Rick Snyder has appointed a task force to review the Flint water switch, which occurred while the city was under control of an emergency financial manager who has since denied culpability.

Ananich has also called for legislative hearings and is backing U.S. Rep. Dan Kildee's request for a federal probe.

Jonathan Oosting is a Capitol reporter for MLive Media Group. *Email him*, find him on *Facebook* or follow him on *Twitter*.

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http://www.tctimes.com/news/local_news/flint-water-crisis-can-it-happen-here/article_61b72326-7fd7-11e5-be75-1bc882d95345.html

Fenton administrators offer insight into safety of city drinking water

Posted: Saturday, October 31, 2015 9:57 am

Vera Hogan Staff Reporter

Weeks of daily news stories about the water crisis in the city of Flint have some local residents wondering, “Can it happen here?”

In order to keep Fenton residents informed and educated about the quality of city water, Fenton City Manager Lynn Markland, Department of Public Works Director Dan Czarnecki and Stephen Guy, water treatment facility superintendent, provided the following information.

The EPA issued the lead and copper rule in 1986 with implementation date of 1991. Lead that is in a domestic water supply can come from two different sources, corrosion of household plumbing systems, such as solder from pipe joints or from lead found in household fixtures, or erosion of natural deposits.

“According to our annual Water Quality Report, if present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children,” said Guy.

“Lead in drinking water is primarily from materials and components associated with service lines and home plumbing,” he added.

The city of Fenton is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components.

“When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to two minutes before using water for drinking or cooking,” Guy said.

“If you are concerned about lead in your water, you may wish to have your water tested,” he added.

Information on lead in drinking water, testing methods, and steps residents can take to minimize exposure is available from Safe Drinking Water Hotline or at www.epa.gov/safewater/lead.

Two components cause lead in drinking water. One is lead in piping materials and the other is corrosive water.

In the lead and copper rule, tier 1 sites are most likely to leach lead into the water. Single-family homes with lead-soldered copper piping constructed after 1982 are tier 1 sites.

The city of Fenton uses sites meeting these criteria as sample sites. These sites are sampled and tested every three years as required by the Michigan Department of Environmental Quality (MDEQ).

The test results are well below the action levels set by the rule and are published in the annual water quality report.

In the case of corrosive water, the city of Fenton uses corrosion control methods to make the water less corrosive.

Corrosive effects in a water system are usually from acidic conditions developing in a system. The city of Fenton raises the pH of its water during the softening process and sends the finished water out at elevated pH levels.

The operation is such that a stable water is produced by keeping a positive Langlier saturation index, which is an approximate indicator of the degree of saturation of calcium carbonate in water. A slightly positive index deposits calcium carbonate instead of leaching material from the pipe.

Also, a corrosion inhibiting Ortho-phosphate is fed to help coat the pipes to keep material from leaching from the pipes.

The best thing for a consumer to do to combat any potential material leached from pipes is to run the water for one or two minutes prior to using it for drinking or cooking.

“The infrastructure in Fenton is old but when the plant was built (2004), a lot of old pipes were replaced,” said Guy. “Also, during the recent and ongoing Streetscape project older water mains and sewers were replaced.”

Water mains do get sediments and rust build up inside them over time and it is possible for the water to pick this up. To combat this deposition and sediment the city flushes water mains every fall.

Presently, the city pumps water from four groundwater wells from between 70 and 100 feet deep and treats it by softening.

In 2013, the city conducted a search for new well sites to try to locate a source of water that was less hard than the current source, which would have made it more cost effective to treat with a potential softer finished product.

The city located three potential sites for wells beginning with the current well field but at a deeper location.

This was the most economical location but the water that was found was very low quality and of very little volume.

The second site was in the north end, but was dismissed due to the small size of the lot, and the difficulty and cost of bringing the pipe to the water plant.

The third site was at Silver Lake Park, but the cost of piping it to the present well field is excessive and the source is in the same underground aquifer.

“At present the well capacities are sufficient to meet demand without finding another source,” said Guy.

Wayne Peal, Livingston Daily 8:43 a.m. EST November 2, 2015

http://www.livingstondaily.com/story/news/2015/11/02/livingston-county-water-safety/74676916/

A Flint-style crisis appears remote, but other issues remain in Livingston County.

(Photo: Photo illustration by Gillis Benedict)

Story Highlights

Largest water providers meet EPA standards

Most Livingston residents get water from own wells

Turn on the tap, pour a glass of water and take a drink.

It's something thousands of Livingston County residents do thousands of times each day.

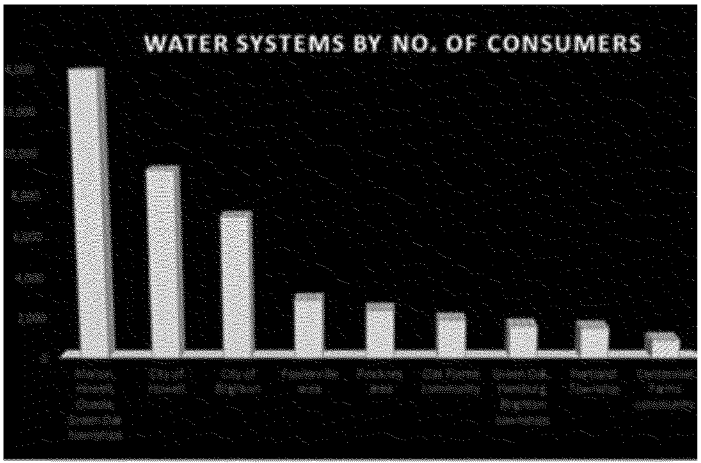
But is it safe?

That depends.

With the ongoing water safety crisis in Flint, less than 50 miles away, The Livingston Daily reviewed current water-quality reports for Livingston County's major municipal, private and multicommunity water systems.

The good news — all meet Environmental Protection Agency safety standards. That means chances for a widespread, Flint-like crisis are rare.

But major systems, those serving 1,000 or more customers, are less than half the local story. More than half of all county residents are on individual wells.



This chart shows the number of consumers per water system that serves 900 or more users.

Source: EPA

Source: EPA (Photo: Livingston Daily)

"I'd say it was at least 50 percent — it could be as high as 70 percent," county Environmental Health Director Matt Bolang said.

Those wells are subject to contamination from a variety of sources, including chemical and fertilizer runoff.

The county maintains records for each well and issues permits for new wells. Water treatment, though, is left up to the individual property owner.

Yet, the ongoing crisis in Flint shows that no one can take safe drinking water for granted.

Even though water from the county's largest providers is safe today, that fact doesn't mean county residents will never be at risk or that solutions will be quick in coming.

A lengthy battle to secure clean drinking water

Though it happened several decades ago, longtime customers of one local water authority recall their lengthy battle to secure clean drinking water.

“For about eight years, all we drank was bottled water.”

Kathy Carney, Fonda Island Briggs Lake Joint Water Authority chairwoman

Customers of the Fonda Island Briggs Lake Joint Water Authority, a private Brighton

Township-based system, wrangled for years with the state over water quality issues before the current system was created in 1983.

"For about eight years, all we drank was bottled water," current Chairwoman Kathy Carney recalled.

Still, the probability of a water crisis on a Flint-like scale appears remote.

Residents in Flint have been drinking water pulled from the Flint River with concerns being raised about lead content

"It 's not even like comparing apples and oranges — it's like apples and asparagus," said Howell City Manager Shea Charles whose city maintains the county's second-largest drinking-water system.

Flint's issues began last year when it switched — under a state-appointed administrator's recommendation — from the Detroit system to a source of its own, pulling drinking water from the Flint River.

The switch has been accompanied by concerns over increased lead content in city water, something that could cause health and mental issues, especially among the city's youngest residents.

"It looks like this was the state's fault," said state Sen. Joe Hune, R-Hamburg Township.

Hune last month began surveying Livingston County residents on suggested solutions, including whether the state should pay more than $9 million for Flint to return to the Detroit system.

That's something even fiscal hard-liner Hune is leaning toward.

"This is water, it's pretty basic," he said.

To take part in the survey, call 855-563-4863.

In terms of water sources, local systems are vastly different from either Flint's current system or the Detroit system. That is because Livingston County residents receive their water from underground wells.

Water at its source

"Our biggest source here is groundwater," Bolang said. "So, you don't get the kind of bacterial issues that you would get if you pulled from a lake or river."

Of course, Flint's issues involve more than just the quality of the water at its source.

Nationally recognized water-quality expert Marc Edwards told the Detroit Free Press that his own research showed untreated Flint River water caused the city's aging water pipes to corrode far more rapidly than the water being pumped in from Detroit.

That finding underscored concerns from residents and physicians about the high lead levels they had already suspected from the city's new water source.

Corrosion concerns have also surfaced locally.

"It's a constant issue for any system," Brighton utilities Director Tim Krugh said. But like other locals, Krugh said his system has taken steps to keep corrosion issues to a minimum.

System upgrades

Brighton's system, the county's third largest, dates from the 1930s. Historically, Howell's goes back all the way to the late 19th century.

In recent years, both cities have undertaken major upgrades.

Brighton conducted a system-wide overhaul in 2004, Krugh said. It also added three new wells from 1989-2001.

Over time, Brighton has also replaced "about 80 percent" of its original pipes, Krugh added.

Howell replaced the 50-year-old main line to its treatment facility in 2009.

TPlus, Howell also is continuing to upgrading its pipes under an ongoing program that also includes street repairs.

"What's called our street program is actually much more," Charles said. "We know we have some smaller pipes, but we've been getting after them."

The Marion, Howell, Oceola and Green Oak township water system — or MHOG — is the county's largest water supplier with more than 13,000 customers.

In all, EPA records reveal there are about 35 multiuser water systems currently serving Livingston County residents, including several with 100 customers or less. (That figure also doesn't include single-family wells.)

Latest reports for the 11 largest systems, all with 900 customers or more, showed each was in compliance with EPA water quality standards.

In addition to Howell, Brighton, Fonda Island Briggs Lake and MHOG, those systems also include Centennial Farms, Fowlerville, Hartland Township, the Livingston

Community Water Authority, Oak Pointe and Pinckney. Information for the private Hartland Meadows system wasn't immediately available.

Checking for contaminants

In addition to providing standards for inorganic contaminants such as lead and cooper, the EPA also sets acceptable maximum levels for a variety of other substances.

They include such inorganic contaminants as iron and arsenic, disinfectants like chlorine and radioactive contaminants like radium.

But those contaminants are not the only concern for local residents. New challenges to safe drinking water continue to emerge, both locally and nationally.

Their original battle long behind them, Fonda Island Briggs Lake residents are now concerned about fracking in their wellhead area.

In 2013, they sought a countywide resolution banning hydraulic fracking, a system involving injecting treated water into the earth to crack underground rocks, freeing oil and natural-gas deposits.

Fracking advocates say the process poses no danger.

"They say its safe — but it's our wellhead," Carney said.

At the same time, the U.S. Geological Survey has been tracking ground water levels at sites throughout the United States finding alarming drops in some areas, but not necessarily in Michigan.

A site tested in neighboring Washtenaw County showed that the water level had actually risen by about 1.5 feet from 2000-2012, a stark contract to levels in drought-stricken states like California.

Still, the fact that groundwater levels are decreasing anywhere in the United States shows water might not be a renewable resource in every case.

Plus,the ongoing crisis in Flint shows what can happen when we trifle with the water sources we do have.

Contact Livingston Daily reporter Wayne Peal at 517-548-7081 or *wpeal@gannett.com*. Follow him on Twitter @wpeal.

How does your system rate?

Livingston County water system customers should receive annual water quality reports from their provider.

A number of systems, including all municipal systems, also post their results online.

Reports for Livingston County's multicommunity systems are also available on member townships' websites.

By Lonnie Huhman
Daily Telegram Staff Writer

Posted Nov. 2, 2015 at 10:30 AM

ADRIAN - Over the next month, Lenawee County Health Department officials will be visiting homes around Adrian that have been pinpointed as having high risk for lead poisoning.

According to the Lenawee County Health Department, Adrian is one of 14 communities in Michigan that is considered high risk for lead poisoning. Between 2014 and this year, 917 children in Adrian were tested for elevated blood lead levels and 55 tested positive, requiring quick action to remedy the situation.

“Because the city of Adrian is listed as one of the 14 high-risk communities a grant has been received by us to provide educational services to pregnant women and children five and under that live in homes built before 1978,” said Raquel Ybarra, Lenawee County Health Department’s lead specialist, during a childhood lead poisoning prevention program last week.

Ybarra and co-presenter Renee Price said many of the homes at risk in Adrian are along East Maumee Street. Ybarra said if a home was built before 1978 and has children ages 6 or younger or a pregnant woman living there then one should consider having it tested. She added that anyone can have lead poisoning, but it’s these two groups that are highly susceptible.

“Exposure to dust from lead-based paint is the most common way to get lead poisoning,” Ybarra said.

She also said exposure to lead can come from soil and water, and also some pottery, imported products and toys.

Deidre Reed, director of nursing for the Lenawee County Health Department, said the risk of water-related lead exposure in Adrian is not quite a main concern like the situation in Flint. She explained how Flint’s water treatment plant didn’t add the right chemicals to the drinking water pumped from the Flint River, which caused more corrosive water to leach lead from the city’s aging pipes and into household drinking water. She said that issue has not occurred in Adrian.

According to the city of Adrian utilities department, the city's drinking water met and surpassed every federal and state requirement when it was tested in 2014.

However, Reed said there might be homes in Adrian which may have lead water pipes, which could cause some issues. The best remedy for that would be replacement, she said.

Ybarra said too much lead in a child's body can cause issues such as behavioral problems, learning difficulties and growth delays. She said sometimes symptoms of lead poisoning may be mistaken for other conditions, such as autism.

For a pregnant woman, too much lead in the body can cause a miscarriage and harm the brain, kidneys and nervous system of fetuses.

The next step in to address lead poisoning issues in Adrian will bring county health officials into affected neighborhoods.

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http://www.thetimesherald.com/story/news/local/2015/11/02/drinking-water-tests-come-back-safe-capac-marysville/74761110/

Syeda Ferguson, Times Herald 8:15 a.m. EST November 2, 2015

3 CONNECT 2 TWEETLINKEDINCOMMENTEMAILMORE

Independent results testing for lead in the drinking water at Capac Community Schools and Marysville Public Schools have come back safe.

Capac on Oct. 19 took water samples from its elementary, middle and high schools and from its central offices. Marysville also on Oct. 19 sampled the drinking water from 20 locations at its oldest facility, Washington Elementary School.

The two districts were among those across the state heeding a statewide call from the Michigan Department of Environmental Quality to consider testing the drinking water coming out of pipes within school buildings for lead levels, especially at older facilities. The urging came after unhealthy levels were discovered in Flint schools.

While municipal water authorities do monitor regularly water quality at various sites within their distribution systems, not all municipalities pull their samples from school buildings.

Brad Wurfel, MDEQ communications director, said the department continues to prioritize water samples sent in from school districts, and that it's not necessary for schools to test annually. He said districts with older facilities that have never tested should consider doing that at least once.

"What makes lead and copper different is it's not in the supply. It's in the fixtures," Wurfel said.

At Washington Elementary in Marysville, lead was detected in 13 of the 20 drinking water samples that were collected, according to a 23-page report from Troy-based Testing Engineers & Consultants, which handled the testing for Marysville.

However, none of the samples were in excess of the Environmental Protection Agency's maximum contaminant level for lead of 0.015 mg/L, the highest allowable contaminant level that is enforceable.

The highest reported lead level at Washington Elementary was found in a first draw sample taken from the building's kitchen vegetable sink, with a reported lead level of 0.014 mg/L. That amount was within the EPA's allowable limit.

Scott Chandler, manager of industrial hygiene services with Testing Engineers & Consultants, said the maximum contaminant level goal for lead is zero, but that can't be as readily enforced.

Capac collected samples using kits supplied by the St. Clair County Health Department and analyzed by the Michigan Department of Environmental Quality drinking water lab.

"Our drinking water tests for our buildings – elementary, middle, high, and central office – came back well within acceptable range. We do not have any lead concerns," Superintendent Stephen Bigelow said.

"Capac community water reports indicate high-quality drinking water, but we tested for lead because it is possible for lead to be present between the municipal supply and our buildings. The testing was done at the district's expense, and I expect to continue the process annually," Bigelow said in an email.

Wurfel said so far not many districts have taken up the initiative for independent testing.

"It's possible local schools are using other laboratory services, and we wouldn't know about them. What we're talking about here is non-regulatory sampling," he said.

Districts such as Algonac Community Schools are still considering whether to test.

"We are taking this very seriously," Superintendent John Strycker said. "I have met with administration, and we are in the process of developing a plan."

Dwayne Loper, water plant superintendent at St. Clair River Sewer and Water Authority, confirmed that testing is done regularly using samples pulled from Pine River Elementary and the administration building at East China School District. He said those two buildings are within their plant's water distribution system serving East China and China Township.

Kirk Grzelka, director of operations for East China School District, said water quality reports from the other municipalities that supply water to the district's other buildings are well within safe ranges.

“We're so far within the safe limits that it's not even close,” Grzelka said, adding that he could not be sure where the samples were taken.

Water authorities for the City of St. Clair and Marine City did not return phone calls.

Contact Syeda Ferguson at (810) 989-6276 or email her at syeda@thetimesherald.com. Follow her on Twitter @shossainfe.

###

To: Hedman, Susan[hedman.susan@epa.gov]; Kaplan, Robert[kaplan.robert@epa.gov]
Cc: Nelson, Leverett[nelson.leverett@epa.gov]; Rowan, Anne[rowan.anne@epa.gov]; Hyde, Tinka[hyde.tinka@epa.gov]; Deamer, Eileen[deamer.eileen@epa.gov]; Henry, Timothy[henry.timothy@epa.gov]; Fortin, Denise[Fortin.Denise@epa.gov]; Kelley, Jeff[kelley.jeff@epa.gov]
From: Cassell, Peter
Sent: Mon 11/2/2015 4:17:36 PM
Subject: FW: Flint Water question

We responded to the ACLU on July 14.

Pete Cassell
Press Officer
U.S. Environmental Protection Agency

---

77 West Jackson Blvd (P-19J)
Chicago, IL 60604-3590
Office (312) 886-6234
Mobile (312) 859-9614

From: Cassell, Peter
Sent: Tuesday, July 14, 2015 3:38 PM
To: Curt Guyette <cguyette@aclumich.org>; Cannon, Phillippa <Cannon.Phillippa@epa.gov>; Cannon, Phillippa <Cannon.Phillippa@epa.gov>; Singer, Joshua <Singer.Joshua@epa.gov>
Cc: Anne Rowan <Rowan.Anne@epa.gov>; Jeff Kelley (kelley.jeff@epa.gov) <kelley.jeff@epa.gov>
Subject: RE: Flint Water question

Mr. Guyette,

Below are responses to your questions and can be attributed to U.S. EPA.

Q. Mr. Del Toral asserts that a city the size of Flint is required to use a corrosion control treatment such as phosphate in their drinking water. Is Mr. Del Toral correct?

Flint and other large drinking water systems are required to evaluate and optimize pipe corrosion control treatment to protect water from contaminants such as lead. When the city started sourcing drinking water from the Flint River in April 2014, the Michigan Department of Environmental Quality determined that Flint should follow the protocol for new systems -- which requires two new rounds of water sampling to determine whether corrosion control treatment is needed. The city has submitted sampling results for the six-month periods from July-December 2014, and from January-June 2015. MDEQ is currently analyzing the sampling data to determine whether corrosion control treatment is needed.

Q. Also, both Mr. Del Toral, and Marc Edwards, an expert on the issue at Virginia Tech, both say that the manner in which Flint conducts its tests is almost certain to minimize the risk and miss worst-case scenarios. What is the EPA's opinion regarding that?

Michigan complies with the Federal Safe Drinking Water Act's protocol which requires that the tap remain unused for at least 6 hours before taking a sample. EPA is currently revising the federal lead and copper rule to address several issues including sampling protocols.

In addition, EPA notes that the water samples taken from the Citizen name / Ex. 6 residence were atypical in two ways:

- the tap had not been run for over three weeks before the samples were taken. Stagnation can cause higher lead levels, and

- the home's long service line is configured in an unusual way.

Pete Cassell
Press Officer

U.S. Environmental Protection Agency

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77 West Jackson Blvd (P-19J)
Chicago, IL 60604-3590
Office (312) 886-6234
Mobile [redacted] Personal Phone / Ex. 6

From: Curt Guyette [mailto:cguyette@aclumich.org]
Sent: Monday, July 13, 2015 9:12 AM
To: Cannon, Phillippa; Cannon, Phillippa; Cassell, Peter; Singer, Joshua
Subject: Flint Water question

I am following up on a June 24 memo written by Miguel Del Doral of the EPA's Region 5. In that memo, Mr. Del Toral asserts that a city the size of Flint is required to use a corrosion control treatment such as phosphate in their drinking water.

Is Mr. Del Toral correct?

Also, both Mr. Del Toral, and Marc Edwards, an expert on the issue at Virginia Tech, both say that the manner in which Flint conducts its tests is almost cdertain to minimize the risk and miss worst-case scenarios.

What is the EPA's opinion regarding that?

I can be reached by phone at (w) 313-578-6834 or © [redacted] Personal Phone / Ex. 6

Curt Guyette

To: Heather Shoven[Shoven.Heather@epa.gov]; Andrea Porter[Porter.Andrea@epa.gov]
From: Deltoral, Miguel
Sent: Mon 11/2/2015 5:06:38 PM
Subject: FW: Lead levels and Chloramine
Operational-Evaluation-Report.pdf

#5

Miguel A. Del Toral
Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

From: Porter, Andrea
Sent: Tuesday, April 7, 2015 03:42 PM
To: Crooks, Jennifer; Deltoral, Miguel
Cc: Poy, Thomas; Harris, Kimberly
Subject: RE: Lead levels and Chloramine

Hi All,

Here are a few excerpts from Flint's November 2014 OEL report (source = http://cityofflint.com/?p=6251):

"Stage 2 actions are to be implemented only if Stage 1 actions are ineffective in adequately reducing TTHM levels and therefore Stage 2 is
contingent upon the outcome of Stage 1."

"Stage 1 – Immediate Actions
☐ Hire ozone system manufacturer to troubleshoot ozone system
☐ Bench scale jar testing
o Match existing process and access possible areas of improvement
o Simulate potential modifications to treatment process
o Evaluate coagulation and flocculation polymer aid feeds to assist with TOC
removal
☐ WTP operational changes
o Discontinue softening bypass stream to reduce chlorine demand
o Disinfection of filter beds to reduce chlorine demand
o Possibly begin coagulation and flocculation polymer aid feeds to assist with
TOC removal depending on bench scale test results
☐ Increase water main flushing efforts to minimize stagnant water
☐ Water system modeling to identify areas with high water age and potential solutions
o Cedar Street Pump Station potential recirculation
o West Side Pump Station potential recirculation
o Storage tank volume use
o Possible broken closed valve locations
o Locations in need of flushing
o Lower high water levels in storage tanks"

"Stage 2 – Contingent Actions
☐ Fix ozone system
☐ Start feeding coagulation and flocculation polymer aids to lower TOC, if not
completed in Stage 1

☐ Convert to lime and soda ash softening
☐ Change disinfectant to chloramine or chlorine dioxide until KWA
☐ Install pre-oxidant feed at intake to optimize ozone disinfection
☐ Implement advanced treatment for THM precursor removal
☐ Increased main flushing based on water modeling results
☐ Continue valve replacements with water model assistance
☐ Emphasize cast iron pipes on water main replacement priority list"

I would think, based on the OEL, that everyone (State, public, etc.) should be aware that Flint is contemplating a switch to a different disinfectant, but only after they exhaust a slew of less drastic remedies for their DBP issues.

Hope that helps.

Thanks,
Andrea Porter

Environmental Engineer
Ground Water & Drinking Water Branch
U.S. EPA, Region 5 (WG-15J)
77 W. Jackson Blvd.
Chicago, IL 60604
Phone: 312-886-4427
Fax: 312-697-2656

From: Crooks, Jennifer
Sent: Tuesday, April 07, 2015 3:29 PM
To: Deltoral, Miguel
Cc: Poy, Thomas; Porter, Andrea; Harris, Kimberly
Subject: RE: Lead levels and Chloramine

Tom P and I met this morning to discuss various issues going on in MI, related to Flint. One topic that came up was the City's possible switchover to chloramines (this topic came up at a public meeting in Flint), and its possible effect on lead in the Flint drinking water, such as what happened in DC. We called Michael Wright to see if that recommendation came out of the Flint Technical Advisory committee. Mike had not heard that recommendation, but totally understood the overall ramifications on the system, that while the change over to chloramines would most likely decrease TTHMs, it also might detrimentally affect the lead levels at the tap. The State had not heard that Flint was contemplating this change over to chloramines, so Mike Prysby said he would check in with Flint.
Jen

From: Crooks, Jennifer
Sent: Tuesday, April 07, 2015 8:20 AM
To: Deltoral, Miguel
Cc: Thomas Poy
Subject: RE: Lead levels and Chloramine

Thank you, Miguel. This entire discussion is bringing this to the forefront of the disaster, as you say. I think we should discuss getting a group of experts together with Liane, too, at our April 28 lunch meeting.

Jen

From: Deltoral, Miguel
Sent: Tuesday, April 07, 2015 8:17 AM
To: Crooks, Jennifer
Cc: Porter, Andrea

Subject: Re: Lead levels and Chloramine

You can have Citizen name / Ex. 6 call me and I can explain Pb-IV, what happened in DC and why.

Miguel A. Del Toral
Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

From: Crooks, Jennifer
Sent: Monday, April 6, 2015 01:47 PM
To: Deltoral, Miguel
Cc: Porter, Andrea
Subject: RE: Lead levels and Chloramine

So, Andrea explained that the Pb-IV is the hard Pb lining that DC's pipes got from the years of over chlorinating. You said below that you don't think that Flint had any Pb-IV, so Flint will probably not have the lead issues that DC had. But, as you said, any significant changes in the water chemistry, can cause a wealth of problems.
Jen

From: Deltoral, Miguel
Sent: Friday, April 03, 2015 4:44 PM
To: Crooks, Jennifer
Cc: Poy, Thomas; Harris, Kimberly; Schock, Michael; Porter, Andrea
Subject: Re: Lead levels and Chloramine

I seriously doubt that they have any Pb-IV in Flint, but anytime you make the significant and it seems iterative changes to the water chemistry, you are asking for trouble. I think we are going to need to think real hard about including mandatory OCCT studies and mandatory increased monitoring for at least some treatment changes.

Miguel A. Del Toral
Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

From: Crooks, Jennifer
Sent: Thursday, April 2, 2015 09:13 AM
To: Deltoral, Miguel
Cc: Poy, Thomas; Harris, Kimberly
Subject: Lead levels and Chloramine

Miguel—In light of the possibility of Flint going to chloramine use, Citizen name / Ex. 6 brought up a significant comparison to the DC lead fiasco. What will lead levels look like after the switchover to chloramines, since there are lead service lines in Flint? She cites from the CDC research study below. Specifically, this paragraph:

“Changes in water treatment and disinfection practices can substantially undermine lead corrosion control (60). In the mid-1990s in the District of Columbia (DC), high levels of free chlorine were used to decrease coliform bacteria in water, a process that inadvertently changed the type of lead mineral coating in the water lines to one with very low solubility in the background pH of the DC drinking water. When the free chlorine was replaced with chloramines, the transformed highly insoluble lead scale minerals were no longer stable and dissolved. Therefore, a substantial level of lead was released from the lead service lines into drinking water at the tap (61). CDC reviewed the relationship between BLLs in children, the presence of a lead service line, and water disinfection practices in DC during 1998–2006 (62). The study reported that the presence of a lead service line was associated with higher BLLs in children. This relationship was most pronounced during 2001 through June 2004, when chloramines were used to disinfect the drinking water without adequate corrosion control (62). An observational study in which the BLLs of children were matched to population-based data of water lead levels during periods when water disinfection practices changed in DC concluded that the increase in water lead levels was associated with an increase in the BLLs of children (63). In a study in Wayne County, North Carolina, a unified geographic information system was used to link BLLs with water service lines made with or without lead. The use of chloramines in water predicted higher water lead levels and BLLs, controlling for well-established, known predictors of BLL (44).”

From: Citizen name / Ex. 6 Citizen name / Ex. 6
Sent: Wednesday, April 01, 2015 10:23 PM
To: Crooks, Jennifer
Subject: Lead and Chloramine

Ms. Crooks,
I know I already sent you an email but during further research I discovered this. I thought is was something that should be seen with the recent recommendations of Chloramine possibly being added as a solution.
http://www.cdc.gov/mmwr/preview/mmwrhtml/su6104a1.htm?s_cid=su6104a1_w
LCR And Control Measures Sections, 4th paragraph down. This is my concern with the new chemicals the city wants approval for. What happens to the other citizens who do not know they have an elevated lead content or for the ones who have already tested with elevated levels? I know one of the other levels was 37, that was the highest the city had seen before my levels, what will it look like when Chloramine is added?
Thank you
Citizen name / Ex. 6

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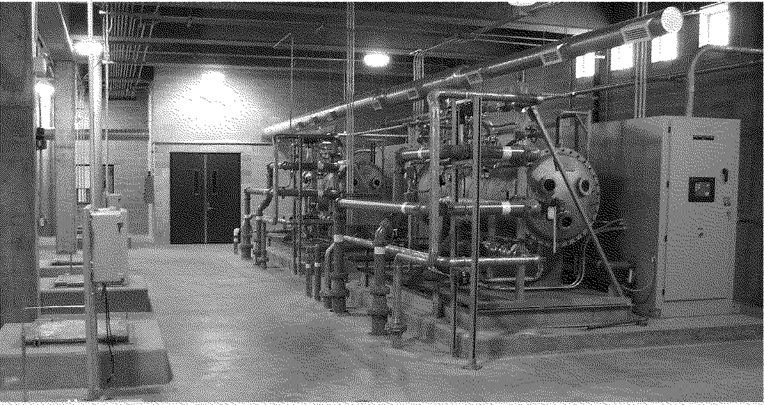
Operational Evaluation Report

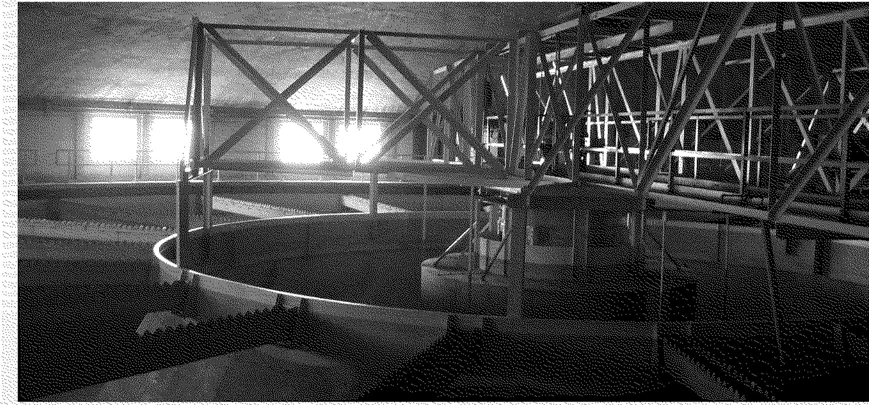
City of Flint

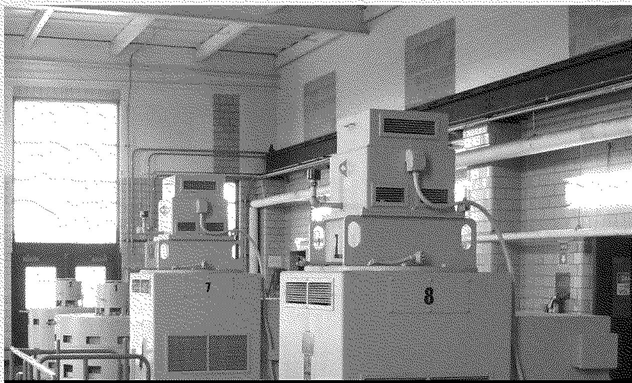
1855

Trihalomethane Formation Concern

November 2014







Lockwood, Andrews
& Newnam, Inc.
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CITY OF FLINT
Operational Evaluation Report
November 26, 2014

EXECUTIVE SUMMARY

Environmental Protection Agency (EPA) and Michigan Department of Environmental Quality (MDEQ) regulations require that public water suppliers test drinking water quarterly throughout the distribution system for disinfectant by-products (DBP's). Two categories of DBP's, tri-halomethanes (THM) and halo-acetic acids (HAA5), are regulated and must be tested for. The City of Flint began operation of their water treatment plant (WTP) full time with the Flint River as the source on April 25, 2014. Since that time, two quarters of samples taken indicate that future violations are inevitable for total THM without some modifications to the water system. In response, the City hired Lockwood, Andrews & Newnam, Inc. (LAN) to complete this Operational Evaluation Report (OER) in conformance with EPA guidelines with the goal to determine the cause(s) of high levels of THM and evaluate possible solutions.

The EPA promulgated the Stage 2 Disinfectants and Disinfection By-Products Rule (DBPR) in January 2006 which set maximum contaminant levels (MCLs) for total trihalomethanes (TTHM) and HAA5 based on an annual running average, tested quarterly, for a given sampling location. The City of Flint reports levels from 8 sampling test locations. Of the two quarterly sampling cycles since Flint began operating the WTP full time, HAA5 levels have been acceptable but TTHM levels have been high at all 8 sampling sites.

According to the Stage 2 DBPR, the annual average value requires 3 quarters of sampling data with the most current period counting twice. Therefore, the City of Flint has not yet experienced a violation of the TTHM MCL because only 2 quarters of data have been obtained. However, levels recorded indicate the likelihood of an MCL exceedance later this year.

A number of issues have been identified as possibly contributing to the high THM levels measured.

1. Inefficient ozone system operation which has resulted in increased chlorine feed.
2. Sewer leak discovered upstream of intake causing high total Coliform levels, increased chlorine demand, and resulting need to increase chlorine feed.
3. Bypass stream around softening contributed to chlorine demand.
4. Unlined cast iron pipe in the distribution system contributing to chlorine demand.
5. Recirculating water in the distribution system due to less than ideal configuration of Cedar Street and West Side pump stations.
6. Broken valves resulting in stagnant water in some areas.
7. High chlorine demand in filters.
8. High THM formation potential (THMFP) in source water.
9. Less than optimal removal of THM precursors

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ACTION PLAN

The City of Flint has signed an agreement with the Karegnondi Water Authority (KWA) to purchase raw water drawn from Lake Huron. The KWA system is currently under construction and expected to be operational by late 2016. The water supply from Lake Huron will have entirely different water quality characteristics from the Flint River and those characteristics are expected to yield drastically reduced DPB formation. With that, non-structural options to help reduce THM levels are much preferred over solutions requiring new construction. Therefore, two categories of actions have been devised: Stage 1 being actions that can be completed relatively quickly without major construction and Stage 2 consisting of either long term actions or solutions requiring major construction. The City has completed or intends to complete Stage 1 Actions by February 16, 2015, the week in which the next quarterly sampling is to be done. Stage 2 actions are to be implemented only if Stage 1 actions are ineffective in adequately reducing TTHM levels and therefore Stage 2 is contingent upon the outcome of Stage 1.

Stage 1 – Immediate Actions

- ☐ Hire ozone system manufacturer to troubleshoot ozone system
- ☐ Bench scale jar testing
  - Match existing process and access possible areas of improvement
  - Simulate potential modifications to treatment process
  - Evaluate coagulation and flocculation polymer aid feeds to assist with TOC removal
- ☐ WTP operational changes
  - Discontinue softening bypass stream to reduce chlorine demand
  - Disinfection of filter beds to reduce chlorine demand
  - Possibly begin coagulation and flocculation polymer aid feeds to assist with TOC removal depending on bench scale test results
- ☐ Increase water main flushing efforts to minimize stagnant water
- ☐ Water system modeling to identify areas with high water age and potential solutions
  - Cedar Street Pump Station potential recirculation
  - West Side Pump Station potential recirculation
  - Storage tank volume use
  - Possible broken closed valve locations
  - Locations in need of flushing
  - Lower high water levels in storage tanks

Stage 2 – Contingent Actions

- ☐ Fix ozone system
- ☐ Start feeding coagulation and flocculation polymer aids to lower TOC, if not completed in Stage 1
- ☐ Convert to lime and soda ash softening
- ☐ Change disinfectant to chloramine or chlorine dioxide until KWA
- ☐ Install pre-oxidant feed at intake to optimize ozone disinfection
- ☐ Implement advanced treatment for THM precursor removal
- ☐ Increased main flushing based on water modeling results
- ☐ Continue valve replacements with water model assistance
- ☐ Emphasize cast iron pipes on water main replacement priority list

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I. BACKGROUND

The City of Detroit Water and Sewer Department (DWSD) has historically provided drinking water for the City of Flint and Genesee County. In the late 1990's growing concern regarding the reliability of the DWSD supply prompted the City of Flint to upgrade their existing water treatment plant (WTP). Those improvements, defined as Phase I, were completed in 2005 and were intended to allow the Flint WTP to operate, using the Flint River as the source, for an extended period of time in the event that supply from the DWSD was temporarily interrupted. Additionally, the Phase I improvements set the stage for Flint to break free from dependence on the DWSD supply and water charges over which they had no control.

A. WATER SUPPLY TRANSITION

1. Detroit Water and Sewer Department (DWSD)

Until recently the Genesee County and Flint region had been provided drinking water by the DWSD. However, due to excessive cost increases and reliability issues with the DWSD system other options had to be explored.

2. Karegnondi Water Authority (KWA)

In 2010 the Karegnondi Water Authority (KWA) was formed for the purpose of developing a new water supply from Lake Huron to serve the region in lieu of the DWSD supply and the City of Flint elected to join. The KWA expects the new system which is currently being constructed to become operational in the fall of 2016.

3. Flint River – Interim Period

With a water supply agreement between Flint and the DWSD set to expire in early 2014 and the KWA system not expected to be operational until late 2016, the City of Flint decided to initiate operation of the existing WTP full time utilizing the Flint River as the interim water source. A variety of WTP improvements were necessary for the Flint plant to become a full-time plant. For purposes of this report, Phase II improvements to the Flint WTP are improvements which have been made to allow the plant to operate full time with either the Flint River as the source or the KWA supply as the source.

B. TTHM PENDING VIOLATIONS

The calculation for determining if the MCL has been violated for TTHM is:

(2 x current quarter value + previous 2 quarter values) / 4

Flint has completed tests for 2 quarters and therefore has not violated an MCL limit to date. However, the third quarter of sample data is likely to provide MCL exceedances at all 8 sampling sites. Test results are tabulated below.

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TABLE 1 – 2014 DBP TEST RESULTS

Sample Location	TTHM 1st Qrt 5/21/14	TTHM 2nd Qrt 8/21/14	TTHM 3rd Qrt	HAA5 1st Qrt 5/21/14	HAA5 2nd Qrt 8/21/14	HAA5 3rd Qrt
3719 Davison - McDonalds	162.4	145.3		64	43	
822 S. Dort Hwy - BP Gas Sta.	111.6	112.0		52	40	
3302 S. Dort Hwy – Liquor Palace	96.5	127.2		48	31	
3606 Corunna – Taco Bell	106.4	181.3		55	24	
2501 Flushing – Univ. Market	75.1	196.2		38	17	
3216 MLK – Salem Housing	82.2	112.4		41	25	
5018 Clio – Rite Aid	88.2	144.4		49	30	
6204 N. Saginaw – N. Flint Auto	79.2	118.3		50	37	

TTHM MCL = 80 ug/l
HAA5 MCL = 60 ug/l

C. WATER TREATMENT PLANT RECENT IMPROVEMENTS & STATUS

1. Phase I WTP Improvements

Since 1965, the Flint WTP has remained a secondary or backup supply system to the DWSD primary supply. Typically the secondary supply for a public water system is expected to be needed only during emergency situations and normally is designed for short term operation such as providing the average daily demand for a few days. Conversely, Phase I improvements were designed with the intent to upgrade the Flint WTP in order to allow for an extended short term period (6 weeks) because of the perceived high risk that the DWSD supply would fail and remain out of service for an extended duration. Regardless, the Flint WTP was still intended to serve as a standby plant and as such the Phase I improvements lacked redundancies that would be required for a primary supply WTP.

2. Past Pilot Study Testing

During design of the Phase I improvements a treatability study was completed by Alvord, Burdick & Howson, LLC (AB&H) in 2002. The Treatability Study evaluated the current treatment processes that are in place at the Flint WTP today with the Flint River as the source. The report recommended the following:

TABLE 2 – 2002 WTP TREATMENT RECOMMENDATIONS

Treatment	Purpose	Point of Application	Dosage (mg/l)
Sodium permanganate	Zebra mussel control	Intake	0.3
Ozone	Taste & odor removal, disinfection	Diffusor basin	1.5
Ferric chloride	Coagulation	Rapid mix	40
Coag aid polymer	Turbidity & TOC removal	Rapid mix	2.0
Floc aid polymer	Turbidity & TOC removal	Floc basin	0.05
Lime	Softening	Softening basin	175
Soda ash	Softening	Softening basin	52
Carbon dioxide	pH adjustment	Recarb basin	37
Media filters	Filtration	Na	Na
Chlorine	Disinfection	Filter effluent	1.0

Of the recommended items, zebra mussel control, coagulant and flocculation polymer aids, and soda ash feed have not been incorporated into the treatment process.

3. Phase II WTP Improvements for Full Time Operation

Phase II WTP improvements are those needed to convert the Flint WTP from a back-up supply to a primary supply plant. A number of improvements have already been constructed as they were necessary to operate full time, treating water from the Flint River. The improvements under the title of Phase II that have been completed or are nearly complete include upgrades to the lime sludge lagoon, the lime sludge lagoon decant and disposal system, decant pump station and force main, installation of mid-point chlorination before filtration, and upgrade of the electric feed sub-station.

Additional improvements to the Flint WTP that are to be completed to become part of the normal treatment process using water supplied by the KWA are:

- ☐ New oxygen and nitrogen storage facilities for the ozone system
- ☐ New coagulant feed system
- ☐ Electrical
    - Pump Station #4 upgrades
    - Plant 2 improvements
    - Filter press building feeder
    - SCADA and controls upgrades
    - Filter transfer pump station feeders
- ☐ Installation of the future raw water feed connection point for the KWA
- ☐ Pump replacements and VFD installation in the low and high service pump station
- ☐ Filter transfer pump station to Dort Reservoir
- ☐ Facility security improvements

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II. SOURCE WATER EVALUATION

A. DATA ANALYSIS

Based on past data collected and the 2002 Treatability Study by AB&H, the Flint River water quality varies seasonally with higher hardness and alkalinity experienced in the winter. Higher magnesium concentrations are also experienced in the winter, adding difficulty to the settling process due to neutrally buoyant floc. General water quality average characteristics recorded for the 2002 Treatability Study as compared with average characteristics recorded this year are shown in Table 3 below.

TABLE 3 – FLINT RIVER WATER QUALITY CHARACTERISTICS

Period	Turbidity NTU	TOC Mg/l	Alkalinity Mg/l	Hardness Mg/l as CaCO3	pH	Total Col. Count/day
2001 Apr–Oct	7.9	9.4	215	27[illegible]	8.1	870-1230 (7300 max)
2014 May–Oct	8.3	10.3 5/22/14	207	252	8.2	1900-9000 (48,300 max)

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Other than total Coliform, the Flint River characteristics do not appear to have changed significantly over the past 10+ years. Note that further investigation by City staff revealed a sewer leak upstream of the plant that likely was contributing to the total Coliform count.

B. CONCLUSIONS

Considering the minor changes in Flint River water quality, much of the information contained in the 2002 Treatability Study by AB&H remains relevant today. Data from that report assumed to be consistent today include the following:

- ☐ Flint River is influenced by groundwater from a dolomitic aquifer
- ☐ Hardness varies seasonally with higher hardness and alkalinity in the winter
- ☐ Hardness, alkalinity, magnesium concentrations tend to be reduced by run-off
- ☐ Total THMFP is likely [illegible]80-440 micrograms per liter as measured between April 2001 and January 2002. The City intends to re-test the raw water to confirm the THMFP has not changed. Results are pending.

In development of the 2002 Treatability Study, processes were simulated which resulted in low THMFP. Therefore, information contained in that report will be used to assist with establishing a baseline jar testing procedure discussed further in Section III.

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III. TREATMENT PROCESS EVALUATION

A. EXISTING PROCESS DESCRIPTION

The existing WTP consists of an intake with screening from the Flint River, low lift pumping, ozonation, rapid mix, flocculation, settling, softening, recarbonation, filtration, storage and high service pumping. A process diagram is shown as Figure 1.

1. Intake

A 72" diameter pipe draws water from the Flint River through 2 traveling screens to the low lift pump structure. No chemicals are currently fed for Zebra mussel control or pre-oxidation as recommended by the 2002 Treatability Study. Manual removal of zebra mussels proved to be more economical than installation of chemical feed equipment considering the short term need.

2. Ozone

There are 2 ozone generators designed to provide adequate ozone for a WTP flow of up to 36 mgd. There are 3 ozone contact basins. The ozone generators were designed to produce 900 lbs/day at 10% concentration and up to 1300 lbs/day at 6% concentration each. Recent readings have indicated a production rate of approximately 700 lbs/day at 4% concentration. While serving the purposes of taste and odor control and disinfection, it is possible the current ozone feed might not be optimized to realize additional TOC removal benefits demonstrated by previous tests. Also, less than optimal ozonation has led to increased chlorine feed.

3. Rapid Mix

East and West rapid mix chambers allow chemical feed prior to the flocculation basins. Each rapid mix chamber is equipped with a 5 hp mixer.

4. Coagulation / Flocculation

The WTP contains two equally sized flocculation basins, east and west, and each basin provides tapered or gradually slowed mixing from inlet to outlet. There are fifteen 2 hp mixers in each basin with VFDs to control mixing speed. The 2002 Treatability Study recommended feeding both coagulation and flocculation polymer aids. Neither polymer aid is being used today because turbidity and TOC removals have been sufficient to meet regulatory requirements.

5. Settling

Primary clarification takes place within 3 basins containing plate settlers. The settlers are operating as designed.

6. Softening

Again, there are two basins for softening: east and west. Each basin is 120' in diameter and contains a solids contact softening unit. Each softening basin/unit has a design capacity of 18 mgd. Low lift pumping limitations, flow control to the basins, and fluctuating demands have made it difficult for WTP staff to stabilize the softening process. Softening is accomplished by feeding lime. The decision was made by the City not to feed soda ash in order to remove non-carbonate hardness because acceptable hardness levels could be achieved with lime feed only and softening is short term until Lake Huron water becomes available.

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7. Recarbonation

Recarbonation for pH adjustment is accomplished in east and west recarbonation basins between and to the north of the softening basins. Carbon dioxide storage and feed equipment is located west of the recarbonation basins.

8. Filtration

Filtration is accomplished with 12 dual media filters, equally sized and designed to filter 3.0 mgd each. Media consists of 12" of sand and 18" of anthracite. The filters have been operated intermittently over the years due to the standby nature of the WTP and until recently, chlorine injection took place downstream of the filters. It is possible some microbial growth has developed in the filters.

9. Disinfection

Limited disinfection is provided by ozonation, but the primary form of disinfection is chlorine fed prior to filtration and prior to finish water storage / high service pumping. The intermediate chlorine injection location was recently constructed under the Phase II, Segment 1 contract.

10. Clear Well & Pumping

The pump building sits adjacent to a 3 MG clear well and contains both low and high service pumps.

B. JAR TESTS / EXPERIMENTS

1. Approach

There are several well practiced methods by which DBPs can be reduced. First, the disinfectant can be changed to an alternate that has a lower tendency to form DBPs. Second, additional treatment systems such as activated carbon or air stripping (depending on the nature of the precursors) can be added to remove DBP precursors. Lastly, the existing treatment processes can be optimized to remove as much DBP precursor as possible. Of these options, optimizing existing treatment processes is the only strategy that does not require the construction of new and expensive facilities. It is anticipated that Flint will be receiving Lake Huron water in approximately two years and this water will have a completely different chemistry from the Flint River. Major process changes instituted to address THM levels using Flint River water are likely to be unnecessary for Lake Huron water and may even be inappropriate. Therefore, those options which require addition of new treatment processes are undesirable at this time. In recognition of this upcoming change in water source, this study will concentrate on improving the existing processes, rather than adding new ones. New treatment processes will only be recommended if operational changes to the existing treatment train prove ineffective.

Recent sample test results suggest that most of the DBPs are formed in the distribution system rather than within the treatment plant. Therefore, the most logical approach is to reduce the DBP formation potential (DBPFP) rather than simply lowering the levels of DBPs leaving the plant. During bench scale testing, formation potential (FP) levels will be the primary indicator of success or failure of any proposed process modifications.

2. Protocol

Bench scale pilot testing is intended to reflect actual plant operating and hydraulic conditions so the bench scale treatment units will be sized based on various dimensionless factors to ensure the pilot treatment matches the actual system. Bench scale ozonation is not practical due to time and cost limitations. Therefore, water samples will be withdrawn following the plant ozone basin. These samples will be transported to the laboratory where they will be dispensed into square testing jars. The jars will act as rapid mix, three-stage flocculation, and settling. Rapid mix and flocculation conditions will be matched to the plant based on "Gt" values. The "G" value is a measure of the mixing intensity and is a function of mix time, viscosity of the liquid, and mixing power applied to the water. "Gt" then, is a size scaling factor where time has been accounted for. Settling time will be scaled to match the shorter settling depth of the testing jars. After settling, samples will be decanted from the test jars. The decanted samples will then be lime softened; softening conditions will be similarly matched on the basis of "Gt". Fluoride will be added and carbon dioxide sparged into the samples to reduce the pH. The water will then be vacuum filtered through filter paper, sized to simulate the plant's dual media filters. The samples will be dosed with excess chlorine and allowed to react for seven days before testing for DBPs to determine the formation potential.

Although these conditions may be refined based on new information, we anticipate the following:

TABLE 4 – BENCH SCALE TEST MIXING INTENSITIES

Process	G	Duration
Ozonation	Plant	-
Rapid Mix	[illegible]	25 sec
Flocculation, Stage 1	50	9 min
Flocculation, Stage 1	25	9 min
Flocculation, Stage 1	12	9 min
Settling	[illegible]	10 min
Softening	TBD	10 min
Recarbonation	na	na

It is expected that the primary variables during the testing will be chemical additions and chemical dosages. Specific chemicals and dosages used for initial testing conditions will be selected to reflect current plant usage and the recommendations of the 2002 Treatability Study.

TABLE 5 – BENCH SCALE TEST CHEMICAL FEED RATES

Chemical	Current Usage	2002 Study
Ozonation	4.66 mg/l	1.5 mg/l
Ferric Chloride	7.7 mg/l	40 mg/l
Coagulant Aid Polymer	Not used	2.0 mg/l
Flocculation Aid Polymer	Not used	0.05 mg/l
Lime	120 mg/l	175 mg/l
Soda Ash	Not used	52 mg/l
Cationic Softening Polymer	3.13 mg/l	Not used
Anionic Softening Polymer	0.88 mg/l	Not used
Fluoride	0.45 mg/l	1 mg/l
Carbon Dioxide	32 mg/l	37 mg/l
Chlorine	6.3 mg/l	1 mg/l

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3. Considerations

The 2002 Treatability Study did not note significant formation of DBPs. This may be a function of different Flint River water chemistry at that time. However, recognizing the considerable differences in chemical usage and dosages between that study and current operations, those differences in chemical use and dosage are an obvious starting point for optimizing treatment to prevent DBP limit exceedance.

Although it is believed that optimization of current treatment can correct the DBP issue, should optimization of present treatment prove insufficient, alternate residual disinfectants (chloramines and chlorine dioxide) will be investigated as additional treatment measures.

4. Results

To be completed following jar testing and experimentation.

5. Conclusions

To be completed following jar testing and experimentation.

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IV. DISTRIBUTION SYSTEM EVALUATION

EPA guidance for the distribution evaluation portion of an OER is focused on identification and isolation of a specific portion of the distribution system that led to the exceedance. The circumstances of Flint's apparent pending TTHM exeedances are unusual in that a new supply has been implemented which clearly corresponds to the high TTHM sample results. Despite obvious implications to the primary cause of increased TTHM levels, value remains in evaluating the distribution system as there may still be distribution improvements that can be made to help alleviate the problem.

Evaluation of the distribution system, including modeling, was recently added to LAN's scope of services. When finished, information will be provided to complete the following topics in this section.

A. INFRASTRUCTURE

1. Piping

Main break history information available?
List pipe data for system… age, material, size

2. Storage

Considering drop off in demands in recent years, are storage tanks oversized?
Do they have mixing, baffling, other, to prevent stagnant water?
Are tanks in good condition?

3. Pump Stations

Condition of pump stations?
Pumps oversized?
Are valves working properly to maintain pressure zones?

B. OPERATIONS AND MAINTENANCE

1. Pump Station & Storage Operations

Are pressure districts set up properly?
Cedar Street Pump Station – no established pressure zone? Talk to Flint
West Side Pump Station – no established pressure zone? Talk to Flint
High and low levels in tanks optimally set? Should they be adjusted to use less storage volume?

2. Booster Disinfection Practices

They don't have any, do they?

3. Changes in System Demands

Long term decline in demands
Short term fluctuations – max day in winter due to large number of main breaks

C. WATER SYSTEM HYDRAULIC MODELING

1. Simulation of Existing System

Match existing conditions, particularly chlorine residual. We have chlorine feed data at plant and residuals at 10 locations in each MOR, May-October.

2. Identification of Deficiencies

Specific issues to look at:

Worst case at minimum daily demands
Water age in entire system
Recirculating water through pump stations
Use of storage tanks
Indications of broken valves

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V. RECOMMENDATIONS TO MINIMIZE FUTURE OEL EXCEEDANCES

A. SOURCE

The City of Flint has already committed to the change from the Flint River as the water source to Lake Huron under the KWA system, planned for late 2016. The risk of future TTHM limit violations will decline substantially with the use of water from Lake Huron due to much lower DBP precursors. It is important to recognize that the Flint River will become strictly an emergency supply when the KWA supply becomes available and any investments toward the Flint River should be contemplated accordingly. Recommendations discussed below in this section apply to the Flint River as the source.

Reverting to supply from the DWSD until the KWA supply is available as an option. However, the DWSD has stipulated that a $4 million connection fee would apply and current water rates would include approximately $900,000 / month flat fee plus usage charges. Therefore, utilizing the DWSD for interim supply is cost prohibitive under the terms defined by the DWSD.

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1. Watershed Management

A volunteer group entitled the Watershed Coalition performs various tasks related to managing the Flint River watershed such as spring cleanups and annual benthic studies to evaluate the river 'health'. No additional action is recommended at this time.

2. Monitoring

The City documents typical raw water characteristics as part of standard preparation of Monthly Operating Reports (MOR). No changes are recommended at this time.

3. Intake Operations

The 2002 Treatability Study recommended pre-oxidation in the form of sodium permanganate as a feed at the intake. However, pre-oxidation with sodium permanganate is unlikely to provide significant oxidizing of organics beyond that provided by ozonation. It is possible the addition of hydrogen peroxide would enhance the ozone process.

4. Seasonal Strategies

Past data indicates the Flint River is influenced by groundwater and in particular, dolomitic spring water. The result is hard water with high concentrations of magnesium and sulfate. Also, hardness and alkalinity are higher during the winter. Upon initiation of supply from the Flint River, the City made the decision to soften with lime only to focus on removal of carbonate hardness. One potential modification that could assist with TOC removal and thus decrease THMFP would be lime and soda ash softening. If implemented soon, the procedural change would be timely as it would also address increased hardness expected going into this winter.

5. Upstream Contamination Issues

Upstream contamination issues are extremely difficult to prevent and even if detected are difficult to locate. Evaluation of raw water data collected for MORs is the easiest manner in which to detect upstream contamination issues because the data is already collected for treatment purposes. In fact, high total Coliform readings signaled a potential issue recently that the City found to be a sewer leak, which was subsequently repaired.

An upstream monitoring and warning system could be established to attempt to detect spill event type contamination early enough to cease intake prior to the contamination reaching the WTP. However, given the imminent conversion to the KWA supply, the period of full time use would likely be far too short to achieve payback on the capital expenditures.

B. TREATMENT PROCESS

1. Operational Recommendations

- ☐ Coagulation and flocculation polymer aids: The 2002 Treatability Study suggested the use of coagulation and flocculation polymer aids. These polymer aids were shown in the 2002 Treatability Study to increase TOC removal and thereby reduce THMFP. Further evaluation will be completed during jar testing. [what would need to be done to the system to allow feed?? Could it be done easily??]
- ☐ Discontinue softening bypass: The City was previously bypassing a portion of flow around the softening basins because hardness levels did not warrant softening of the full stream. However, this practice was discontinued because it was believed the bypass stream was contributing to chlorine demand and preliminary data has supported the belief. Chlorine demand dropped 0.5 – 1.0 mg/l following elimination of the bypass stream in early November 2014.
- ☐ Soften with line and soda ash: Research has shown that enhanced softening with both lime and soda ash may provide additional TOC removal. The efficacy of this option will be evaluated during jar testing.
- ☐ Disinfection of filter beds: In case there has been microbial growth it is recommended the filters be 'shock' treated with chlorine and rinsed. A chlorine injection point was added upstream of the filters during the first segment of Phase II so future growth in the filters should not be an issue.
- ☐ Optimization of all existing treatment processes: Depending on bench scale testing conditions and results, slight modifications to all treatment processes might in order to replicate lower DPBFP.

2. Infrastructure Change Recommendations

- ☐ Fix and/or replace faulty ozone equipment: Since the ozone equipment was installed it has not been used extensively so the hope is that major components remain in good condition and the system can be easily modified to restore proper functionality. The City has scheduled the equipment manufacturer to field inspect the system on December 15, 2014.
- ☐ Change disinfectant to chloramine or chlorine dioxide: If other options prove to be ineffective, conversion to another disinfectant should be fully evaluated. Various characteristics of chloramination indicate an advantage over chlorine dioxide, but a full analysis would provide clarity as to which would be preferred.
- ☐ Install pre-oxidant chemical feed: Hydrogen peroxide as a pre-oxidant can enhance the activity of the ozone. This option is listed as a consideration only if problems continue with ozonation.
- ☐ Repair upstream sewer leak: a sewer leak upstream of the WTP intake was discovered and has already been repaired by the City.

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C. DISTRIBUTION SYSTEM

Recommendations will be incorporated into this report when available. It is anticipated details will be provided for the following topics.

1. **Manage Water Age**
   a) **Storage Tanks**
   b) **Residence Time in Pipes**

2. **Reduce Disinfectant Demand**
   a) **Flushing**
   b) **Cast Iron Pipes**

3. **Water Modeling of Recommendations**
   Determine best flushing locations to reduce water age
   Changes to storage tank operating levels to reduce water age
   Valves to close/add to improve pressure zones, reduce recirculation
   Optimization of pump station use – smaller pumps? Shut down?

A number of actions have already been taken in terms of the distribution system. Water main flushing efforts were increased until late November when freezing weather became prevalent. Also, numerous valves that were broken in the closed position and believed to have been contributing to stagnant water were repaired.

D. BOOSTER DISINFECTION

Decreasing chlorine feed at the WTP and adding booster disinfection in the distribution system is an alternative intended to reduce the reaction time at higher concentrations of chlorine to reduce DPB formation. Extensive looping and branching within the existing system would require numerous booster feed points and water system modeling to determine the most effective feed point locations. As a result, booster disinfection would likely not be cost effective. Further discussion and details will be provided when the distribution evaluation results are available.

E. CATEGORIZATION OF ACTIONS

Considering that the Flint River is being used as the water source only until the KWA supply is available (expected late 2016), options to address high THM formation that require new construction or extensive time to implement are not preferred. On the other hand, the City understands THM sample results to date dictate that some action is necessary. Two categories have been developed to assist the City in prioritizing actions to take. Stage 1 consists of actions that can be completed relatively quickly without major construction and Stage 2 actions are either long term actions or solutions requiring major construction. Stage 1 actions are to be completed first followed by evaluation of the results prior to consideration of Stage 2 actions. Grouping of actions are shown in the table below.

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TABLE 6 – ACTION PLAN

	Action	Purpose
Stage 1	Troubleshoot ozone feed system	Reduce chlorine feed and increase TOC removal
	Bench scale jar testing	Optimize treatment process and evaluate possible modifications
	Discontinue softening bypass	Reduce chlorine demand
	Disinfect filters	Reduce chlorine demand
	Increased water main flushing	Reduce water age / stagnant water
	Water system modeling evaluation	Determine areas with high water age and reasons
	Implement coag. & floc. polymer aids	Increase TOC removal
	Lower high water level in storage tanks	Decrease water age
Stage 2	Repair ozone system	Reduce chlorine feed and increase TOC removal
	Continue increased water main flushing	Reduce water age / stagnant water
	Convert to lime and soda ash softening	Increase TOC removal
	Continue valve replacements based on water model	Reduce water age / stagnant water
	Change disinfectant to chlorine dioxide	Reduce THMs
	Install pre-oxidant feed at intake	Optimize ozone disinfection, reduce chlorine
	Place priority on replacing cast iron water mains	Reduce chlorine demand

Samples were taken the week of November 1[illegible]th for the 3rd quarter of testing. Although the City has begun implementation of Stage 1 actions, THM results are not expected to be noticeably affected since there has not been enough time for a response. The next quarter of sampling is due to be completed the third week in February. It is the City's intent to implement Stage 1 actions prior to the [illegible] quarter of THM sampling. [need to make sure Flint is good with this]

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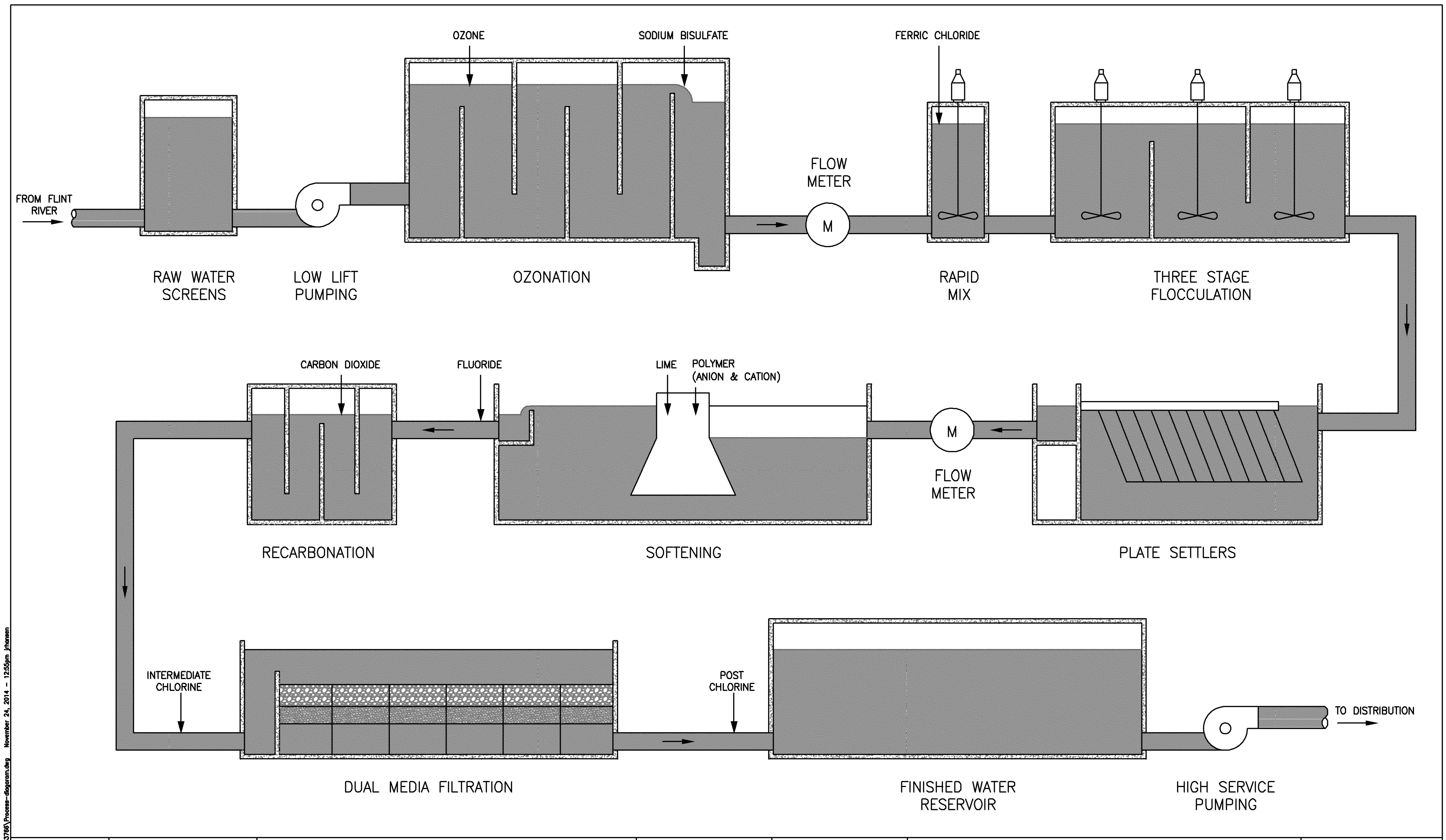

C:\projectwise\jhansen\d0263766\Process-diagram.dwg November 24, 2014 - 12:55pm jhansen

Genesee County

Lockwood, Andrews & Newnam, Inc.
A LEO A DALY COMPANY
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CITY OF FLINT
WATER TREATMENT PLANT

REVISIONS

NO.	DESCRIPTION	DATE

FILE LOG

ACTIVITY	BY
Manager	JWG
Design	
Drawn	JRH
Check	JRH

WATER TREATMENT PLANT
PROCESS DIAGRAM

Project No. 130-10701-001
Date Nov. 21, 2014

Sheet
FIG 1

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To: Shoven, Heather[shoven.heather@epa.gov]; Porter, Andrea[porter.andrea@epa.gov]
From: Deltoral, Miguel
Sent: Mon 11/2/2015 5:06:37 PM
Subject: FW: Lead levels and Chloramine
Operational-Evaluation-Report.pdf

#5

Miguel A. Del Toral
Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

From: Porter, Andrea
Sent: Tuesday, April 7, 2015 03:42 PM
To: Crooks, Jennifer; Deltoral, Miguel
Cc: Poy, Thomas; Harris, Kimberly
Subject: RE: Lead levels and Chloramine

Hi All,

Here are a few excerpts from Flint's November 2014 OEL report (source = http://cityofflint.com/?p=6251):

"Stage 2 actions are to be implemented only if Stage 1 actions are ineffective in adequately reducing TTHM levels and therefore Stage 2 is
contingent upon the outcome of Stage 1."

"Stage 1 – Immediate Actions
☐ Hire ozone system manufacturer to troubleshoot ozone system
☐ Bench scale jar testing
o Match existing process and access possible areas of improvement
o Simulate potential modifications to treatment process
o Evaluate coagulation and flocculation polymer aid feeds to assist with TOC
removal
☐ WTP operational changes
o Discontinue softening bypass stream to reduce chlorine demand
o Disinfection of filter beds to reduce chlorine demand
o Possibly begin coagulation and flocculation polymer aid feeds to assist with
TOC removal depending on bench scale test results
☐ Increase water main flushing efforts to minimize stagnant water
☐ Water system modeling to identify areas with high water age and potential solutions
o Cedar Street Pump Station potential recirculation
o West Side Pump Station potential recirculation
o Storage tank volume use
o Possible broken closed valve locations
o Locations in need of flushing
o Lower high water levels in storage tanks"

"Stage 2 – Contingent Actions
☐ Fix ozone system
☐ Start feeding coagulation and flocculation polymer aids to lower TOC, if not
completed in Stage 1

☐ Convert to lime and soda ash softening
☐ Change disinfectant to chloramine or chlorine dioxide until KWA
☐ Install pre-oxidant feed at intake to optimize ozone disinfection
☐ Implement advanced treatment for THM precursor removal
☐ Increased main flushing based on water modeling results
☐ Continue valve replacements with water model assistance
☐ Emphasize cast iron pipes on water main replacement priority list"

I would think, based on the OEL, that everyone (State, public, etc.) should be aware that Flint is contemplating a switch to a different disinfectant, but only after they exhaust a slew of less drastic remedies for their DBP issues.

Hope that helps.

Thanks,
Andrea Porter

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From: Crooks, Jennifer
Sent: Tuesday, April 07, 2015 3:29 PM
To: Deltoral, Miguel
Cc: Poy, Thomas; Porter, Andrea; Harris, Kimberly
Subject: RE: Lead levels and Chloramine

Tom P and I met this morning to discuss various issues going on in MI, related to Flint. One topic that came up was the City's possible switchover to chloramines (this topic came up at a public meeting in Flint), and its possible effect on lead in the Flint drinking water, such as what happened in DC. We called Michael Wright to see if that recommendation came out of the Flint Technical Advisory committee. Mike had not heard that recommendation, but totally understood the overall ramifications on the system, that while the change over to chloramines would most likely decrease TTHMs, it also might detrimentally affect the lead levels at the tap. The State had not heard that Flint was contemplating this change over to chloramines, so Mike Prysby said he would check in with Flint.
Jen

From: Crooks, Jennifer
Sent: Tuesday, April 07, 2015 8:20 AM
To: Deltoral, Miguel
Cc: Thomas Poy
Subject: RE: Lead levels and Chloramine

Thank you, Miguel. This entire discussion is bringing this to the forefront of the disaster, as you say. I think we should discuss getting a group of experts together with Liane, too, at our April 28 lunch meeting.

Jen

From: Deltoral, Miguel
Sent: Tuesday, April 07, 2015 8:17 AM
To: Crooks, Jennifer
Cc: Porter, Andrea

Subject: Re: Lead levels and Chloramine

You can have Citizen name / Ex. 6 call me and I can explain Pb-IV, what happened in DC and why.

Miguel A. Del Toral
Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

From: Crooks, Jennifer
Sent: Monday, April 6, 2015 01:47 PM
To: Deltoral, Miguel
Cc: Porter, Andrea
Subject: RE: Lead levels and Chloramine

So, Andrea explained that the Pb-IV is the hard Pb lining that DC's pipes got from the years of over chlorinating. You said below that you don't think that Flint had any Pb-IV, so Flint will probably not have the lead issues that DC had. But, as you said, any significant changes in the water chemistry, can cause a wealth of problems.
Jen

From: Deltoral, Miguel
Sent: Friday, April 03, 2015 4:44 PM
To: Crooks, Jennifer
Cc: Poy, Thomas; Harris, Kimberly; Schock, Michael; Porter, Andrea
Subject: Re: Lead levels and Chloramine

I seriously doubt that they have any Pb-IV in Flint, but anytime you make the significant and it seems iterative changes to the water chemistry, you are asking for trouble. I think we are going to need to think real hard about including mandatory OCCT studies and mandatory increased monitoring for at least some treatment changes.

Miguel A. Del Toral
Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

From: Crooks, Jennifer
Sent: Thursday, April 2, 2015 09:13 AM
To: Deltoral, Miguel
Cc: Poy, Thomas; Harris, Kimberly
Subject: Lead levels and Chloramine

Miguel—In light of the possibility of Flint going to chloramine use, Citizen name / Ex. 6 brought up a significant comparison to the DC lead fiasco. What will lead levels look like after the switchover to chloramines, since there are lead service lines in Flint? She cites from the CDC research study below. Specifically, this paragraph:

“Changes in water treatment and disinfection practices can substantially undermine lead corrosion control (60). In the mid-1990s in the District of Columbia (DC), high levels of free chlorine were used to decrease coliform bacteria in water, a process that inadvertently changed the type of lead mineral coating in the water lines to one with very low solubility in the background pH of the DC drinking water. When the free chlorine was replaced with chloramines, the transformed highly insoluble lead scale minerals were no longer stable and dissolved. Therefore, a substantial level of lead was released from the lead service lines into drinking water at the tap (61). CDC reviewed the relationship between BLLs in children, the presence of a lead service line, and water disinfection practices in DC during 1998–2006 (62). The study reported that the presence of a lead service line was associated with higher BLLs in children. This relationship was most pronounced during 2001 through June 2004, when chloramines were used to disinfect the drinking water without adequate corrosion control (62). An observational study in which the BLLs of children were matched to population-based data of water lead levels during periods when water disinfection practices changed in DC concluded that the increase in water lead levels was associated with an increase in the BLLs of children (63). In a study in Wayne County, North Carolina, a unified geographic information system was used to link BLLs with water service lines made with or without lead. The use of chloramines in water predicted higher water lead levels and BLLs, controlling for well-established, known predictors of BLL (44).”

From: Citizen name / Ex. 6 [mailto: Personal Email / Ex. 6
Sent: Wednesday, April 01, 2015 10:23 PM
To: Crooks, Jennifer
Subject: Lead and Chloramine

Ms. Crooks,
I know I already sent you an email but during further research I discovered this. I thought is was something that should be seen with the recent recommendations of Chloramine possibly being added as a solution.
http://www.cdc.gov/mmwr/preview/mmwrhtml/su6104a1.htm?s_cid=su6104a1_w
LCR And Control Measures Sections, 4th paragraph down. This is my concern with the new chemicals the city wants approval for. What happens to the other citizens who do not know they have an elevated lead content or for the ones who have already tested with elevated levels? I know one of the other levels was 37, that was the highest the city had seen before my levels, what will it look like when Chloramine is added?
Thank you
Citizen name / Ex. 6

To: Kelley, Jeff[kelley.jeff@epa.gov]; Hedman, Susan[hedman.susan@epa.gov]; Kaplan, Robert[kaplan.robert@epa.gov]; Hyde, Tinka[hyde.tinka@epa.gov]
Cc: Rowan, Anne[rowan.anne@epa.gov]; Beckmann, Ronna Erin[beckmann.ronna@epa.gov]; Harrison, Melissa[Harrison.Melissa@epa.gov]; Abrams, Dan[Abrams.Dan@epa.gov]; Poy, Thomas[poy.thomas@epa.gov]; Fortin, Denise[Fortin.Denise@epa.gov]; Deamer, Eileen[deamer.eileen@epa.gov]; Singer, Joshua[Singer.Joshua@epa.gov]; Arcaute, Francisco[Arcaute.Francisco@epa.gov]; Peterson, John[peterson.john@epa.gov]; Loop, Travis[Loop.Travis@epa.gov]; Purchia, Liz[Purchia.Liz@epa.gov]; Allen, Laura[Allen.Laura@epa.gov]; Henry, Timothy[henry.timothy@epa.gov]
From: Cassell, Peter
Sent: Tue 11/3/2015 2:43:25 PM
Subject: Flint News Clips Updated for Nov 3

FLINT DRINKING WATER CLIPS

US. EPA Region 5 – as prepared by Peter Cassell *(ORA/OEC/PA)* On Nov. 3

- □□□□□□□□ Voters pick mayor for Flint amid city's water problems (Detroit 11-CBS/AP)

- □□□□□□□□ Flint Families to Receive New Guidelines On Reducing Lead Exposure (9and10News Detroit)

- □□□□□□□□ Election Day is tomorrow. Here's what's happening around Michigan (Michigan Radio)

- □□□□□□□□ Emergency Mgr Darnell Earley defends Flint role, Detroit schools plan (MSU Public Radio)

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http://www.wtol.com/story/30417189/voters-pick-mayor-for-flint-amid-citys-water-problems

Posted: Nov 03, 2015 3:08 AM CST Updated: Nov 03, 2015 4:44 AM CST

FLINT, Mich. (AP) - Voters are selecting a mayor for Flint, which has been dealing with fallout from drinking water problems.

In Tuesday's election incumbent Dayne Walling, who led Flint amid the public health emergency, faces challenger Karen Weaver, who is seeking her first elected office.

Flint switched from Detroit's system to water drawn from the Flint River last year in a cost-cutting move. Officials recently confirmed that elevated blood-lead levels were found in children. The city reconnected in hopes of resolving the health emergency.

Walling and other officials repeatedly told residents that the water was safe to drink, but Walling says state and federal agencies are to blame for the problems.

The switch happened while Flint was under state emergency financial management. Weaver has focused in part on water issues during her campaign.

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http://www.9and10news.com/story/30412218/flint-families-to-receive-new-guidelines-on-reducing-lead-exposure

Posted: Nov 02, 2015 1:37 PM CST Updated: Nov 02, 2015 1:37 PM CST

By Jamie Valentine, Producer

Health officials say they have new guidelines for Flint families dealing with the emergency with the city's water supply.

The Genesee County Health Department and Michigan Department of Health and Human Services will be sending out letters this week on how to reduce lead exposure.

The response comes after elevated blood lead levels were found in some children in Flint.

The city tried to switch over to water from the Flint River.

The city has now reconnected to Detroit's water system to stop any other health emergencies.

The departments recommend children between the ages of 1 and 2 undergo lead testing during routine doctor visits.

They also suggest using filtered water for drinking, cooking and washing fruits.

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http://michiganradio.org/post/election-day-tomorrow-heres-whats-happening-around-michigan#stream/0

By Steve Carmody • 21 hours ago

There's not much on the ballot in Michigan tomorrow, but what is there is sparking controversy.

It's election day in Michigan. Here we see campaign signs for just some of the 14 candidates running for a vacant state house seat

There are primaries for three state house seats.

The vacancies came as a result of a retirement, a resignation, and an expulsion.

A sex scandal forced two state lawmakers out of office. Cindy Gamrat and Todd Courser admitted roles in an effort to cover-up their extra-marital affair.

Courser resigned his seat. The state House voted to kick Gamrat out.

Gamrat and Courser are now running in crowded primary fields to regain their former seats.

Gamrat is facing off against seven other candidates in the 80th district.

Courser is one of 14 candidates in the 82nd district.

Voters in west Michigan are also voting to fill a vacant state house seat.

Former state representative Brandon Dillion retired so he could take over as the head of the state Democratic Party.

Three candidates are on the ballot today to replace him in the 75th state house district.

The top two vote-getters in each race will face off in March to decide who will serve out the time remaining in their current terms.

Other races on the ballot

Flint

In Flint, the city's drinking water problems are expected to play a big role in the city's mayoral race.

Incumbent Dayne Walling is facing a strong challenge from newcomer Karen Weaver.

Weaver has worked hard to tie Walling to the decision to switch and stay with the Flint River as the city's drinking water source.

Walling says he worked to switch Flint back to Detroit water after rising lead levels were discovered in the city's tap water.

Kalamazoo

Kalamazoo voters will get a chance to do something they haven't done in a century, that is directly elect their city's mayor.

A charter change gave voters the chance to directly pick their city's chief executive.

Prior to this year, Kalamazoo's mayor was the city commission candidate who received the most votes. Incumbent mayor Bobby Hopewell is seeking his fifth term against challenger Kris Mbah.

In Kalamazoo, there's a proposed millage to help the homeless. If approved, the tax money raised would pay for housing for homeless families.

Lansing

Lansing voters are deciding four city council races that may determine the balance of power on the council.

Voters in Lansing will also decide if they want to ban so-called 'golden parachutes' for top city appointees.

A $600,000 settlement with the former general manager of the Lansing Board of Water & Light prompted the proposed charter change.

Under the proposal, city appointees would be limited to one year contracts.

What's happening in your area?

Elsewhere, voters are deciding proposed charter changes and millage questions.

To find out what's on your ballot, go to this resource page from the Michigan Secretary of State.

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http://wkar.org/post/emergency-mgr-darnell-earley-defends-flint-role-detroit-schools-plan

By Mark Bashore • 20 hours ago

Detroit Public School Emergency Manager Darnell Earley was formerly EM for the city of Flint.

Twice, Delta Township resident Darnell Earley has been appointed as an Emergency Manager in Michigan: once in Flint and currently in the Detroit Public Schools. Current State talks with Earley about the Flint water switch and why he thinks the legislature should pass the Governor's Detroit schools funding plan.

Listen at link

As the former Emergency Manager of the city of Flint, our first guest has come under fire recently. Many are blaming Darnell Earley for not stopping the city's decision to switch its water source to the Flint River. The move led to dangerously high lead levels in drinking water.

Earley left his Flint position early this year. Today, he is the EM for the Detroit Public Schools, trying to right the historically troubled district. It faces more than a half-billion dollars in debt.

In both roles, the ordained Baptist deacon has remained a resident of Delta Township.

Current State talks with Darnell Earley about the city of Flint and public schools in Detroit.

###

To: Hedman, Susan[hedman.susan@epa.gov]; Kaplan, Robert[kaplan.robert@epa.gov]
Cc: Hyde, Tinka[hyde.tinka@epa.gov]; Henry, Timothy[henry.timothy@epa.gov]; Poy, Thomas[poy.thomas@epa.gov]
From: Cassell, Peter
Sent: Tue 11/3/2015 6:04:36 PM
Subject: FW: HufPo Flint water request = please advise

Just an fyi – we got an inquiry from the Huffington Post. We forwarded the inquiry to Liz Purchia.

Pete Cassell
Acting Press Team Leader
U.S. EPA Region 5

77 West Jackson Blvd (P-19J)
Chicago, IL 60604-3590
Office (312) 886-6234
Mobile (312) 859-9614

From: Loop, Travis
Sent: Tuesday, November 03, 2015 12:02 PM
To: Purchia, Liz <Purchia.Liz@epa.gov>
Cc: Arcaute, Francisco <Arcaute.Francisco@epa.gov>; Lee, Monica <Lee.Monica@epa.gov>; Grantham, Nancy <Grantham.Nancy@epa.gov>; Rowan, Anne <rowan.anne@epa.gov>; Allen, Laura <Allen.Laura@epa.gov>; Cassell, Peter <cassell.peter@epa.gov>; Cannon, Phillippa <Cannon.Phillippa@epa.gov>; Harrison, Melissa <Harrison.Melissa@epa.gov>; Hyde, Tinka <hyde.tinka@epa.gov>
Subject: Re: HufPo Flint water request = please advise

Be good to try for a deadline tomorrow so we can "make news" with report and memo release, and recycle much of our talking points from radio interview.

Travis Loop

Communications Director for Water

U.S. Environmental Protection Agency

Phone: 202.870.6922

Follow us on Twitter @EPAwater

On Nov 3, 2015, at 12:58 PM, Purchia, Liz <Purchia.Liz@epa.gov> wrote:

Adding Monica and Nancy

From: Arcaute, Francisco
Sent: Tuesday, November 03, 2015 12:56 PM
To: Purchia, Liz <Purchia.Liz@epa.gov>
Cc: Rowan, Anne <rowan.anne@epa.gov>; Allen, Laura <Allen.Laura@epa.gov>; Cassell, Peter <cassell.peter@epa.gov>; Cannon, Phillippa <Cannon.Phillippa@epa.gov>; Harrison, Melissa <Harrison.Melissa@epa.gov>; Loop, Travis <Loop.Travis@epa.gov>; Hyde, Tinka <hyde.tinka@epa.gov>
Subject: HufPo Flint water request = please advise

From: Arthur Delaney [mailto:arthur@huffingtonpost.com]
Sent: Tuesday, November 03, 2015 11:53 AM
To: Peterson, John <peterson.john@epa.gov>; Arcaute, Francisco <Arcaute.Francisco@epa.gov>
Subject: Flint water

Hi, I'm working on a story recapping the Flint water problems and comparing them to another recent lead-in-water crisis in Washington, DC. I wonder if EPA region 5 has any response to the requests that EPA investigate what happened.

I am also wondering if region 5 can say anything about its involvement in the response so far -- especially about the Miguel del Toral memo about high lead levels from earlier this year. I got the impression from flintwaterstudy.org that EPA cooperated with the city and state in trying to stifle the message. Will the final report be released?

My number is (202) 624-9396, happy to receive guidance on background.

--

Reporter | Huffington Post

(202) 624-9396 desk | (646) 415-1161 cell

Twitter @ArthurDelaneyHP

To: Loop, Travis[Loop.Travis@epa.gov]; Grantham, Nancy[Grantham.Nancy@epa.gov]; Allen, Laura[Allen.Laura@epa.gov]; Hedman, Susan[hedman.susan@epa.gov]; Rowan, Anne[rowan.anne@epa.gov]; Lee, Monica[Lee.Monica@epa.gov]
From: Grevatt, Peter
Sent: Tue 11/3/2015 7:28:35 PM
Subject: Fwd: WHAT ARE YOU GUYS DOING DOWN THERE?

For additional background, here is one of 2 emails from Marc Edwards to a number of EPA staff that the NPR reporter will almost certainly have. This may color some of her perspectives on this. We'll send additional comments on the Q/A document shortly. Thanks, P.G.

Sent from my iPhone

Begin forwarded message:

> **From:** "Burneson, Eric" <Burneson.Eric@epa.gov>
> **Date:** November 3, 2015 at 1:56:14 PM EST
> **To:** "Grevatt, Peter" <Grevatt.Peter@epa.gov>
> **Cc:** "Galada, Heather" <Galada.Heather@epa.gov>, "Greene, Ashley" <Greene.Ashley@epa.gov>, "Christ, Lisa" <Christ.Lisa@epa.gov>, "Kempic, Jeffrey" <Kempic.Jeffrey@epa.gov>
> **Subject: FW: WHAT ARE YOU GUYS DOING DOWN THERE?**
>
> **From:** Marc Edwards [mailto:edwardsm@vt.edu]
> **Sent:** Tuesday, September 29, 2015 11:34 PM
> **To:** Schock, Michael <Schock.Michael@epa.gov>; Lytle, Darren <Lytle.Darren@epa.gov>; Burneson, Eric <Burneson.Eric@epa.gov>; demarco.carol@epa.gov; Murphy, Thomas <murphy.thomas@epa.gov>; Shoven, Heather <shoven.heather@epa.gov>; Deltoral, Miguel <deltoral.miguel@epa.gov>
> **Subject:** WHAT ARE YOU GUYS DOING DOWN THERE?
>
> **Wurfel says to NPR you have to poison kids for a year before implementing corrosion control, and to determine the right orthophosphate dose?**
>
> **Eric, is this going to be part of the new improved LCR? And is EPA going to hand Miguel's draft memo to Wurfel, to finalize and/or approve? Wurfel PROMISES THAT the final memo is going to tell a different story. And Miguel is now a ROGUE EPA employee?**
>
> **EPA Office of Water and EPA Region 5 are a national embarrassment. You have a city in**

crisis, kids with elevated blood lead, and NO CORROSION CONTROL PLAN FOR 16 MONTHS, and yet you sit there and do absolutely nothing.

Marc

http://www.npr.org/2015/09/29/444497051/high-lead-levels-in-michigan-kids-after-city-switches-water-source

A draft report from the EPA that was obtained by the ACLU of Michigan also takes the city and state to task.

"Prior to April 30, 2014, the City of Flint purchased finished water from the City of Detroit which contained orthophosphate, a treatment chemical used to control lead and copper levels in the drinking water," the report read, adding that the treatment was discontinued after the switch to Flint River water.

"In accordance with the Lead and Copper Rule (LCR), all large systems ... are required to install and maintain corrosion control treatment for lead and copper. In the absence of any corrosion control treatment, lead levels in drinking water can be expected to increase," the report continued.

A Solution May Be Near

But officials with the Michigan Department of Environmental Quality dispute the findings of the draft report. MDEQ spokesman Brad Wurfel says the report was the work of a "rogue employee," and promised the final report — not yet released — would tell a much different story.

"You have to have to do a full year of studying" the water chemistry as it behaves across the system before implementing corrosion control, Wurfel says, adding that's the only way to know how much phosphate to add to the water.

To: Hedman, Susan[hedman.susan@epa.gov]; Kaplan, Robert[kaplan.robert@epa.gov]; Hyde, Tinka[hyde.tinka@epa.gov]; Henry, Timothy[henry.timothy@epa.gov]
Cc: Deamer, Eileen[deamer.eileen@epa.gov]; Beckmann, Ronna Erin[beckmann.ronna@epa.gov]; Nelson, Leverett[nelson.leverett@epa.gov]; Rowan, Anne[rowan.anne@epa.gov]; Cannon, Phillippa[Cannon.Phillippa@epa.gov]
From: Fortin, Denise
Sent: Wed 11/4/2015 1:21:53 AM
Subject: Fwd: EPA Flint Safe Drinking Water Task Force

FYI - I had a good conversation with Jordan about next Tuesday's briefing and followed up with this email.

Denise

Sent from my iPhone

Begin forwarded message:

> **From:** <Fortin.Denise@epa.gov>
> **Date:** November 3, 2015 at 6:47:42 PM CST
> **To:** Jordan Dickinson <jordan.dickinson@mail.house.gov>
> **Cc:** Amy Hovey <amy.hovey@mail.house.gov>, CatherineM Davis <Davis.CatherineM@epa.gov>, Eileen Deamer <Deamer.Eileen@epa.gov>, "Ronna Beckmann" <Beckmann.Ronna@epa.gov>
> **Subject: EPA Flint Safe Drinking Water Task Force**
>
> Hey Jordan:
>
> As promised, here's the list of EPA's Flint Safe Drinking Water Task Force Members:
>
> Robert Kaplan, EPA Deputy Regional Administrator
>
> Tom Poy, EPA Region 5 branch chief who runs our safe drinking water programs
>
> Miguel DelToral, Region 5 drinking water expert with particular expertise on lead in drinking water
>
> Tim Henry, Deputy Director of the Region 5 Water Division
>
> Jeff Kempic, EPA regulatory manager for the lead and copper rule
>
> Michael Schock, EPA researcher from our Cincinnati lab with expertise in corrosion control and drinking water treatment
>
> Darren Lytle, EPA researcher from our Cincinnati lab with expertise in corrosion control and drinking water treatment

Points of Contact:

Natasha Henderson, Flint City Administrator

Jim Sygo, MDEQ

In addition to Susan Hedman, Tinka Hyde, a press person and I will attend next Tuesday's briefing for your boss.

Please let me know if you have additional questions or need anything else.

Have a good evening - hope you're going home soon!

Thanks,
Denise

Sent from my iPhone

To: Garbow, Avi[Garbow.Avi@epa.gov]; Kopocis, Ken[Kopocis.Ken@epa.gov]; Grevatt, Peter[Grevatt.Peter@epa.gov]; Beauvais, Joel[Beauvais.Joel@epa.gov]; Wilson, Shari[Wilson.Shari@epa.gov]
Cc: Meiburg, Stan[Meiburg.Stan@epa.gov]; Distefano, Nichole[DiStefano.Nichole@epa.gov]; Vaught, Laura[Vaught.Laura@epa.gov]
From: Hedman, Susan
Sent: Wed 11/4/2015 2:48:36 AM
Subject: FW: Clarifications regarding the application of optimal corrosion control requirements of the lead and copper rule
image2015-11-03-155158.pdf
ATT00001.txt

Many thanks to all who worked on this document. These clarifications will prevent a Flint scenario from happening again in the future.

-----Original Message-----
From: Grevatt, Peter
Sent: Tuesday, November 03, 2015 8:23 PM
To: Moraff, Kenneth <Moraff.Ken@epa.gov>; Matthews, Joan <Matthews.Joan@epa.gov>; Capacasa, Jon <Capacasa.jon@epa.gov>; Giattina, James <Giattina.Jim@epa.gov>; Hyde, Tinka <hyde.tinka@epa.gov>; Henry, Timothy <henry.timothy@epa.gov>; Honker, William <honker.william@epa.gov>; Flournoy, Karen <Flournoy.Karen@epa.gov>; Rathbone, Colleen <Rathbone.Colleen@epa.gov>; Bahrman, Sarah <Bahrman.Sarah@epa.gov>; Torres, Tomas <Torres.Tomas@epa.gov>; Opalski, Dan <Opalski.Dan@epa.gov>
Cc: Clark, Becki <Clark.Becki@epa.gov>; Greene, Ashley <Greene.Ashley@epa.gov>; Bergman, Ronald <Bergman.Ronald@epa.gov>; Burneson, Eric <Burneson.Eric@epa.gov>; Hedman, Susan <hedman.susan@epa.gov>; Beauvais, Joel <Beauvais.Joel@epa.gov>; Distefano, Nichole <DiStefano.Nichole@epa.gov>; Kopocis, Ken <Kopocis.Ken@epa.gov>; Wehling, Carrie <Wehling.Carrie@epa.gov>; Garbow, Avi <Garbow.Avi@epa.gov>; Loop, Travis <Loop.Travis@epa.gov>; Lee, Monica <Lee.Monica@epa.gov>; Rowan, Anne <rowan.anne@epa.gov>; Grantham, Nancy <Grantham.Nancy@epa.gov>; Galada, Heather <Galada.Heather@epa.gov>; Rennert, Kevin <Rennert.Kevin@epa.gov>
Subject: Clarifications regarding the application of optimal corrosion control requirements of the lead and copper rule

Water DDs, please see attached to this message a memo which provides important clarifications regarding the application of the optimal corrosion control requirements of the lead and copper rule when a large water system ceases to purchase treated water and switches to a new drinking water source. If you have any questions or concerns related to this memo, please contact me or have your staff contact Maria Lopez-Carbo, Chief of the Protection Branch in the Office of Ground Water and Drinking Water at Lopez.carbo@epa.gov. Thanks, P. Grevatt

Sent from my iPhone

To: Kaplan, Robert[kaplan.robert@epa.gov]
From: Hedman, Susan
Sent: Wed 11/4/2015 2:50:25 AM
Subject: FW: Clarifications regarding the application of optimal corrosion control requirements of the lead and copper rule
image2015-11-03-155158.pdf
ATT00001.txt

FYI

-----Original Message-----
From: Hedman, Susan
Sent: Tuesday, November 03, 2015 8:48 PM
To: Avi Garbow <Garbow.Avi@epa.gov>; Kopocis, Ken <Kopocis.Ken@epa.gov>; Grevatt, Peter <Grevatt.Peter@epa.gov>; Beauvais, Joel <Beauvais.Joel@epa.gov>; Wilson, Shari <Wilson.Shari@epa.gov>
Cc: Meiburg, Stan <Meiburg.Stan@epa.gov>; Distefano, Nichole <DiStefano.Nichole@epa.gov>; Vaught, Laura <Vaught.Laura@epa.gov>
Subject: FW: Clarifications regarding the application of optimal corrosion control requirements of the lead and copper rule

Many thanks to all who worked on this document. These clarifications will prevent a Flint scenario from happening again in the future.

-----Original Message-----
From: Grevatt, Peter
Sent: Tuesday, November 03, 2015 8:23 PM
To: Moraff, Kenneth <Moraff.Ken@epa.gov>; Matthews, Joan <Matthews.Joan@epa.gov>; Capacasa, Jon <Capacasa.jon@epa.gov>; Giattina, James <Giattina.Jim@epa.gov>; Hyde, Tinka <hyde.tinka@epa.gov>; Henry, Timothy <henry.timothy@epa.gov>; Honker, William <honker.william@epa.gov>; Flournoy, Karen <Flournoy.Karen@epa.gov>; Rathbone, Colleen <Rathbone.Colleen@epa.gov>; Bahrman, Sarah <Bahrman.Sarah@epa.gov>; Torres, Tomas <Torres.Tomas@epa.gov>; Opalski, Dan <Opalski.Dan@epa.gov>
Cc: Clark, Becki <Clark.Becki@epa.gov>; Greene, Ashley <Greene.Ashley@epa.gov>; Bergman, Ronald <Bergman.Ronald@epa.gov>; Burneson, Eric <Burneson.Eric@epa.gov>; Hedman, Susan <hedman.susan@epa.gov>; Beauvais, Joel <Beauvais.Joel@epa.gov>; Distefano, Nichole <DiStefano.Nichole@epa.gov>; Kopocis, Ken <Kopocis.Ken@epa.gov>; Wehling, Carrie <Wehling.Carrie@epa.gov>; Garbow, Avi <Garbow.Avi@epa.gov>; Loop, Travis <Loop.Travis@epa.gov>; Lee, Monica <Lee.Monica@epa.gov>; Rowan, Anne <rowan.anne@epa.gov>; Grantham, Nancy <Grantham.Nancy@epa.gov>; Galada, Heather <Galada.Heather@epa.gov>; Rennert, Kevin <Rennert.Kevin@epa.gov>
Subject: Clarifications regarding the application of optimal corrosion control requirements of the lead and copper rule

Water DDs, please see attached to this message a memo which provides important clarifications regarding the application of the optimal corrosion control requirements of the lead and copper rule when a large water system ceases to purchase treated water and switches to a new drinking water source. If you have any questions or concerns related to this memo, please contact me or have your staff contact Maria Lopez-Carbo, Chief of the Protection Branch in the Office of Ground Water and Drinking Water at Lopez.carbo@epa.gov. Thanks, P. Grevatt

Sent from my iPhone

To: Kaplan, Robert[kaplan.robert@epa.gov]; Kempic, Jeffrey[Kempic.Jeffrey@epa.gov]; Schock, Michael[Schock.Michael@epa.gov]; Deltoral, Miguel[deltoral.miguel@epa.gov]; Henry, Timothy[henry.timothy@epa.gov]; Poy, Thomas[poy.thomas@epa.gov]
From: Lytle, Darren
Sent: Wed 11/4/2015 2:08:43 PM
Subject: Tuesday's meeting clarification

Bob,

I wanted to get quick clarification on events for Tuesday morning. I thought I heard that Susan Hedman will be meeting with Rep Kildee at 9 am and that the Task Force will meet with him at 10 am. Is this correct? Will we also meet with Susan? Mike and I just want to make sure our management is aware.

Secondly, we have some contacts in Hurley Medical center, two local universities, and possibly HUD. Would it be possible to make an effort to meet with some of these folks if possible. And there is also the opportunity to see the water plant. What are your thoughts about other meetings we could have while visiting?

Thanks, Darren

Darren A. Lytle, Ph.D., P.E.

Branch Chief (Acting)

U.S. Environmental Protection Agency

26 West Martin Luther King Dr.

Cincinnati, Ohio 45268

Phone: (513) 569-7432

Fax: (513) 487-2543

email: lytle.darren@epa.gov

From: Kaplan, Robert
Sent: Friday, October 30, 2015 6:23 PM
To: Kempic, Jeffrey <Kempic.Jeffrey@epa.gov>; Schock, Michael <Schock.Michael@epa.gov>; Lytle, Darren <Lytle.Darren@epa.gov>; Deltoral, Miguel <deltoral.miguel@epa.gov>; Henry, Timothy <henry.timothy@epa.gov>; Poy, Thomas <poy.thomas@epa.gov>
Subject: FW: EPA Task Force comments on letter sending Flint Corrosion Control Permit

Task Force:

Please see the attached final letter sent today by MDEQ. Please see the exchange below as well.

Many thanks for your quick turnaround today, and thanks particularly to Tom for consolidating the comments into the edited letter.

- Bob

Robert Kaplan

Deputy Regional Administrator

U.S. EPA Region 5

Phone: (312) 886-1499

Cell: (312) 515-9827

Fax: (312) 692-2075

From: Sygo, Jim (DEQ) [mailto:SygoJ@michigan.gov]
Sent: Friday, October 30, 2015 4:36 PM
To: Kaplan, Robert <kaplan.robert@epa.gov>
Subject: RE: EPA Task Force comments on letter sending Flint Corrosion Control Permit

Bob,

Thanks for the edits. Attached is a copy of the letter sent to the City of Flint today. We have made some minor edits but did emphasize that EPA is available for doing analysis and that a certified lab must analyze any sample that will be used tin the calculation of the 90 percentile of the Lead/Copper rule. We also added the additional point for sampling beyond the ten identifies.

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Subject: EPA Task Force comments on letter sending Flint Corrosion Control Permit

Jim,

On behalf of the Task Force, thank you for sending us the corrosion control plan letter this morning for our review. Attached please find EPA's edits to that letter. We also understand that MDEQ will issue an amended permit shortly to take account of the Task Force's comments sent to you today.

EPA encourages the City to take advantage of our offer for analytical support as our laboratory can analyze for a more robust set of parameters. The presence or absence of these additional parameters has provided valuable information and insights in past efforts on identifying potential sources of lead.

The Task Force believes Flint should implement the additional corrosion control treatment as soon as possible. The letter and amended permit are an important step in making sure additional corrosion control takes place quickly and appropriately.

- Bob

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Phone: (312) 886-1499

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To: Hedman, Susan[hedman.susan@epa.gov]; Kaplan, Robert[kaplan.robert@epa.gov]; Hyde, Tinka[hyde.tinka@epa.gov]; Henry, Timothy[henry.timothy@epa.gov]
Cc: Beckmann, Ronna Erin[beckmann.ronna@epa.gov]; Deamer, Eileen[deamer.eileen@epa.gov]
From: Fortin, Denise
Sent: Wed 11/4/2015 3:04:08 PM
Subject: FW: EPA Flint Safe Drinking Water Task Force

Please see note below from Rep. Kildee's office and advise on a response. Thanks.

Denise Fortin
Congressional Liaison
Office of Regional Administrator
U.S. Environmental Protection Agency
312-886-9859

-----Original Message-----
From: Dickinson, Jordan [mailto:Jordan.Dickinson@mail.house.gov]
Sent: Wednesday, November 04, 2015 8:52 AM
To: Fortin, Denise <Fortin.Denise@epa.gov>
Cc: Hovey, Amy <Amy.Hovey@mail.house.gov>; Davis, CatherineM <Davis.CatherineM@epa.gov>; Deamer, Eileen <deamer.eileen@epa.gov>; Beckmann, Ronna Erin <beckmann.ronna@epa.gov>
Subject: RE: EPA Flint Safe Drinking Water Task Force

Are there any additional meetings that the Task Force is planning to have while in Flint?

-----Original Message-----
From: Fortin, Denise [mailto:Fortin.Denise@epa.gov]
Sent: Tuesday, November 03, 2015 7:48 PM
To: Dickinson, Jordan
Cc: Hovey, Amy; Davis, CatherineM; Deamer, Eileen; Beckmann, Ronna Erin
Subject: EPA Flint Safe Drinking Water Task Force

Hey Jordan:

As promised, here's the list of EPA's Flint Safe Drinking Water Task Force Members:

Robert Kaplan, EPA Deputy Regional Administrator

Tom Poy, EPA Region 5 branch chief who runs our safe drinking water programs

Miguel DelToral, Region 5 drinking water expert with particular expertise on lead in drinking water

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Michael Schock, EPA researcher from our Cincinnati lab with expertise in corrosion control and drinking water treatment

Darren Lytle, EPA researcher from our Cincinnati lab with expertise in corrosion control and drinking water treatment

Points of Contact:

Natasha Henderson, Flint City Administrator

Jim Sygo, MDEQ

In addition to Susan Hedman, Tinka Hyde, a press person and I will attend next Tuesday's briefing for your boss.

Please let me know if you have additional questions or need anything else.

Have a good evening - hope you're going home soon!

Thanks,
Denise

Sent from my iPhone

To: Kelley, Jeff[kelley.jeff@epa.gov]; Hedman, Susan[hedman.susan@epa.gov]; Kaplan, Robert[kaplan.robert@epa.gov]; Hyde, Tinka[hyde.tinka@epa.gov]
Cc: Rowan, Anne[rowan.anne@epa.gov]; Beckmann, Ronna Erin[beckmann.ronna@epa.gov]; Harrison, Melissa[Harrison.Melissa@epa.gov]; Abrams, Dan[Abrams.Dan@epa.gov]; Poy, Thomas[poy.thomas@epa.gov]; Fortin, Denise[Fortin.Denise@epa.gov]; Deamer, Eileen[deamer.eileen@epa.gov]; Singer, Joshua[Singer.Joshua@epa.gov]; Arcaute, Francisco[Arcaute.Francisco@epa.gov]; Peterson, John[peterson.john@epa.gov]; Loop, Travis[Loop.Travis@epa.gov]; Purchia, Liz[Purchia.Liz@epa.gov]; Allen, Laura[Allen.Laura@epa.gov]; Henry, Timothy[henry.timothy@epa.gov]
From: Cassell, Peter
Sent: Wed 11/4/2015 5:13:42 PM
Subject: Nov. 4 Flint Clips - AP stories appeared in a number of other outlets

FLINT DRINKING WATER CLIPS

US. EPA Region 5 – as prepared by Peter Cassell *(ORA/OEC/PA)* On Nov. 4

- □□□□□□□□ Federal agency conducting review of Flint water supply (AP/Detroit News)
- □□□□□□□□ U.S. EPA will conduct 'full review' of Flint water crisis (Flint Journal)
- □□□□□□□□ Flint elects a new mayor (Michigan Radio)
- □□□□□□□□ Voters oust Flint mayor amid city's water problems (AP/Detroit News)

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http://www.detroitnews.com/story/news/local/michigan/2015/11/04/federal-agency-conducting-review-flint-water-supply/75143320/

Associated Press 7:25 a.m. EST November 4, 2015

(Photo: David Guralnick / The Detroit News)

Flint — The U.S. Environmental Protection Agency is expected to release results of its review of the troubled municipal water supply in Flint by the end of this week.

Regional administrator Susan Hedman of the Environmental Protection Agency said in a letter Tuesday to U.S. Rep Dan Kildee of Flint that she was asked by the head of the federal agency to carry out the review that the lawmaker requested last month. The Flint Journal reports that Kildee asked for a review of the agency's oversight of state programs assuring safe drinking water in Flint.

Hedman's letter said the agency will conduct a review of action taken by the city to address problems with the quality of its drinking water.

Researchers found elevated blood-lead levels in children whose Flint homes received river water.

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http://www.mlive.com/news/flint/index.ssf/2015/11/us_epa_tells_kildee_it_will_ca.html

By Ron Fonger | rfonger1@mlive.com
on November 03, 2015 at 7:02 PM, updated November 03, 2015 at 7:29 PM

FLINT, MI -- Flint's water crisis is getting a review by the U.S. Environmental Protection Agency, and the results are expected to be known by the end of this week.

EPA Regional Administrator Susan Hedman said in a letter today, Nov. 3, to U.S. Rep Dan Kildee, D-Flint, that she has been asked by the head of the EPA to carry out the review that the congressman requested last month.

The EPA will conduct a "full review of actions taken to address drinking water quality issues in Flint," the letter says.

Kildee's request asked at a minimum for a full review of EPA's oversight of state programs assuring safe drinking water in Flint.

Both Kildee and state Senate Minority Leader Jim Ananich, D-Flint, requested the reviews in separate letters to Gina McCarthy, administrator of the EPA, on Oct. 21.

"In order to restore confidence, and to ensure that these failures never happen again, I believe that the EPA needs to conduct a thorough investigation into the causes of the water problems in Flint," Kildee wrote.

Kildee also requested that the agency answer questions, including whether the EPA was aware that the Michigan Department of Environmental Quality was enforcing the wrong guidelines for water quality in Flint and whether the EPA notified MDEQ that the city should have treated water from the Flint River to make it less corrosive.

Researchers from Virginia Tech university and a Hurley Medical Center doctor discovered high lead levels in Flint's water supply and rising blood lead levels in children since the city switched its water source from Lake Huron to the Flint River in April 2014.

DEQ Director Dan Wyant has said that state regulators mistakenly allowed the city to distribute river water without requiring that it be treated to make it less corrosive.

The corrosive water has caused transmission lines in the city to leach lead at a higher rate into tap water, officials have said.

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http://michiganradio.org/post/flint-elects-new-mayor#stream/0

By Steve Carmody & The Associated Press • 10 hours ago

Flint voters have chosen a new mayor.

Mayor-elect Karen Weaver hugs supporters after winning Tuesday's mayor's race in Flint

Credit Steve Carmody / Michigan Radio

Karen Weaver was surrounded by jubilant supporters last night as she rolled to victory in Flint's mayor's race.

Weaver, a political newcomer, defeated six-year incumbent Dayne Walling by a convincing margin.

"We voted for change so some things have to be different," says Weaver, "but at this point I want to start with putting together a team so we can look and see what we need to do."

During the campaign, Weaver repeatedly hammered Walling on his handling of the city's drinking water crisis.

Flint switched from Detroit's system to water from the Flint River last year in a cost-cutting move. Officials recently confirmed elevated blood-lead levels were found in children.

The city reconnected to Detroit in hopes of resolving the emergency as it awaits completion of a pipeline to Lake Huron.

Walling and other officials repeatedly told residents the water was safe but blamed state and federal agencies for the problems. The original switch happened while Flint was under state emergency financial management.

Flint Mayor Dayne Walling hugged and shared a few words with supporters at his election night watch party after he defeat became evident.

Credit Steve Carmody / Michigan Radio

The campaign behind her and Flint's water crisis, along with other problems ahead of her, Weaver has to prepare to take over the mayor's office next week.

"I don't want to make any quick decisions, hasty decisions, I want it to be very well thought out," says Weaver, who plans to put together a transition team to prepare for her taking office next Monday.

For his part, a somber Dayne Walling hugged supporters at his election night watch party.

Walling declined to talk to reporters.

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http://www.detroitnews.com/story/news/local/michigan/2015/11/03/flint-mayor-water-problems/75126158/

Associated Press 11:27 a.m. EST November 4, 2015

Flint — Voters have ousted the mayor of Flint, Michigan, amid a fallout over the city's drinking water problems.

Newcomer Karen Weaver beat incumbent Dayne Walling in Tuesday's election. Walling led the city amid the public health emergency.

Flint switched from nearby Detroit's system to water from the Flint River last year in a cost-cutting move. Officials recently confirmed elevated blood-lead levels were found in children.

The city reconnected to Detroit in hopes of resolving the emergency as it awaits completion of a pipeline to Lake Huron.

Walling and other officials repeatedly told residents the water was safe but blamed state and federal agencies for the problems. The original switch happened while Flint was under state emergency financial management.

Weaver, a psychologist, focused on water issues during her campaign. She said Flint needs leaders who will "speak out."

###

To: Lytle, Darren[Lytle.Darren@epa.gov]; Kempic, Jeffrey[Kempic.Jeffrey@epa.gov]; Schock, Michael[Schock.Michael@epa.gov]; Deltoral, Miguel[deltoral.miguel@epa.gov]; Henry, Timothy[henry.timothy@epa.gov]; Poy, Thomas[poy.thomas@epa.gov]
From: Kaplan, Robert
Sent: Wed 11/4/2015 9:19:41 PM
Subject: RE: Tuesday's meeting clarification

Thanks, Darren. Good ideas. I just gave you a call. I'm scheduling a phone call for ½ hour on Friday so we can discuss these and other issues.

- Bob

Robert Kaplan

Deputy Regional Administrator

U.S. EPA Region 5

Phone: (312) 886-1499

Personal Phone / Ex. 6

Fax: (312) 692-2075

From: Lytle, Darren
Sent: Wednesday, November 04, 2015 8:09 AM
To: Kaplan, Robert <kaplan.robert@epa.gov>; Kempic, Jeffrey <Kempic.Jeffrey@epa.gov>; Schock, Michael <Schock.Michael@epa.gov>; Deltoral, Miguel <deltoral.miguel@epa.gov>; Henry, Timothy <henry.timothy@epa.gov>; Poy, Thomas <poy.thomas@epa.gov>
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To: Hedman, Susan[hedman.susan@epa.gov]; Kaplan, Robert[kaplan.robert@epa.gov]; Hyde, Tinka[hyde.tinka@epa.gov]; Henry, Timothy[henry.timothy@epa.gov]
Cc: Deamer, Eileen[deamer.eileen@epa.gov]; Beckmann, Ronna Erin[beckmann.ronna@epa.gov]
From: Fortin, Denise
Sent: Wed 11/4/2015 11:35:29 PM
Subject: FW: EPA Flint Safe Drinking Water Task Force

Please advise. Thanks.

Denise Fortin
Congressional Liaison
Office of Regional Administrator
U.S. Environmental Protection Agency
312-886-9859

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From: Dickinson, Jordan [mailto:Jordan.Dickinson@mail.house.gov]
Sent: Wednesday, November 04, 2015 5:34 PM
To: Hovey, Amy <Amy.Hovey@mail.house.gov>; Fortin, Denise <Fortin.Denise@epa.gov>
Cc: Davis, CatherineM <Davis.CatherineM@epa.gov>; Deamer, Eileen <deamer.eileen@epa.gov>; Beckmann, Ronna Erin <beckmann.ronna@epa.gov>
Subject: RE: EPA Flint Safe Drinking Water Task Force

Any update on this or at least to know if that is something you are working on?

-----Original Message-----
From: Hovey, Amy
Sent: Wednesday, November 04, 2015 9:53 AM
To: Dickinson, Jordan; Fortin, Denise
Cc: Davis, CatherineM; Deamer, Eileen; Beckmann, Ronna Erin
Subject: RE: EPA Flint Safe Drinking Water Task Force

Also, it would be great if we could get an agenda for the Task Force meeting.

Thanks!
Amy

Amy Hovey
District Chief of Staff
Congressman Dan Kildee (MI-05)
111 East Court Street, #3B.
Flint, MI 48502
Phone: 810-238-8627
www.dankildee.house.gov

http://dankildee.house.gov/newsletter-subscription/

WE MOVED! Please note that our OFFICES HAVE RELOCATED

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From: Dickinson, Jordan
Sent: Wednesday, November 04, 2015 9:52 AM

To: Fortin, Denise
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Subject: RE: EPA Flint Safe Drinking Water Task Force

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Subject: EPA Flint Safe Drinking Water Task Force

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Jeff Kempic, EPA regulatory manager for the lead and copper rule

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Darren Lytle, EPA researcher from our Cincinnati lab with expertise in corrosion control and drinking water treatment

Points of Contact:

Natasha Henderson, Flint City Administrator

Jim Sygo, MDEQ

In addition to Susan Hedman, Tinka Hyde, a press person and I will attend next Tuesday's briefing for your boss.

Please let me know if you have additional questions or need anything else.

Have a good evening - hope you're going home soon!

Thanks,
Denise

Sent from my iPhone

To: Hedman, Susan[hedman.susan@epa.gov]
From: Grevatt, Peter
Sent: Thur 11/5/2015 1:30:30 AM
Subject: Re: MI Public Radio LCR Interview readout and audio

Thx.

Sent from my iPhone

On Nov 4, 2015, at 7:52 PM, Hedman, Susan <hedman.susan@epa.gov> wrote:

Thanks Peter – great interview.

From: Lee, Monica
Sent: Wednesday, November 04, 2015 5:59 PM
To: Hedman, Susan <hedman.susan@epa.gov>; Cannon, Phillippa <Cannon.Phillippa@epa.gov>; Rowan, Anne <rowan.anne@epa.gov>; Grantham, Nancy <Grantham.Nancy@epa.gov>; Loop, Travis <Loop.Travis@epa.gov>; Grevatt, Peter <Grevatt.Peter@epa.gov>; Cassell, Peter <cassell.peter@epa.gov>
Subject: MI Public Radio LCR Interview readout and audio

Attached is the audio from Peter's interview with Michigan Public Radio this afternoon. He did an excellent job of giving comprehensive, high level answers to the reporter's at times very detailed questions.

He walked the reporter through some general background on the LCR, including the original intent of the rule and what changes EPA is looking to make to ensure better corrosion control as outlined in the memo sent to the regions last night. He also explained primacy, putting it in context of how the broader SDWA works. He also gave a good closing statement reiterating EPA's commitment to providing safe drinking water, acknowledging that we're continuing to improve LCR to be even more protective of public health.

The more intricate questions involved testing methodology, specifically talking through what first draw sampling entails. He explained the complications around replacing lead lines, including partial replacements and the problems that could occur as a result. Again, Peter was able to bring these detailed questions back into the context of what EPA is doing moving forward to prevent situations like Flint from happening again.

The reporter was very appreciative of the time with Peter and didn't get into any direct line of questioning about Flint. She'll be ready to talk to Susan when we're able to make it happen next week.

Thanks for everyone's work on this.

Monica Lee

Environmental Protection Agency

Region 9, San Francisco

Direct: 415-972-3165

Cell: Personal Phone / Ex. 6

lee.monica@epa.gov

To: Henry, Timothy[henry.timothy@epa.gov]
From: Grevatt, Peter
Sent: Thur 11/5/2015 11:54:53 AM
Subject: Fwd: MI Public Radio LCR Interview readout and audio
Peter Grevatt-MI Public Radio LCR Interview.m4a
ATT00001.htm

Here's the summary and the tape Tim. Susan seems good with the outcome.

Sent from my iPhone

Begin forwarded message:

> **From:** "Lee, Monica" <Lee.Monica@epa.gov>
> **Date:** November 4, 2015 at 6:59:00 PM EST
> **To:** "Hedman, Susan" <hedman.susan@epa.gov>, "Cannon, Phillippa" <Cannon.Phillippa@epa.gov>, "Rowan, Anne" <rowan.anne@epa.gov>, "Grantham, Nancy" <Grantham.Nancy@epa.gov>, "Loop, Travis" <Loop.Travis@epa.gov>, "Grevatt, Peter" <Grevatt.Peter@epa.gov>, "Cassell, Peter" <cassell.peter@epa.gov>
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From: Deltoral, Miguel
Sent: Thur 11/5/2015 2:07:38 PM
Subject: RE: Tuesday's meeting clarification

I agree with Darren and I am also getting concerned about timing and all the prep work that we have to do. We need to get some stuff down asap or things are going to get considerably more complicated after winter takes hold in Flint. I think we really need to talk to the City folks about what the ORD needs are while we are out there and try to get some at least verbal commitment from them. We are going to need some pipe excavated for the pipe loops in the treatment plant and we are in November, so folks need to keep in mind that if we don't get those pipes out now, we won't have anything to work with until Spring. Ahead of that, we don't have any information on where these lead lines actually are and we obviously have to know where they are to extract them. The records are old, so we will need to verify that the sites still have lead lines. I also need to know who the players are going to be (for City of Flint, Universities, etc.) before I can start discussing needs with our lab or working on the required QAPP.

Miguel A. Del Toral
Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

From: Kaplan, Robert
Sent: Wednesday, November 4, 2015 03:19 PM
To: Lytle, Darren; Kempic, Jeffrey; Schock, Michael; Deltoral, Miguel; Henry, Timothy; Poy, Thomas
Subject: RE: Tuesday's meeting clarification

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Branch Chief (Acting)
U.S. Environmental Protection Agency
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Cincinnati, Ohio 45268
Phone: (513) 569-7432
Fax: (513) 487-2543
email: lytle.darren@epa.gov<mailto:lytle.darren@epa.gov>

From: Kaplan, Robert
Sent: Friday, October 30, 2015 6:23 PM
To: Kempic, Jeffrey <Kempic.Jeffrey@epa.gov<mailto:Kempic.Jeffrey@epa.gov>>; Schock, Michael <Schock.Michael@epa.gov<mailto:Schock.Michael@epa.gov>>; Lytle, Darren <Lytle.Darren@epa.gov<mailto:Lytle.Darren@epa.gov>>; Deltoral, Miguel <deltoral.miguel@epa.gov<mailto:deltoral.miguel@epa.gov>>; Henry, Timothy <henry.timothy@epa.gov<mailto:henry.timothy@epa.gov>>; Poy, Thomas <poy.thomas@epa.gov<mailto:poy.thomas@epa.gov>>
Subject: FW: EPA Task Force comments on letter sending Flint Corrosion Control Permit

Task Force:

Please see the attached final letter sent today by MDEQ.   Please see the exchange below as well.

Many thanks for your quick turnaround today, and thanks particularly to Tom for consolidating the comments into the edited letter.

- Bob

Robert Kaplan
Deputy Regional Administrator
U.S. EPA Region 5
Phone: (312) 886-1499
Cell: (Personal Phone / Ex. 6
Fax: (312) 692-2075

From: Sygo, Jim (DEQ) [mailto:SygoJ@michigan.gov]
Sent: Friday, October 30, 2015 4:36 PM
To: Kaplan, Robert <kaplan.robert@epa.gov<mailto:kaplan.robert@epa.gov>>
Subject: RE: EPA Task Force comments on letter sending Flint Corrosion Control Permit

Bob,
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DEQ will be sampling 2 more schools on Saturday as we discussed earlier in the week. Plumbing assessments were completed today.

From: Kaplan, Robert [mailto:kaplan.robert@epa.gov]
Sent: Friday, October 30, 2015 4:26 PM
To: Sygo, Jim (DEQ)
Subject: EPA Task Force comments on letter sending Flint Corrosion Control Permit

Jim,

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EPA encourages the City to take advantage of our offer for analytical support as our laboratory can analyze for a more robust set of parameters. The presence or absence of these additional parameters has provided valuable information and insights in past efforts on identifying potential sources of lead.
The Task Force believes Flint should implement the additional corrosion control treatment as soon as possible. The letter and amended permit are an important step in making sure additional corrosion control takes place quickly and appropriately.

- Bob

Robert Kaplan
Deputy Regional Administrator
U.S. EPA Region 5
Phone: (312) 886-1499
Cell: (312) 515-9827
Fax: (312) 692-2075

To: Deltoral, Miguel[deltoral.miguel@epa.gov]; Kaplan, Robert[kaplan.robert@epa.gov]; Lytle, Darren[Lytle.Darren@epa.gov]; Kempic, Jeffrey[Kempic.Jeffrey@epa.gov]; Henry, Timothy[henry.timothy@epa.gov]; Poy, Thomas[poy.thomas@epa.gov]
From: Schock, Michael
Sent: Thur 11/5/2015 2:46:09 PM
Subject: RE: Tuesday's meeting clarification

To add to Miguel's concern, we need to find out if there's a commitment for the DBP, Coagulation/Filtration, disinfection, softening (need or not need), pH adjustment, and other necessary studies on how they're going to handle the Lake Huron water change. That is necessary to provide the background water quality for the second set of pipe rigs, which would then look at phosphate dosage optimization with the new water. Since that schedule doesn't seem to be very flexible for Flint, the studies need to start absolutely as soon as possible.

--Mike

-----Original Message-----
From: Deltoral, Miguel
Sent: Thursday, November 05, 2015 9:08 AM
To: Kaplan, Robert <kaplan.robert@epa.gov>; Lytle, Darren <Lytle.Darren@epa.gov>; Kempic, Jeffrey <Kempic.Jeffrey@epa.gov>; Schock, Michael <Schock.Michael@epa.gov>; Henry, Timothy <henry.timothy@epa.gov>; Poy, Thomas <poy.thomas@epa.gov>
Subject: RE: Tuesday's meeting clarification

I agree with Darren and I am also getting concerned about timing and all the prep work that we have to do. We need to get some stuff down asap or things are going to get considerably more complicated after winter takes hold in Flint. I think we really need to talk to the City folks about what the ORD needs are while we are out there and try to get some at least verbal commitment from them. We are going to need some pipe excavated for the pipe loops in the treatment plant and we are in November, so folks need to keep in mind that if we don't get those pipes out now, we won't have anything to work with until Spring. Ahead of that, we don't have any information on where these lead lines actually are and we obviously have to know where they are to extract them. The records are old, so we will need to verify that the sites still have lead lines. I also need to know who the players are going to be (for City of Flint, Universities, etc.) before I can start discussing needs with our lab or working on the required QAPP.

Miguel A. Del Toral
Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

From: Kaplan, Robert
Sent: Wednesday, November 4, 2015 03:19 PM
To: Lytle, Darren; Kempic, Jeffrey; Schock, Michael; Deltoral, Miguel; Henry, Timothy; Poy, Thomas
Subject: RE: Tuesday's meeting clarification

Thanks, Darren. Good ideas. I just gave you a call. I'm scheduling a phone call for ½ hour on Friday so we can discuss these and other issues.

- Bob

Robert Kaplan
Deputy Regional Administrator

U.S. EPA Region 5
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Cell: Personal Phone / Ex. 6
Fax: (312) 692-2075

From: Lytle, Darren
Sent: Wednesday, November 04, 2015 8:09 AM
To: Kaplan, Robert <kaplan.robert@epa.gov>; Kempic, Jeffrey <Kempic.Jeffrey@epa.gov>; Schock, Michael <Schock.Michael@epa.gov>; Deltoral, Miguel <deltoral.miguel@epa.gov>; Henry, Timothy <henry.timothy@epa.gov>; Poy, Thomas <poy.thomas@epa.gov>
Subject: Tuesday's meeting clarification

Bob,

I wanted to get quick clarification on events for Tuesday morning. I thought I heard that Susan Hedman will be meeting with Rep Kildee at 9 am and that the Task Force will meet with him at 10 am. Is this correct? Will we also meet with Susan? Mike and I just want to make sure our management is aware.

Secondly, we have some contacts in Hurley Medical center, two local universities, and possibly HUD. Would it be possible to make an effort to meet with some of these folks if possible. And there is also the opportunity to see the water plant. What are your thoughts about other meetings we could have while visiting?

Thanks, Darren

Darren A. Lytle, Ph.D., P.E.
Branch Chief (Acting)
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Cincinnati, Ohio 45268
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Fax: (312) 692-2075

To: Kelley, Jeff[kelley.jeff@epa.gov]; Hedman, Susan[hedman.susan@epa.gov]; Kaplan, Robert[kaplan.robert@epa.gov]; Hyde, Tinka[hyde.tinka@epa.gov]
Cc: Rowan, Anne[rowan.anne@epa.gov]; Beckmann, Ronna Erin[beckmann.ronna@epa.gov]; Harrison, Melissa[Harrison.Melissa@epa.gov]; Abrams, Dan[Abrams.Dan@epa.gov]; Poy, Thomas[poy.thomas@epa.gov]; Fortin, Denise[Fortin.Denise@epa.gov]; Deamer, Eileen[deamer.eileen@epa.gov]; Singer, Joshua[Singer.Joshua@epa.gov]; Arcaute, Francisco[Arcaute.Francisco@epa.gov]; Peterson, John[peterson.john@epa.gov]; Loop, Travis[Loop.Travis@epa.gov]; Purchia, Liz[Purchia.Liz@epa.gov]; Allen, Laura[Allen.Laura@epa.gov]; Henry, Timothy[henry.timothy@epa.gov]; Arcaute, Francisco[Arcaute.Francisco@epa.gov]
From: Cassell, Peter
Sent: Thur 11/5/2015 4:48:43 PM
Subject: RE: Nov. 4 Flint Clips - AP stories appeared in a number of other outlets
Nov 5 Flint Clips.docx

FLINT DRINKING WATER CLIPS

US. EPA Region 5 – as prepared by Peter Cassell *(ORA/OEC/PA)* On Nov. 5

- How did the Flint water crisis began and what will it mean for the families who drank the water? (ABC 7 Detroit)

- Mayor-Elect Says Flint ‘Needs To Be Declared A National Disaster Area’ (CBS Radio Detroit)

- Flint mayor leaving office after defeat, but not politics (Michigan Radio)

- County agencies prepare to distribute water filter replacement cartridges in Flint

- New EPA report warns of potential large-scale lead releases in Flint water

- Try every way to get to bottom of Flint water crisis (Detroit Free Press Opinion)

- EPA report warns of more potential Flint water problems (AP/Detroit News)

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http://www.wxyz.com/news/how-did-the-flint-water-crisis-began-and-what-will-it-mean-for-the-families-who-drank-the-water

12:01 AM, Nov 5, 2015

Video report at link

(WXYZ) - 7 Action News Investigator Jim Kiertzner has a stunning investigation into the Flint water crisis and the severe and long-lasting impact it will have on countless families!

Jim has talked with a Flint mother about the many health issues her family is dealing with after drinking the contaminated water for months.

Jim also takes a deeper look into how the issue began and the warning signs that some say were ignored.

See his complete report Thursday on 7 Action News at 11 p.m.

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http://detroit.cbslocal.com/2015/11/04/mayor-elect-says-flint-needs-to-be-declared-a-national-disaster-area/#.VjpSrSxQ850.twitter

November 4, 2015 1:44 PM

FLINT (WWJ/AP) – Flint Mayor-Elect Karen Weaver says the city is in desperate need of federal help over its water crisis.

“Flint really needs to be declared a national disaster area,” Weaver, who will be Flint’s first female mayor when she’s sworn in next Monday, told WWJ’s Beth Fisher.

Flint last month reconnected to Detroit’s water system in hopes of resolving a health emergency spurred by a switch to river water that was aimed at saving money but left children with elevated lead levels.

Residents were urged not to drink the water, a public health emergency was declared and it cost about $12 million to make the switch.

“We’ve got some challenges here because, even though we’ve switched back to the Detroit water, our infrastructure has been damaged,” Weaver said. “And so we still have issues with lead coming though the water.”

Using the Flint River was supposed to be an interim source until the city can join a new system getting water from Lake Huron that’s scheduled to be completed next year.

Residents complained about the smell, taste and appearance of the river water, and reported adverse health reactions. A General Motors plant stopped using the water because it was causing excessive rust.

Officials said Flint residents might still see discoloration or notice some taste and odor issues during the transition back to Detroit water as the city's primary interim source.

"We know that this city nor the state has the resources to handle this, so we need some federal assistance," she said. "So that's one of the things that, you know, we've talked about. And so I need to reach out and work with our state representatives and our senator and work with the governor to get this thing going, because we need help in the city of Flint."

Gov. Rick Snyder already approved $9.3 million in water-related aid for Flint that includes money for home water filters inspections, health services and lab testing.

Michigan Senate Minority Leader Jim Ananich, of Flint, says there are a lot of questions yet to be answered concerning the city's water woes.

Speaking live on WWJ on Wednesday, Ananich said job number one is making sure the water is totally safe for residents.

"The source of the water is much safer now," Ananich said. "It still takes time for the corrosion control to recoat the pipes and have water that people can be assured is drinkable, so people still need to take precautions.

"But now we're sort of in the phase of investigating what happened."

Flint began using the Flint River for its water supply in April of 2014.

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http://michiganradio.org/post/flint-mayor-leaving-office-after-defeat-not-politics

By Steve Carmody • 18 hours ago

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After six years at city hall, Flint Mayor Dayne Walling only has a few days to clean out his office to make way for his successor.

Flint Mayor Dayne Walling prepares to leave office after 6 years

Walling lost his bid for a third term yesterday. Political newcomer Karen Weaver defeated Walling by nearly 2,000 votes. She'll be sworn in next week.

For much of the past decade, Dayne Walling has either been running for Flint mayor or serving as mayor.

In 2007, he lost to former Mayor Don Williamson. In 2009, he won a partial term as mayor after Williamson resigned. Walling was elected to a full term in 2011.

As he prepares to leave office, Walling is thanking his supporters and pondering his future.

"I'm going to take a couple months to reflect on my time in service and the lessons learned," says Walling, "and have conversations with a lot of people I trust on how I can continue to contribute to Flint and to Michigan's recovery and turnaround."

Walling says he plans to continue to be part of "public life" and says running again for elected office is a strong possibility.

"I'm not ruling out a future run for mayor, or for legislature or another office," says Walling.

The outgoing mayor is still stinging from his defeat this week.

Walling says he's "frustrated" that his critics were able to convince many voters that he bore responsibility for the city's drinking water problems.

During an 18-month experiment, Flint got its tap water from its namesake river. The move proved disastrous, starting with complaints about the water's taste and smell, and then escalating to problems with dangerously high chemical and lead levels. The crisis eventually became the main issue in the campaign.

Walling blames state and federal agencies for not doing their job to ensure the water met safety standards.

He objects to those who lumped him with state appointed emergency managers who made decisions about the city's water system.

"That was done to score political points," says Walling. "It wasn't an accurate depiction. But campaigns are tough."

Walling also knows it's tough starting a new job as mayor.

Karen Weaver will be sworn into office next Monday. She's setting up a transition team to help her move into the new job.

Walling says when he became mayor he had more than a dozen top appointments to make to city hall departments.

But the mayor says now much of that authority rests in the hands of Flint's city administrator.

"The city administrator is responsible for all the city's personnel," says Walling. "It's a different process. This will be the first time the city will be going through this following an election transition. We'll all be watching to see how it goes."

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http://www.mlive.com/news/flint/index.ssf/2015/11/mdhhs_will_distribute_water_fi.html

By Jiquanda Johnson | jjohns16@mlive.com
on November 05, 2015 at 5:00 AM, updated November 05, 2015 at 7:47 AM

FLINT, MI - Genesee County agencies are set to give Flint residents replacement cartridges for filters distributed in the city to prevent lead from getting into their drinking water.

The Genesee County Health Department issued a press release reminding city residents that water filters will need to be changed soon.

The Genesee County Community Action Resource Department and Michigan Department of Human Services started distributing replacement cartridges Wednesday, Nov. 4.

GCCARD clients can pick up cartridges from 9 a.m. to 4 p.m. Monday through Friday at 601 N. Saginaw St., Suite A or at 2727 Lippincott Boulevard.

Michigan Department of Human Services will distribute replacement cartridges at the same time but at its 125 E. Union St. and 4809 Clio Road offices.

Residents must know whether their filter is a Pur or Brita system when picking up cartridges.

Flint residents who own a Pur water filter system should receive a blinking light warning on the filter when it needs to be changed. Officials say if the yellow light is blinking it is a warning that the filter will need to be changed soon. A blinking red light means that the filter needs to be changed immediately. According to the manufacturer, the system can filter up to 100 gallons of water per filter cartridge.

Home Depot District Manager, Don Mandeville Demonstrates Free Water Filters To Be Given To Flint Residents Home Depot District Manager, Don Mandeville Demonstrates Free Water Filters To Be Given To Flint Residents

Owners of the Brita water filtering system also have a blinking light indicator. A red light indicates the filter needs to be changed immediately.

For more information on cartridge distribution sites, call 2-1-1 or visit the Genesee County Health Department's website here.

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http://www.mlive.com/news/flint/index.ssf/2015/11/new_epa_report_warns_of_potent.html

By Ron Fonger | rfonger1@mlive.com
on November 04, 2015 at 8:43 PM, updated November 05, 2015 at 9:08 AM

FLINT, MI — City residents should be warned of the potential risk of increased lead in drinking water when crews do underground work that could dislodge scale and sediment in water pipes, the U.S. Environmental Protection Agency told the city and state Wednesday, Nov. 4.

A final report from the EPA regarding high lead levels in drinking water at three homes in Flint warns of the danger, not only of lead leaching directly into water from lead service lines leading to individual homes, but for lead to have spread to pipes made of other materials, such as galvanized pipe or interior plumbing.

"(The) presence of lead pipes over many years has likely resulted in the accumulation of lead in the scales within non-lead pipes downstream of the lead pipe and physical disturbances to (either) portions of the service lines have the potential to release large amounts of scale and sediment that could pose an immediate and acute health hazard to the residents," the report said.

A cover letter on the EPA report said it was sent to the state Department of Environmental Quality and the city of Flint.

Both Brad Wurfel, a spokesman for the DEQ, and Flint Public Works Director Howard Croft said they had not yet reviewed the new EPA report and could not comment on it immediately.

Marc Edwards, a professor from Virginia Tech university, said the EPA report is not surprising, confirming previous studies that have warned of the effect of disturbing water pipes where lead has built up in scale and sediment.

In the case of Flint's water transmission system, the problem is especially serious because of the large number of lead service lines and the failure to treat Flint River water to make it less corrosive.

Although the city was reconnected to the Detroit water system last month after researchers found increasing lead levels in Flint water and in the blood of infants and children in the city, the city's use of corrosive river water contributed to the potential for scale and sediment containing lead to break free from pipes and enter tap water, Edwards said.

DEQ Director Dan Wyant last month said his agency mistakenly never required Flint to treat river water to make it less corrosive because it followed the wrong federal regulations for the water system.

Edwards said the report on Flint's lead-in-water crisis could help lay the groundwork for new federal regulation on partial replacement of lead service lines and protocols for disturbance of water lines containing lead.

The EPA letter said its report on lead in Flint water is being sent to the National Drinking Water Advisory Council for discussion during its upcoming meeting later this month.

It suggests that underground extraction and handling procedures be developed by the federal government that would minimize the potential for disturbing lead in water lines.

"I think it's a big admission that these lead pipes are dangerous," Edwards said of the potential for large releases of scale and sediment containing lead when pipes are disturbed.

The EPA report said that, even with corrosion control having been returned to Flint's water system after 17 months, "physical disturbances will be capable of dislodging the high-lead bearing scale and sediment from non-lead pipes as well as lead pipes. ..."

"At a minimum, immediate training and public education on the potential risks posed by physical disturbances to service lines should be developed by communications experts and provided to residents, community groups, elected officials, health departments, pediatricians and gynecologists, water and non-water utilities, plumbing organizations and contractors," the report said.

"Residents should be notified of scheduled work by water and non-water utilities and informed of the potential risk of increased lead levels due to these disturbances."

A public health emergency was declared for Flint last month after Edwards' researchers and a Hurley Medical Center doctor found rising lead levels in the city since Flint began using river water that had not been treated to reduce corrosion.

Reviews of the actions that led to the spike in lead levels have already been initiated at the local, state and national levels.

Health officials have advised city residents to continue using lead-clearing water filters, thousands of which have been distributed in the city, to combat lead in the water supply.

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http://www.freep.com/story/opinion/columnists/nancy-kaffer/2015/11/05/flint-water-investigation/75162216/

By Nancy Kaffer, Detroit Free Press Columnist 10:46 a.m. EST November 5, 2015

Buy Photo

There's that old parable about a group of blind men trying to describe an elephant: One touches the tusk, one the trunk, another the legs. Each account differs; no one could ever imagine an elephant was the subject of such disparate descriptions.

That's what the efforts to determine exactly how the City of Flint's drinking water was compromised bring to mind.

State Senate Minority Leader Jim Ananich, a Flint Democrat, is asking Senate Majority Leader Arlan Meekhof, a West Olive Republican, to create a legislative committee to examine exactly what went wrong. Meekhof hasn't formally responded, but he should take Ananich's proposal seriously. A legislative committee's examination of the Flint debacle -- with subpoena power, conducted in the public eye -- could prove a valuable tool not just for figuring out what went wrong, but recommending policy changes to ensure that it can't happen again.

Back in 2013, Flint opted to join a new regional water authority, and decided in 2014 to pump its water from the Flint River while the new system was under construction. Because the city's treatment plant didn't add the right chemicals to the water, lead leached from aging service lines into the river water, contaminating the city's drinking supply and pushing lead levels up in more Flint kids. The Michigan Department of Environmental Quality now admits it erred in OK'ing Flint's water treatment plan.

Gov. Rick Snyder has formed a task force to deliver an "after-action report." The task force's four members are men of integrity and expertise in relevant fields; there's no question that they're committed to finding the truth. But because that task force doesn't have subpoena power, it's relying on cooperation from the agencies involved. (And if the way those entities respond to media requests is anything to go by, good luck, friends.) Worse, the governor does not consider his office subject to the state law that requires government agencies to disclose records -- if it's created on the public dime, the public should have access, the logic behind the law goes.

But because Snyder, and other Michigan governors, have held themselves apart from the law almost every other state and local government entity must comply with, the task force's findings aren't guaranteed to become public; rather, when and whether the task force's work is complete, the public will gain access to its findings and conclusions only at the governor's discretion.

The EPA is conducting its own review, at the behest of EPA Administrator Gina McCarthy, who was asked by Ananich and U.S. Rep. Dan Kildee, also a Flint Democrat, to investigate. But the EPA is charged with overseeing drinking water standards, and months of emails obtained under the state's Freedom of Information Act show MDEQ and the EPA exchanged numerous emails about the Flint water situation; both agencies knew lead levels had risen in the city's water months before taking action.

Ananich has also asked the state Auditor General to examine some aspects of the decision-making process.

But all of these are imperfect solutions.

As Ananich notes in a letter to Meekhof, sent Thursday, some investigations lack authority to compel disclosure, while others require government agencies to examine themselves.

A legislative committee has its own pitfalls -- politics, politics, politics -- and it shouldn't replace the other, ongoing investigations and examinations of the Flint water crisis. But the transparency and accountability it could lend to the process could be invaluable.

Meekhoff -- and other Senate Republicans -- should support this effort. There's too often a temptation to divide these things up along party lines. But access to clean, safe drinking water shouldn't be a partisan issue. If it happened in Flint, where else could it happen? That's the question Ananich, Meekhof and the state Senate should try to answer.

Contact Nancy Kaffer: nkaffer@freepress.com

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http://www.detroitnews.com/story/news/local/michigan/2015/11/05/flint-water/75205332/

Associated Press 8:46 a.m. EST November 5, 2015

Flint — Flint residents should be warned of the potential risk of increased lead in drinking water when crews do underground work that could affect pipes, according to a report from the U.S. Environmental Protection Agency.

The recommendation was included in an EPA report released Wednesday about high lead levels in drinking water at three homes. The EPA said the report is being sent to the National Drinking Water Advisory Council for discussion next month, The Flint Journal reported.

The report warns that lead can not only get from aging lead lines into individual homes, but can spread to galvanized pipe or interior plumbing. Lead that builds up inside non-lead pipes can be released when it is disturbed by construction or other work.

According to the report, this has “the potential to release large amounts of scale and sediment that could pose an immediate and acute health hazard to the residents.”

Flint switched from Detroit's water system last year to Flint River water in a cost-cutting move while under state emergency financial management. The Flint River was supposed to be an interim source until the city could join a new system getting water from Lake Huron that is scheduled to be completed next year.

Residents complained, however, about the taste, smell and appearance of river water coming into their homes and businesses. Officials long maintained the water met safety standards, but it was later determined that corrosive river water was drawing lead from aging pipes.

Marc Edwards, a Virginia Tech researcher who helped raise concerns about Flint's water system, said the EPA report confirms previous studies that have warned of the effect of disturbing water pipes where lead has built up in scale and sediment.

"I think it's a big admission that these lead pipes are dangerous," Edwards said.

The report was released a day after voters ousted Flint's mayor amid a fallout over the city's drinking water problems. In Tuesday's election, newcomer Karen Weaver beat incumbent Dayne Walling, who led the city amid the public health emergency.

Walling and other officials blamed state and federal agencies for the city's water problems. The city has since switched back to Detroit's water system.

###

From: Porter, Andrea
Location: R5WD-ConfCallLine-A/Conference-Call-Line/R5-WATER
Importance: Normal
Subject: Flint Corrosion Control Treatment and Sampling Discussion
Start Date/Time: Thur 11/5/2015 7:30:00 PM
End Date/Time: Thur 11/5/2015 8:00:00 PM

Hi All,

Miguel sends his apologies for the short notice, but needs a meeting today to discuss Flint Corrosion Control Treatment and Sampling.

The call-in information is as follows:
Phone: 1-877-226-9607
Nonresponsive Conference Code
Nonresponsive Conference Code

Thanks,
Andrea

To: Glowacki, Joanna[glowacki.joanna@epa.gov]; Poy, Thomas[poy.thomas@epa.gov]; Damato, Nicholas[damato.nicholas@epa.gov]; Shoven, Heather[shoven.heather@epa.gov]; Porter, Andrea[porter.andrea@epa.gov]
From: Deltoral, Miguel
Sent: Fri 11/6/2015 1:27:20 PM
Subject: FW: Clarifications regarding the application of optimal corrosion control requirements of the lead and copper rule
image2015-11-03-155158.pdf
ATT00001.txt

Attorney Client / Ex. 5

Miguel A. Del Toral
Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

From: Glowacki, Joanna
Sent: Wednesday, November 4, 2015 07:58 AM
To: Frey, Bert; Nelson, Leverett; Thompson, Robert; Lupton, Jane; Lee, Sandra
Cc: Poy, Thomas; Shoven, Heather; Deltoral, Miguel
Subject: FW: Clarifications regarding the application of optimal corrosion control requirements of the lead and copper rule

Joanna S. Glowacki
Associate Regional Counsel
U.S. Environmental Protection Agency
Region 5
77 West Jackson Boulevard (C-14J)
Chicago, Illinois 60604
312-353-3757
312-385-5464 fax

-----Original Message-----
From: Darman, Leslie
Sent: Wednesday, November 04, 2015 7:33 AM

To: Glowacki, Joanna <glowacki.joanna@epa.gov>
Subject: FW: Clarifications regarding the application of optimal corrosion control requirements of the lead and copper rule

FYI

Leslie Darman
Office of General Counsel
Water Law Office
202-564-5452

-----Original Message-----
From: Wehling, Carrie
Sent: Wednesday, November 04, 2015 8:29 AM
To: Darman, Leslie <Darman.Leslie@epa.gov>
Cc: Neugeboren, Steven <Neugeboren.Steven@epa.gov>
Subject: FW: Clarifications regarding the application of optimal corrosion control requirements of the lead and copper rule

Here it is.

Caroline (Carrie) Wehling
Assistant General Counsel
Water Law Office
U.S. Environmental Protection Agency
Washington DC 20004
202-564-5492
wehling.carrie@epa.gov

-----Original Message-----
From: Grevatt, Peter
Sent: Tuesday, November 03, 2015 9:23 PM
To: Moraff, Kenneth <Moraff.Ken@epa.gov>; Matthews, Joan <Matthews.Joan@epa.gov>; Capacasa, Jon <Capacasa.jon@epa.gov>; Giattina, James <Giattina.Jim@epa.gov>; Hyde, Tinka <hyde.tinka@epa.gov>; Henry, Timothy <henry.timothy@epa.gov>; Honker, William <honker.william@epa.gov>; Flournoy, Karen <Flournoy.Karen@epa.gov>; Rathbone, Colleen <Rathbone.Colleen@epa.gov>; Bahrman, Sarah <Bahrman.Sarah@epa.gov>; Torres, Tomas <Torres.Tomas@epa.gov>; Opalski, Dan <Opalski.Dan@epa.gov>
Cc: Clark, Becki <Clark.Becki@epa.gov>; Greene, Ashley <Greene.Ashley@epa.gov>; Bergman, Ronald <Bergman.Ronald@epa.gov>; Burneson, Eric <Burneson.Eric@epa.gov>; Hedman, Susan <hedman.susan@epa.gov>; Beauvais, Joel <Beauvais.Joel@epa.gov>; Distefano, Nichole <DiStefano.Nichole@epa.gov>; Kopocis, Ken <Kopocis.Ken@epa.gov>; Wehling, Carrie <Wehling.Carrie@epa.gov>; Garbow, Avi <Garbow.Avi@epa.gov>; Loop, Travis <Loop.Travis@epa.gov>; Lee, Monica <Lee.Monica@epa.gov>; Rowan, Anne <rowan.anne@epa.gov>; Grantham, Nancy <Grantham.Nancy@epa.gov>; Galada, Heather <Galada.Heather@epa.gov>; Rennert, Kevin <Rennert.Kevin@epa.gov>
Subject: Clarifications regarding the application of optimal corrosion control requirements of the lead and copper rule

Water DDs, please see attached to this message a memo which provides important clarifications regarding the application of the optimal corrosion control requirements of the lead and copper rule when a large water system ceases to purchase treated water and switches to a new drinking water source. If you have any questions or concerns related to this memo, please contact me or have your staff contact Maria Lopez-Carbo, Chief of the Protection Branch in the Office of Ground Water and Drinking Water at Lopez.carbo@epa.gov. Thanks, P. Grevatt

Sent from my iPhone

To: Deltoral, Miguel[deltoral.miguel@epa.gov]
Cc: Glowacki, Joanna[glowacki.joanna@epa.gov]; Damato, Nicholas[damato.nicholas@epa.gov]; Shoven, Heather[shoven.heather@epa.gov]; Porter, Andrea[porter.andrea@epa.gov]
From: Poy, Thomas
Sent: Fri 11/6/2015 2:11:03 PM
Subject: Re: Clarifications regarding the application of optimal corrosion control requirements of the lead and copper rule

Attorney Client / Ex. 5

Tom

Tom Poy
Chief, Ground and Drinking Water Branch
USEPA - Region 5
(312) 886-5991

> On Nov 6, 2015, at 7:27 AM, Deltoral, Miguel <deltoral.miguel@epa.gov> wrote:

Attorney Client / Ex. 5

> Miguel A. Del Toral
> Regulations Manager
> U.S. EPA R5 GWDWB
> 77 West Jackson Blvd, (WG-15J)
> Chicago, IL 60604
> Phone: (312) 886-5253
>
> ________________________________
> From: Glowacki, Joanna
> Sent: Wednesday, November 4, 2015 07:58 AM
> To: Frey, Bert; Nelson, Leverett; Thompson, Robert; Lupton, Jane; Lee, Sandra
> Cc: Poy, Thomas; Shoven, Heather; Deltoral, Miguel
> Subject: FW: Clarifications regarding the application of optimal corrosion control requirements of the

lead and copper rule
>
> Joanna S. Glowacki
> Associate Regional Counsel
> U.S. Environmental Protection Agency
> Region 5
> 77 West Jackson Boulevard (C-14J)
> Chicago, Illinois 60604
> 312-353-3757
> 312-385-5464 fax
>
> -----Original Message-----
> From: Darman, Leslie
> Sent: Wednesday, November 04, 2015 7:33 AM
> To: Glowacki, Joanna <glowacki.joanna@epa.gov>
> Subject: FW: Clarifications regarding the application of optimal corrosion control requirements of the lead and copper rule
>
> FYI
>
> Leslie Darman
> Office of General Counsel
> Water Law Office
> 202-564-5452
>
> -----Original Message-----
> From: Wehling, Carrie
> Sent: Wednesday, November 04, 2015 8:29 AM
> To: Darman, Leslie <Darman.Leslie@epa.gov>
> Cc: Neugeboren, Steven <Neugeboren.Steven@epa.gov>
> Subject: FW: Clarifications regarding the application of optimal corrosion control requirements of the lead and copper rule
>
> Here it is.
>
> Caroline (Carrie) Wehling
> Assistant General Counsel
> Water Law Office
> U.S. Environmental Protection Agency
> Washington DC 20004
> 202-564-5492
> wehling.carrie@epa.gov
>
> -----Original Message-----
> From: Grevatt, Peter
> Sent: Tuesday, November 03, 2015 9:23 PM
> To: Moraff, Kenneth <Moraff.Ken@epa.gov>; Matthews, Joan <Matthews.Joan@epa.gov>; Capacasa, Jon <Capacasa.jon@epa.gov>; Giattina, James <Giattina.Jim@epa.gov>; Hyde, Tinka <hyde.tinka@epa.gov>; Henry, Timothy <henry.timothy@epa.gov>; Honker, William <honker.william@epa.gov>; Flournoy, Karen <Flournoy.Karen@epa.gov>; Rathbone, Colleen <Rathbone.Colleen@epa.gov>; Bahrman, Sarah <Bahrman.Sarah@epa.gov>; Torres, Tomas <Torres.Tomas@epa.gov>; Opalski, Dan <Opalski.Dan@epa.gov>
> Cc: Clark, Becki <Clark.Becki@epa.gov>; Greene, Ashley <Greene.Ashley@epa.gov>; Bergman, Ronald <Bergman.Ronald@epa.gov>; Burneson, Eric <Burneson.Eric@epa.gov>; Hedman, Susan <hedman.susan@epa.gov>; Beauvais, Joel <Beauvais.Joel@epa.gov>; Distefano, Nichole <DiStefano.Nichole@epa.gov>; Kopocis, Ken <Kopocis.Ken@epa.gov>; Wehling, Carrie

<Wehling.Carrie@epa.gov>; Garbow, Avi <Garbow.Avi@epa.gov>; Loop, Travis <Loop.Travis@epa.gov>; Lee, Monica <Lee.Monica@epa.gov>; Rowan, Anne <rowan.anne@epa.gov>; Grantham, Nancy <Grantham.Nancy@epa.gov>; Galada, Heather <Galada.Heather@epa.gov>; Rennert, Kevin <Rennert.Kevin@epa.gov>
> Subject: Clarifications regarding the application of optimal corrosion control requirements of the lead and copper rule
>
> Water DDs, please see attached to this message a memo which provides important clarifications regarding the application of the optimal corrosion control requirements of the lead and copper rule when a large water system ceases to purchase treated water and switches to a new drinking water source. If you have any questions or concerns related to this memo, please contact me or have your staff contact Maria Lopez-Carbo, Chief of the Protection Branch in the Office of Ground Water and Drinking Water at Lopez.carbo@epa.gov. Thanks, P. Grevatt
>
> Sent from my iPhone
>
> <image2015-11-03-155158.pdf>
>
>
>
>

To: Deamer, Eileen[deamer.eileen@epa.gov]; Nelson, Leverett[nelson.leverett@epa.gov]; Henry, Timothy[henry.timothy@epa.gov]; Hyde, Tinka[hyde.tinka@epa.gov]
Cc: Poy, Thomas[poy.thomas@epa.gov]
From: Shoven, Heather
Sent: Fri 11/6/2015 2:43:49 PM
Subject: July 1, 2015: Comments on Flint Water from WD to RA

From: Henry, Timothy
Sent: Wednesday, July 01, 2015 4:25 PM
To: Hedman, Susan
Cc: Kelley, Jeff; Hyde, Tinka; Bair, Rita
Subject: RE: Comments on Flint Water

Susan – we prepared the following for your consideration:

Dear Mayor Walling,

Thank you for your message. I sincerely regret that you learned about the Region's investigation of lead contamination in drinking water samples and our concerns in the manner you did. The interim report that was shared by staff contained draft findings and recommendations for management review; it is being revised to address comments and should not have been released outside of the Agency.

Region 5 staff have been responding to a citizen complaint regarding lead concerns since February 25, 2015. In addition, we have had a number of conversations with MDEQ regarding Flint's switch to a new source of water and the resulting water quality challenges. My staff have been out to Flint to collect samples and data, which we felt could both help understand the situation in Flint and inform national drinking water program rulemaking on lead and copper. Staff was requested to prepare a report summarizing the visits and initial findings and offering recommendations for management consideration. A memorandum with this information was shared with management last week and was to be revised to address comments.

In most cases, an internal EPA memo summarizing initial, draft findings and recommendations for management consideration would not be distributed outside the Agency. However, given his interaction with the homeowner for one of the sampling locations, the staff person shared a copy of the memorandum as a courtesy with this Flint resident since her name and children's blood lead levels were referenced. The ACLU representative, Curt Guyette, contacted our staff person on the evening of June 29 saying that he had received a copy of the internal memo from the resident, and our staff person answered Mr. Guyette's questions about the contents of the memo.

Once revised and fully vetted with EPA management, the findings and recommendations will be shared with MDEQ, and can also be shared with you. We will be discussing appropriate regulatory next steps with MDEQ which would as the Primacy Agency then be responsible for following up with you in Flint. We have a conference call scheduled with MDEQ on July 21st after the two rounds of 6-month monitoring results are available. In the short term, however, we believe that Flint's Advisory Committee would benefit from additional EPA-ORD assistance regarding lead and distribution system issues to complement the TTHM expertise provided by Dr. Wright. The bios of the 2 staff we are suggesting can be provided to you if interested.

Again, I regret the manner in which this information reached you. Please feel free to contact me if you have any further questions.

****

Tim Henry
Deputy Director, Water Division
U.S. EPA (W-15J)
77 W. Jackson Blvd., Chicago, IL 60604-3590
Phone: 312.886.6107 Fax: 312.692.2578

From: Hedman, Susan
Sent: Wednesday, July 01, 2015 12:56 PM
To: Hyde, Tinka
Cc: Kelley, Jeff; Henry, Timothy
Subject: Re: Comments on Flint Water

I told the Mayor that we would follow up by the end of the day today. Are we on track to do that?

Sent from my iPhone

On Jun 30, 2015, at 9:20 PM, Hyde, Tinka <hyde.tinka@epa.gov> wrote:

> Will do.
>
> Sent from my iPhone
>
> On Jun 30, 2015, at 9:10 PM, Hedman, Susan <hedman.susan@epa.gov> wrote:
>
>> Please take a look at this and draft a note that I can send to the mayor explaining that the staffer inappropriately released a draft report that had not yet been vetted and suggesting next steps.
>>
>> Sent from my iPhone
>>
>> Begin forwarded message:
>>
>>> **From:** Dayne Walling <dwalling@cityofflint.com>
>>> **Date:** June 30, 2015 at 8:36:41 PM CDT
>>> **To:** "Hedman, Susan" <Hedman.susan@epa.gov>
>>> **Cc:** "Kelley, Jeff" <Kelley.Jeff@epa.gov>
>>> **Subject: Comments on Flint Water**
>>>
>>> Dr. Hedman,
>>>
>>> Please take a look at the communication I received from the City of Flint Public Information Officer about comments that may have been made about Flint Water from an EPA region 5 staff.
>>>
>>> It would be helpful for me to have the same information that was shared with the ACLU representative if indeed this is what took place. I will also be following up with the City of Flint DPW Director Howard Croft to see if he has received this information already or not.
>>>
>>> We certainly want to work to address any concerns that have arisen as the City's water treatment, distribution system, and testing processes have been examined.
>>>
>>> Thank you in advance for any assistance and information you can provide.

All the best,

Dayne

--

Dayne Walling
Mayor, City of Flint
City Hall, 1101 S. Saginaw St.
Flint, MI 48502
810-766-7346
mayor@cityofflint.com
www.cityofflint.com
follow me on twitter at http://twitter.com/mayorwalling

---------- Forwarded message ----------
From: **Jason Lorenz** <jlorenz@cityofflint.com>
Date: Tue, Jun 30, 2015 at 1:49 PM
Subject: Fwd: Water treatment
To: Natasha Henderson <nhenderson@cityofflint.com>, Dayne Walling <dwalling@cityofflint.com>, Howard Croft <hcroft@cityofflint.com>, Michael Glasgow <mglasgow@cityofflint.com>, Peter Bade <pbade@cityofflint.com>

FYI-

Curt Guyette, the reporter working for the Michigan ACLU wants to talk to someone from the City regarding the information below. It is worth noting that this is one of the co-producers of the *Hard to Swallow* Youtube video from last week, which somewhat discredits his objectivity.

Best,

-Jason Lorenz

Public Information Officer

City of Flint

(810) 237-2039

jlorenz@cityofflint.com

---------- Forwarded message ----------
From: **Curt Guyette** <cguyette@aclumich.org>
Date: Tue, Jun 30, 2015 at 1:39 PM
Subject: Water treatment
To: Jason Lorenz <jlorenz@cityofflint.com>

Jason,

I have interviewed Miguel Del Toral, regulations manager for ground and drinking water for the EPA's region 5.

He said there are a number of concerns regarding Flint.

Among other things, he said:

A major concern from a public health standpoint is the absence of corrosion control treatment in the City of Flint for mitigating lead and copper levels in the drinking water.

Recent drinking water samples indicate the presence of high lead results in the drinking water.

In addition to the lack of corrosion control, the ferric chloride being added to help address the TTHM problem can accelerate pipe corrosion, exacerbating the problem.

He also said that the city's testing procedures – instructing residents to "pre-flush" their lines before taking water samples to be tested, can lead to deceptively low results that could give Flint residents a false sense of security regarding actual lead levels in their water.

Obviously, this is a very urgent issue. I am interested to talk with someone from the city about what Mr. Del Toral had to say. Can you set up a phone interview with someone for me to talk with tomorrow? I can make myself available whenever is convenient for you.

If you need to talk with me beforehand, you can reach me on my cell phone at 586-925-0493.

Thanks for any help you can provide.

Curt Guyette

--

Dayne Walling
Mayor, City of Flint
City Hall, 1101 S. Saginaw St.
Flint, MI 48502
810-766-7346
mayor@cityofflint.com
www.cityofflint.com
follow me on twitter at http://twitter.com/mayorwalling

To: Deamer, Eileen[deamer.eileen@epa.gov]; Nelson, Leverett[nelson.leverett@epa.gov]; Henry, Timothy[henry.timothy@epa.gov]; Hyde, Tinka[hyde.tinka@epa.gov]
Cc: Poy, Thomas[poy.thomas@epa.gov]
From: Shoven, Heather
Sent: Fri 11/6/2015 2:45:08 PM
Subject: February 27, 2015 Timeline Event: HIGH LEAD: FLINT Water testing Results

---

From: Deltoral, Miguel
Sent: Friday, February 27, 2015 04:58 AM
To: Crooks, Jennifer; Prysby, Mike (DEQ)
Cc: Busch, Stephen (DEQ); Rosenthal, Adam (DEQ); Poy, Thomas; Schock, Michael; Porter, Andrea
Subject: Re: HIGH LEAD: FLINT Water testing Results

Jen/all - I think things got garbled in translation...

What I was saying is that where you find Pb values that high, it is usually due to particulate lead. Not always, but generally. Particulate lead is released sporadically from lead service lines, leaded solder and leaded brass in a number of ways and folks tend to discount these values as anomalies, but particulate lead release is a normal part of the corrosion process and it is universal (common) in all systems. It's just that it is not captured as often by the infrequent LCR sampling. If systems are pre-flushing the tap the night before collecting LCR compliance samples (MDEQ still provides these instructions to public water systems) this clears particulate lead out of the plumbing and biases the results low by eliminating the highest lead values. If systems are pre-flushing and still finding particulate lead, the amount of particulate lead in the system can be higher than what is being detected using these 'pre-flushed' first-draw samples. My point on that was that people are exposed to the particulate lead on a daily basis, but the particulate lead is being flushed away before collecting compliance samples which provides false assurance to residents about the true lead levels in the water.

Some quick notes on particulate lead release:

- Fe/Mn can transport lead from the lead service lines into the home. The lead sorbs onto the Fe/Mn particles. In GW systems, Fe/Mn can come from the source water and more Fe from the water mains. In SW systems, the Fe typically is released from the water mains.
- Lead released from lead service lines can also 'seed' galvanized iron pipes inside the homes. Again, the lead sorbs onto the iron on the pipes and be released sporadically. Generally, the higher the flow, the more Fe and Fe+Pb particulate you will likely get.
- If there is a partial lead service line (lead connected to copper) you can get additional lead release due to galvanic corrosion.

- Leaded brasses and solder can also release particulate lead under certain circumstances.
- The particulate can contain very high concentrations of lead (hundreds to thousands of ppb Pb) which is a much higher concentration than lead paint, so even small particles can result in high lead values.
- If the lead service line was disturbed (water main repair/replacement, meter installation repair/replacement, service line leak repairs, etc.) you can have VERY high lead levels in the scale and sediment that is dislodged from the inside of lead service lines. Here in Chicago, during a partial lead service line replacement, we collected the scale and sediment that came into the home and we found 300,000+ ug/L lead in the scale; 125,000 ug/L Pb in the sediment. Very dangerous.
- Higher levels of PO4 (3-4 mg/L Ortho) seem to reduce the amount of particulate Pb that is released in the absence of physical disturbances to the lead lines. Doesn't stop it entirely, but should generally reduce the occurrence. Caveat – Other water quality issues can change the chemical complexes that form on the pipe, so cleaner sources with more consistent WQ form more predictable scale complexes.

If I remember correctly, Detroit is feeding PO4 for the LCR, but since Flint is no longer part of that interconnection, I was wondering what their OCCT was. They are required to have OCCT in place which is why I was asking what they were using.

Mike Schock is our resident expert and may be able to help out with the simultaneous compliance (Pb & DBPs) so I would suggest that folks give him a call.

Miguel A. Del Toral

Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

From: Crooks, Jennifer
Sent: Thursday, February 26, 2015 04:15 PM
To: Prysby, Mike (DEQ)
Cc: Busch, Stephen (DEQ); Rosenthal, Adam (DEQ); Deltoral, Miguel; Poy, Thomas
Subject: HIGH LEAD: FLINT Water testing Results

Thank you, Mike. These results are dated 2/18/15, so they're probably different results than the results Adam had, but they still have to be included in with compliance calculation of the 90th percentile. What dates are the earlier compliance samples?

Yes, the stagnation of the water would increase the lead levels, and I'm glad you're following up with the City to get the lead levels reduced for Citizen name / Ex. 6 home—which will hopefully be effective for her neighbors because they are also most likely being exposed to these high lead levels. Miguel reminded me this morning, there are no safe levels of lead in drinking water.

I talked with Miguel Del Toral about his knowledge on research on lead. He said that high levels of iron, usually bring high levels of lead. The large amount of black sediment at Citizen name / Ex. 6 home, is most likely particulate lead, Miguel said, where the lead actually bonds to the iron sediment. While the particulates of lead/iron are small, they're very highly concentrated with lead—up to 95% lead.

Miguel was wondering if Flint is feeding Phosphates. Flint must have Optimal Corrosion Control Treatment—is it Phosphates? Or is it pH/Alkalinity Adjustment? The reason he asks, is because systems using the pH/Alkalinity adjustment have problems with lead levels in the 100's or higher—and they have problems with random lead particulate matter in the distribution system. Miguel said that we all know that flushing regularly helps reduce the lead concentrations, but not immediately. The City can't just flush in advance of taking the compliance samples, they have to flush the lines on a regular schedule.

The problem with high lead issues, is that the water has so many different variables, that it's hard to pinpoint what is causing what problem where. From a public health perspective, can we assume that the high lead levels in Citizen name / Ex. 6 neighborhood are isolated to just her area? Or are they more widespread?

Please feel free to contact Miguel directly—312-886-5253; Deltoral.miguel@epa.gov.

Jennifer

From: Prysby, Mike (DEQ) [mailto:PRYSBYM@michigan.gov]
Sent: Thursday, February 26, 2015 10:25 AM
To: Crooks, Jennifer
Cc: Busch, Stephen (DEQ); Rosenthal, Adam (DEQ)
Subject: RE: HIGH LEAD: FLINT Water testing Results

Jennifer,

I recall Adam showing me a high lead/copper sample result (perhaps it was this one)....as part of the city's routine lead-copper monitoring. If so, it was a stagnated sample as part of the sampling protocol. Adam mentioned that all other samples were below the AL...and the city will not exceed the lead AL. I will confirm this. The city; however, needs to take further action to help address Citizen name / Ex. 6 concern. The type of plumbing needs to be identified and sample tap location within the premise plumbing. They should offer to re-sample for PB after flushing the tap to demonstrate that flushing the tap will reduce the lead concentration. The city also needs to provide other lead-reduction strategies to M Citizen name / Ex. 6

Michael Prysby, P.E.

District Engineer

Office of Drinking Water and Municipal Assistance

517 290-8817

From: Crooks, Jennifer [mailto:crooks.jennifer@epa.gov]
Sent: Thursday, February 26, 2015 10:53 AM
To: Busch, Stephen (DEQ); Prysby, Mike (DEQ)
Cc: Poy, Thomas; Deltoral, Miguel
Subject: HIGH LEAD: FLINT Water testing Results

Hi, Steve and Mike. Thanks for talking with me yesterday, Steve, about the most recent TTHM results. We'll look forward to receiving them whenever you get them back from the lab.

However, the main purpose of my email is to alert you to the high lead levels reported to a citizen yesterday by Flint Water Dept. I have been discussing the water situation with Citizen name / Ex. 6 Citizen name / Ex. 6 since January, and she has been talking with Mike Glasgow at the plant about the black sediment in her water. (HUGE KUDOs to MIKE!!) He did test it to find that the iron levels were greater than his test would go; GT 3.3. But, because the iron levels were so high, he suggested testing for lead and copper. WOW!!!! Did he find the LEAD! **104 ppb.** She has 2 children under Personal Matters / Ex. 6. Big worries here.

So, Steve, this goes back to what you and I were talking about yesterday. That the different chemistry water is leaching out contaminants from the insides of the biofilms inside the pipes. I think Lead is a good indication that other contaminants are also present in the tap water, that obviously were not present in the compliance samples taken at the plant. VOC/SOC and inorganics/metals would be good samples to start with to take at the tap. And since Ms. Walters' drinking water is showing the high lead levels, her tap water would be a good place to start, I think.

We also talked about Dr. Joan Rose from Michigan State being on the Flint Tech Advisory Committee—you also mentioned that someone from the Dept of Community Health was on the Committee. I'm thinking that Dr. Rose would want to dive further into this, since there's actual evidence that the water is leaching contaminants from the biofilms; or Dept of Community Health would want to get involved and look at this from an epidemiological perspective. (She and her family are also exhibiting the rashes when exposed to the water, and her daughter's hair is falling out in clumps.)

Maybe MSU could authorize the payment of the analyses for these samples? Or Dept of Community Health?

The citizen's name is:

Citizen name / Ex. 6

Personal Address / Ex. 6

Personal Address / Ex. 6

Personal Phone / Ex. 6

Personal Email / Ex. 6

Jennifer

From: Personal Email / Ex. 6
Sent: Thursday, February 26, 2015 9:08 AM
To: Crooks, Jennifer
Subject: Fwd: Re: Water testing Results

---------- Forwarded message ----------
From: "Michael Glasgow" <mglasgow@cityofflint.com>
Date: Feb 26, 2015 7:55 AM
Subject: Re: Water testing Results
To: Personal Email / Ex. 6
Cc:

Citizen name / Ex. 6

Here are your Lead & Copper Results. This number is very high, 104 ppb of lead. In the last few months over 100 samples have been tested and only 2 were over the 15 ppb regulatory limit, and the highest level I have seen is 37 ppb. I will pass this info to Mr. Croft so he is aware. I will send the sample I collected from your kitchen faucet today for a complete metals test (12 different metals), to see what the level is without letting the water stagnate over night. I'm hoping that value will be much, but we will have to see. Sorry for this news, but I wanted to let you know right away.

Mike

On Tue, Feb 24, 2015 at 1:50 PM, Michael Glasgow <mglasgow@cityofflint.com> wrote:

Citizen name / Ex. 6

I will bring a copy of last years annual report when I stop by tomorrow. The annual report from 2014 must be delivered to residents by July 1st of this year. I imagine we may have it complete by June.

Mike

On Fri, Feb 20, 2015 at 1:00 AM, Personal Email / Ex. 6 wrote:

Mike,

Thank you for the water reports and we already planned to see you on the 25th at 10:00am. I was wondering if you know who I need to talk to in the water plant to obtain the Annual Drinking Water Report from last year. According to the EPA website there is link to access but when you click on it, it cannot be accessed. Was also curious if there is an expected time frame for this years report due to the switch. If you can be of any assistance I would appreciate it.

Thank You

Citizen name / Ex. 6

On Thu, Feb 19, 2015 at 12:47 PM, Michael Glasgow <mglasgow@cityofflint.com> wrote:

Citizen name / Ex. 6

Here is a list of test results from water sampled at your home over the last 2 weeks. I have sent in your lead and copper sample, and also a sample from the toilet tank for manganese. I should hopefully have results from this testing early next week. I'll plan on stopping over on Wednesday (the 25th) around 10 am again to give you these results & sample again.

Mike

To: Hyde, Tinka[hyde.tinka@epa.gov]; Hedman, Susan[hedman.susan@epa.gov]
Cc: Rowan, Anne[rowan.anne@epa.gov]; Kelley, Jeff[kelley.jeff@epa.gov]; Deamer, Eileen[deamer.eileen@epa.gov]
From: Cassell, Peter
Sent: Fri 11/6/2015 3:40:19 PM
Subject: FW: Final Report - Two questions

Good morning,

Below is a question from the ACLU Michigan Reporter. Can you check on this information and get back to me?

Pete Cassell
Acting Press Team Leader
U.S. EPA Region 5

---

77 West Jackson Blvd (P-19J)
Chicago, IL 60604-3590
Office (312) 886-6234
Mobile (312) 859-9614

From: Curt Guyette [mailto:cguyette@aclumich.org]
Sent: Friday, November 06, 2015 9:22 AM
To: Cassell, Peter <cassell.peter@epa.gov>
Subject: RE: Final Report - Two questions

Mr. Cassell,

I am writing to ask about items that were in Mr. Del Toral's draft memo that aren't addressed in the final report that you sent me.

Specifically, Del Toral raised a red flag about two seemingly critical issues that are absent from the final report:

1. The lack of mandatory corrosion control and its contribution to the crisis; and

2. The MDEQ's protocol of instructing people to pre-flush their systems prior to letting it sit for six hours

Why were these issues not addressed in the final report?

I would appreciate an answer by Monday morning.

Sincerely,

Curt Guyette

From: Cassell, Peter [mailto:cassell.peter@epa.gov]
Sent: Wednesday, November 04, 2015 4:57 PM
To: Curt Guyette
Subject: FW: Final Report - High Lead at Three Residences in Flint, Michigan

Sorry, I had your email wrong here.

Pete Cassell
Acting Press Team Leader
U.S. EPA Region 5

---

77 West Jackson Blvd (P-19J)
Chicago, IL 60604-3590
Office (312) 886-6234
Mobile (312) 859-9614

From: Cassell, Peter
Sent: Wednesday, November 04, 2015 3:55 PM
To: Cassell, Peter <cassell.peter@epa.gov>
Subject: Final Report - High Lead at Three Residences in Flint, Michigan

Hello,

Please find attached the Final Report - High Lead at Three Residences in Flint, Michigan. The report has been redacted to remove personally identifiable and medical information.

Pete Cassell
Acting Press Team Leader
U.S. EPA Region 5

---

77 West Jackson Blvd (P-19J)
Chicago, IL 60604-3590
Office (312) 886-6234
Mobile (312) 859-9614

To: Susan Hedman[Hedman.Susan@epa.gov]; Kaplan, Robert[kaplan.robert@epa.gov]; Hyde, Tinka[hyde.tinka@epa.gov]
Cc: Fortin, Denise[Fortin.Denise@epa.gov]; Beckmann, Ronna Erin[beckmann.ronna@epa.gov]
From: Deamer, Eileen
Sent: Fri 11/6/2015 4:51:58 PM
Subject: FW: Flint Task Force Letter

fyi

From: Dickinson, Jordan [mailto:Jordan.Dickinson@mail.house.gov]
Sent: Friday, November 06, 2015 10:38 AM
To: Davis, CatherineM <Davis.CatherineM@epa.gov>; Beckmann, Ronna Erin <beckmann.ronna@epa.gov>; Fortin, Denise <Fortin.Denise@epa.gov>; Deamer, Eileen <deamer.eileen@epa.gov>
Subject: Flint Task Force Letter

Hey Everyone,

I wanted to let you know that we will be sending the attached letter today and I wanted to give you a heads up. Please give me a call and we can talk about it further.

Thanks,

Jordan

November 6, 2015

Administrator Gina McCarthy

U.S. Environmental Protection Agency

1200 Pennsylvania Avenue N.W.
Washington, DC 20004

Dear Administrator McCarthy:

As you know, the City of Flint had, and potentially still could have, dangerous levels of lead in its drinking water. We appreciate the Environmental Protection Agency's (EPA) creation of the Flint Safe Drinking Water Task Force and other efforts to provide access to safe, reliable, clean water to the residents of Flint. We seek further information regarding the sustained commitment by the Task Force to work with the State of Michigan to address the long-term effects of lead exposure on Flint's children.

It is our understanding that the City of Flint, the State of Michigan, and the EPA have monitored the situation in Flint since the first report of poor water quality in 2014. However, it is clear that various opportunities to predict and prevent contamination were not taken, exposing Flint residents, and especially infants and pregnant women, to dangerously high levels of contaminants including, but not limited to, lead. This failure of government to ensure the public's safety and health must not be repeated in Flint or anywhere else. While progress is being made to improve the water quality after reconnecting to the Detroit Water System, Flint's residents and its water system are still vulnerable to short and long-term impacts.

It is critical that the local, state, and federal partners remain vigilant, and that EPA take a strong leadership role through the Flint Safe Drinking Water Task Force to prevent further contamination during the current transition to Detroit and the future transition to the permanent connection to Lake Huron source water through the Karegnondi Water Authority (KWA) pipeline. In an effort to understand the actions being taken by Task Force and address current and future challenges with Flint's water, we seek answers to the following questions:

- How often does the Flint Safe Drinking Water Task Force communicate amongst itself, and what are the communication protocols?

- How long will it take for corrosion control agents to fully create a barrier between water and the inside of the pipes?

- How are testing methods being improved to accurately measure water quality and correct testing mistakes of the past?

- How is the EPA and the Flint Safe Drinking Water Task Force interfacing with other federal agencies, such as the Department of Health and Human Services, the U.S. Department of Agriculture, the Department of Education, and other agencies with respect to the future needs of the residents of Flint stemming from the long-term effects of toxic lead exposure on Flint's children from its drinking water?

- In the future, will the EPA notify residents directly if they believe the local or state government actions are inadequate to properly communicate significant risks to the public?

- The State of Michigan is responsible for ensuring compliance with federal drinking water standards. In addition, the state has elected to assume the legal responsibility for disbursing the resources it receives from EPA's Drinking Water and Clean Water State Revolving Funds. How will the Task Force provide the ongoing, long-term support and oversight needed to ensure the state complies with federal standards and allocates the revolving funds in a manner that most effectively protects public health?

We encourage you to continue monitoring and supporting any and all ongoing measures by the EPA and the Task Force to test for and reduce contaminants in drinking water, prepare for the future transition to the KWA pipeline to Lake Huron, and identify and replace aging water infrastructure. Your presence in Flint will help restore the confidence in the ability of water quality regulators and begin to rebuild the trust in the effectiveness of the critical safeguards found in laws such as the Safe Drinking Water Act.

We appreciate your prompt response to these questions and invitation as well as your continued attention to this matter.

Sincerely,

Gary C. Peters	Debbie Stabenow
U.S. Senator	U.S. Senator

Dan Kildee

Member of Congress

Thanks,

Jordan Dickinson

Legislative Assistant

Congressman Dan Kildee (MI-05)

227 Cannon House Office Building

Washington, D.C. 20515

Phone: (202) 225-3611

www.dankildee.house.gov

Sign up for Congressman Dan Kildee's e-newsletter

To: Kaplan, Robert[kaplan.robert@epa.gov]
From: Hedman, Susan
Sent: Fri 11/6/2015 10:20:54 PM
Subject: Fwd: Flint Task Force Letter

Sent from my iPhone

Begin forwarded message:

From: "Deamer, Eileen" <deamer.eileen@epa.gov>
Date: November 6, 2015 at 10:51:57 AM CST
To: "Hedman, Susan" <hedman.susan@epa.gov>, "Kaplan, Robert" <kaplan.robert@epa.gov>, "Hyde, Tinka" <hyde.tinka@epa.gov>
Cc: "Fortin, Denise" <Fortin.Denise@epa.gov>, "Beckmann, Ronna Erin" <beckmann.ronna@epa.gov>
Subject: FW: Flint Task Force Letter

fyi

From: Dickinson, Jordan [mailto:Jordan.Dickinson@mail.house.gov]
Sent: Friday, November 06, 2015 10:38 AM
To: Davis, CatherineM <Davis.CatherineM@epa.gov>; Beckmann, Ronna Erin <beckmann.ronna@epa.gov>; Fortin, Denise <Fortin.Denise@epa.gov>; Deamer, Eileen <deamer.eileen@epa.gov>
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Sincerely,

Gary C. Peters	Debbie Stabenow
U.S. Senator	U.S. Senator

Dan Kildee

Member of Congress

Thanks,

Jordan Dickinson

Legislative Assistant

Congressman Dan Kildee (MI-05)

227 Cannon House Office Building

Washington, D.C. 20515

Phone: (202) 225-3611

www.dankildee.house.gov

Sign up for Congressman Dan Kildee's e-newsletter

To: Hyde, Tinka[hyde.tinka@epa.gov]; Kaplan, Robert[kaplan.robert@epa.gov]
From: Hedman, Susan
Sent: Sat 11/7/2015 5:05:04 AM
Subject: FW: Nov. 6 Flint Clips

Please be sure to read these clips.

From: Cassell, Peter
Sent: Friday, November 06, 2015 9:39 AM
To: Kelley, Jeff <kelley.jeff@epa.gov>; Hedman, Susan <hedman.susan@epa.gov>; Kaplan, Robert <kaplan.robert@epa.gov>; Hyde, Tinka <hyde.tinka@epa.gov>
Cc: Rowan, Anne <rowan.anne@epa.gov>; Beckmann, Ronna Erin <beckmann.ronna@epa.gov>; Harrison, Melissa <Harrison.Melissa@epa.gov>; Abrams, Dan <Abrams.Dan@epa.gov>; Poy, Thomas <poy.thomas@epa.gov>; Fortin, Denise <Fortin.Denise@epa.gov>; Deamer, Eileen <deamer.eileen@epa.gov>; Singer, Joshua <Singer.Joshua@epa.gov>; Arcaute, Francisco <Arcaute.Francisco@epa.gov>; Peterson, John <peterson.john@epa.gov>; Loop, Travis <Loop.Travis@epa.gov>; Purchia, Liz <Purchia.Liz@epa.gov>; Allen, Laura <Allen.Laura@epa.gov>; Henry, Timothy <henry.timothy@epa.gov>; Arcaute, Francisco <Arcaute.Francisco@epa.gov>
Subject: Nov. 6 Flint Clips

FLINT DRINKING WATER CLIPS

US. EPA Region 5 – as prepared by Peter Cassell *(ORA/OEC/PA)* On Nov. 6

- Ananich seeks subpoena power in call for legislative hearings on Flint water crisis (MLive)
- Flint to restart water shutoffs (Michigan Radio)
- Legislators calling for investigation over Flint report (CBS 3 – WWMT)
- Legislators call for investigation into altered Flint lead report (MLive)
- State legislators calling for federal investigation into MDEQ (CBS 5 – WNEM)
- Feds warn of new threat in Flint water that may pose “immediate and acute health hazards” (Michigan Radio)
- EPA's report not surprising for residents (CBS 5 – WNEM)
- Experts: Water health dangers don’t subside in Flint (Detroit News)
- Expert says Michigan officials changed a Flint lead report to avoid federal action (Michigan Radio)

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http://www.mlive.com/lansing-news/index.ssf/2015/11/ananich_seeks_subpoena_power_i.html

By Citizen name / Ex. 6 Personal Email / Ex. 6
Follow on Twitter
on November 05, 2015 at 12:50 PM, updated November 05, 2015 at 1:21 PM

LANSING, MI — Senate Minority Leader Jim Ananich on Thursday formally requested legislative hearings on the Flint water crisis and response by the Michigan Department of Environmental Quality.

"In the handling of the Flint water case, failures at multiple levels of government led to my community — and particularly its children — being poisoned," Ananich said in a letter to Senate Majority Leader Arlan Meekhof, referencing high lead levels found after a switch to Flint River drinking water.

"We need to make sure that the executive branch is faithfully executing the laws passed by this body and protecting all Michigan taxpayers by making sure the $9.35 million in state funds appropriated for the Flint water crisis are used correctly."

Gov. Rick Snyder has already appointed a task force to review the Flint water crisis. The federal Environmental Protection Agency is also investigating, and the state Auditor General recently agreed to expand an ongoing audit of MDEQ's drinking water division.

But Ananich, in his letter, noted that the task force lacks subpoena power that a Senate committee could use to compel testimony. He pointed out that none of the state or federal probes will require sworn testimony and highlighted a common characteristic: "a branch of government or agency is investigating themselves."

The Flint Democrat proposed a series of six legislative hearings by the end of the year "in an appropriate" Senate committee, such as the newly formed Oversight panel.

Meekhof, R-West Olive, did not sound immediately enthused by Ananich's proposal and does not appear prepared to call for hearings any time soon.

"He and I have been talking about that, but I'd like the folks that are in charge of gathering data and information to do that," Meekhof said, noting that the Senate could have a busy couple months with energy and Detroit education legislation in the pipeline.

Meekhof also offered support for MDEQ Director Dan Wyant, who has faced criticism over his department's handling of the water crisis.

"I believe they will find solutions and they will find the thing that need to be corrected," Meekhof said. "I have very high confidence in the director."

Flint began drawing drinking water from the Flint River in April of 2014, while the city was under control of a state-appointed emergency manager. City Council had previously approved a long-term plan to move off Detroit water and join the new Karegnondi Water Authority but did not vote on using river water in the interim.

Wyant recently replaced the head of the Office of Drinking Water and Municipal Assistance, acknowledging that the state had enforced the wrong federal standards for treating Flint River water for more than 17 months, failing to require that the city make it less corrosive.

Ananich said public hearings in a legislative committee would further help the public understand the crisis and help the state or other cities avoid similar problems in the future.

"The solution is going to be ongoing when it comes to helping these kids that have brain damage because of the lead," he told reporters after session. "But I think this helps get some accountability. I think citizens deserve that. I think taxpayers deserve that. This could be one way to do it."

Citizen name / Ex. 6 is a Capitol reporter for MLive Media Group. *Email him*, find him on *Facebook* or follow him on *Twitter*.

---

http://michiganradio.org/post/flint-restart-water-shutoffs

By Citizen name / Ex. 6 • 19 hours ago

Beginning next month, the city of Flint plans to again disconnect water customers who aren't paying their bills.

The first shutoff notices are going out this week.

This summer, Judge Archie Hayman judge ordered Flint to stop shutting off water service to delinquent customers. The judge found Flint illegally raised rates by 35% in 2011. As part of his ruling, the judge ordered the city to roll back the water rates and stop disconnecting people who had run up unpaid bills under the old rate structure.

But the judge's order only covered unpaid bills before September. Now those new bills, with the lower rates, are becoming past due.

"At the point where the bills were actually due, our customers will have had over two and half months past their due date to pay," says Jody Lundquist, the city of Flint's Chief Financial Officer.

Lundquist says 60% of Flint water customers are behind on their water bills. She says Flint's water revenues are down $4 million since September compared to the same time last year.

Many people in Flint stopped paying their bills to protest the city's problem-plagued water system. Others are still having trouble paying the high cost of water in Flint, which for many is still over $100 a month.

Some Flint resident also question why they should pay for water when the state and a local foundation are paying $10 million to reconnect Flint to Detroit water.

City officials point out that water bills include the cost of maintaining the system, which is a bigger part of their bill than the water.

"There is a cost to provide that and it's important that the city's able to do that," says Flint Public Works Director Howard Croft.

City officials are organizing staff to make sure there are city workers to handle both the shutoffs, and the reconnections when customers pay their overdue bills.

On a positive note, city officials say that the water flowing through Flint's system is now entirely from Detroit. Last month, Flint switched back to Detroit water after an 18-month experiment getting its drinking water from its namesake river. The Flint River proved to be difficult for city staffers to properly treat, leading to problems with taste, smell and appearance. The corrosiveness of the river also damaged pipes, creating an issue with rising lead levels in the water.

Thousands of water filters have been distributed to city residents to filter out the lead. But there are concerns the lead problem will persist for a long time. More filter giveaways are planned.

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http://www.wwmt.com/news/features/state/stories/Legislators-calling-for-investigation-over-Flint-report-228582.shtml#.VjzENiuvyHI

Updated: Fri, Nov 06 2015, 08:56 AM – **Video at link**

LANSING, Mich. (NEWSCHANNEL 3) - Legislators are pushing for a federal investigation into a botched Flint report.

Two Michigan state reps, including one from Flint, are demanding an investigation after another controversial lead report.

A Michigan radio station reported the Department of Environmental Quality knowingly dropped two lead test samples to avoid exceeding a federal drinking water standard.

They're also calling on the governor to remove the director of the Department of Environmental Quality.

Meanwhile, Flint is sending out its first water shutoff notices since a judge's ruling temporarily halted the practice in August.

About 1,800 notices for past-due accounts are expected to be mailed out this week.

The notices only cover debts from water bills issued since the city decreased water and sewer rates to comply with a circuit court judge's orders.

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http://www.mlive.com/news/flint/index.ssf/2015/11/legislators_call_for_investiga.html

By Citizen name / Ex. 6 Personal Email / Ex. 6
on November 05, 2015 at 7:02 PM, updated November 05, 2015 at 7:17 PM

FLINT, MI -- Two state representatives are pushing for a federal investigation into the Michigan Department of Environmental Quality (DEQ).

State Reps. Phil Phelps (D-Flushing) and Sheldon Neeley (D-Flint) are calling for the federal investigation into the DEQ, according to a news release from Phelps' office. The call for the investigation came after a Michigan Radio story was publish Thursday, Nov. 5 claiming the DEQ knowingly dropped two lead test samples to avoid exceeding a federal drinking water standards.

Neeley is also calling for DEQ Director Dan Wyant to be removed from his position by Gov. Rick Snyder. Neeley has also sent several letters to the governor and Attorney General Bill Schuette requesting they take action, but according to the release neither office has responded to the legislator.

"It is shameful and appalling to me that the men and women we entrust to keep us safe at the highest levels of state government would purposely put the health of Flint's residents at risk," Neeley said in a statement. "For the past year, the Flint community has been subjected to high levels of lead in their water. Action clearly could have been taken earlier to protect the children who have been the most at risk. This behavior borderlines on criminal activity. The governor should immediately terminate the director of the DEQ and all culpable members of the staff."

Mike Glasgow, an employee with the city of Flint who collected the water samples, was told to take a sample from Lee Anne Walter's Flint home off the report, according to the Michigan Radio story. That sample came back with a lead result of 104 parts per billion -- seven times the federally mandated limit, according to the release.

"You can read the story, and know immediately that what the DEQ is saying and what actually happened doesn't add up," Phelps said in a statement. "This is just one more instance of the DEQ covering something up, and even more of a reason they fought me when I sent a FOIA requesting information relating to the water crisis in Flint. There must be a full federal investigation into the state on how they handled these samples."

According to the release, Wyant attributed the drop of Walters' sample was because a water filter was used in the home.

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http://www.wnem.com/story/30451692/state-legislators-calling-for-federal-investigation-into-mdeq#ixzz3qj39ukvf

Posted: Nov 05, 2015 10:19 PM CST Updated: Nov 05, 2015 10:19 PM CST

Posted By Citizen name / Ex. 6

FLINT, MI (WNEM) -

Berston Fieldhouse is alive with activity as pick-up games are in full swing.

It didn't take long for those running the courts to work up a sweat.

But just like many places across the city, the water fountain came with a very real warning.

"Makes you feel some type of way, it's not safe, it's not good," said basketball player Briana Mayes.

Forcing many to stick with bottled water.

"It's no telling how much we've been exposed to and how much is actually being kept from us," said resident Nafisah McClendon.

And the concerns about lead exposure in Flint's water has two local lawmakers saying they've seen enough.

"This is definitely the most negligent that I've seen at the state level," said state Rep. Phil Phelps.

Phelps is joining state Rep. Sheldon Neeley in calling for a federal investigation into the state's Department of Environmental Quality.

This all comes in the wake of Michigan Radio’s discovery that the DEQ knowingly dropped two lead samples to avoid exceeding federal drinking water guidelines.

"If they were playing by the rules from the get-go, this whole situation might not have happened at all," Phelps said.

Phelps and Neeley also want Gov. Rick Snyder to remove DEQ Director Dan Wyant from that position.

They believe he was in the lead and oversaw what they call a massive cover-up.

"If it comes out that these were deliberate cover up attempts, I don't think people only need to lose their jobs, there needs to be people sitting in jail," Phelps said.

Phelps said they’re waiting for a response from the federal government and Synder.

And as water quality continues to be a question mark in the city, there are many others also waiting.

"You wonder, from the people who have been effected, what long term effects it will have on them, and you won't know until, unfortunately, it's already happening," McClendon said.

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http://michiganradio.org/post/feds-warn-new-threat-flint-water-may-pose-immediate-and-acute-health-hazards

By Citizen name / Ex. 6 • Nov 5, 2015

The U.S. Environmental Protection Agency says people living in Flint should be warned of the potential for “high lead release” into their tap water if road work or other physical disturbances to lead and even non-lead service lines occur.

The agency says these physical disturbances “could pose an immediate and acute health hazard” to residents.

EPA released the information late Wednesday in a report sent to Michigan’s Department of Environmental Quality and the city of Flint. It’s the finalized version of an interim report that was leaked to the ACLU over the summer.

This version of the report lays out how a combination of factors may have led to extremely high lead levels at one Flint home. It also says that similar situations could happen in the future.

Regulators say scale would have built up over time inside the distribution pipes in Flint. These scales are described as "protective" because they help prevent water from coming into contact with lead distribution pipes, and leaching lead into tap water in people's homes.

"Lead service lines are the largest source of lead, when present, and can contribute up to 75 percent of the total mass of lead released into the water," the report says.

But the scales can pose a big risk too. Over time, lead can accumulate in the scales. Even non lead service lines could be at risk.

"Studies have shown that the scales within galvanized iron pipe downstream of lead pipe segments can be 'seeded' with lead from the lead portion of the service," the report says.

The report says the corrosiveness of the Flint River water without proper treatment "are well known factors that can contribute to high lead release."

The head of Michigan's Department of Environmental Quality previously admitted it mistakenly allowed Flint to stop corrosion control treatment when it switched water sources. This week the EPA issued a memorandum to all the agency's regional directors, clarifying that water systems must study a water source to determine the best corrosion control treatment before making a switch.

Without proper corrosion control treatment, and when road work or other physical disturbances to underground pipes happens, these scales can be "dislodged" into people's tap water. The EPA says it's "reasonable to assume" that these disturbances could release lead laden scale into tap water, even if the service line is not made of lead.

At Lee Anne Walters' home, the iron service line was unusually long; at least 150 feet. The EPA believes the scale on her home's iron service line was 'seeded' with lead. The agency believes the water chemistry and a physical disturbance led to extremely high lead levels in Walters' home. The report notes two relatively new asphalt patches on the road near her home.

The lack of corrosion control treatment in Flint is now well known. But this is the first time physical disturbance has been mentioned as a big risk.

"The jarring and vibration associated with excavation can dislodge the high lead-bearing scales from with the service line pipes," the report says.

The report makes several recommendations to prevent the release of “large amounts of scale and sediment that could pose an immediate and acute health hazard to the residents.”

More data from intact pipes, lead and non-lead, need to be collected. Assessing the scales within these lines in Flint is “essential” to determine the risk to residents, the report says.

Develop training and public education on potential for “high lead release” from the scales. The report says people should know when utility work is going on and the “potential risk of increased lead levels due to these disturbances.”

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http://www.wnem.com/story/30450603/epas-report-adds-to-residents-concern#ixzz3qj3qs0zy

Posted: Nov 05, 2015 6:28 PM CST Updated: Nov 05, 2015 10:20 PM CST

Posted By Citizen name / Ex. 6 - By Citizen name / Ex. 6

VIDEO AND RA INTERVIEW

FLINT, MI (WNEM) - Arthur Woodson is one of many protesters that called for the Environmental Protection Agency to look into his city’s water crisis.

“I wasn't surprised – I am just glad that they brought it out to the open,” Woodson said.

In a detailed report released on Wednesday, the EPA laid out its findings on Flint's water problems.

It found increased lead levels in off Hemphill and Pengelly Roads near Bryant Street.

Susan Hedman is the EPA's administrator for this region.

"The U.S. Environmental Protection Agency is very concerned about lead levels in Flint," Hedman said.

Pete Hall only uses his water to wash his car as his grandson looks on. However, that's as close as he will let him get to the water.

“I'm more scared for the kids drinking it because kids when they get thirsty they going to drink the first thing available," Hall said.

Neighbors said they see no good news insight regarding the water woes of Flint, and they want to be tested.

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http://www.detroitnews.com/story/news/politics/2015/11/05/experts-water-health-dangers-subside-flint/75255704/

Citizen name / Ex. 6, The Detroit News 11:32 p.m. EST November 5, 2015

Local health officials and the federal government are warning Flint residents that the danger from their tap water has not subsided even though the city has reconnected to Detroit's water system.

Dr. Mona Hanna-Attisha, the Hurley Medical Center pediatrician who uncovered lead exposure in city children two months ago, wants residents to continue their use of bottled water. This comes three weeks after Flint began receiving its drinking water from the Detroit Water and Sewerage Department.

For the previous 18 months, the city drew its water from the Flint River in an effort to save money. The high corrosive levels of the river water and a failure to use adequate corrosion controls led to unhealthy amounts of lead reaching residents.

In October, Flint and Detroit water officials announced Flint was back online with Detroit's water system, but cautioned it was not a quick fix.

"While the actual switch ... will happen immediately, it is expected that the thorough transition from Flint River water to Detroit water will be complete in approximately three weeks," DWSD said in a statement at the time. Along with the phosphates used by the Detroit system to control corrosion of lead in water delivery pipes, the city of Flint was expected to add measures for protection.

But Hanna-Attisha doesn't want residents taking any chances.

"Even though we've switched to DWSD, we have lost the sealed layer (protecting against) corrosion," she said. "And we've aged our infrastructure 30 years. Nobody knows when that seal will come back ...

"For our most vulnerable populations, pregnant women and infants, they should never be using tap water."

Officials with Michigan's Department of Environmental Quality agreed with Hanna-Attisha's assessment on corrosion measures, saying it has taken "up to several months" in other cities across the country. As a result, residents should try to find out exactly what is or isn't in their water.

"The only way for a homeowner to know for certain is to have their home tested," said DEQ spokesman Brad Wurfel. “DEQ and the city of Flint offer free testing for Flint residents, and we recommend concerned residents take advantage of it.”

Greg Eno, a Detroit water system spokesman, said the utility simply provides the water complete with corrosion controls. Measuring how quickly the controls reach maximum effectiveness is done by the city of Flint, which owns the pipelines, he said.

On Wednesday, U.S. Environmental Protection Agency officials issued their own warnings in a report that highlighted the lead dangers inherent in the city’s aging underground infrastructure.

“... (E)ven with corrosion control treatment in place in the future, physical disturbances will be capable of dislodging the high lead-bearing scale and sediment from non-lead pipes and well as lead pipes...,” according to the report. Such disturbances include construction work and line replacement.

Flint residents have endured problems with their water since the spring of 2014, when the city’s state-appointed emergency manager severed the relationship with the Detroit water system system. The hope was that the switch to the Flint River would help the financially troubled city save money until its new water system that draws water from Lake Huron — the Karegondi Water Authority — becomes operational in the second half of 2016.

Almost immediately after the switch, however, residents began reporting foul odors, strange tastes and cloudiness in the water coming from their taps. Local and state officials argued that testing showed the water was safe, but relented a month ago when Hanna-Attisha’s deeper dissection of the data found high levels of lead in Flint children.

“Infants and children who drink water containing lead in excess of the action level could experience delays in their physical or mental development,” according to the EPA. “Children could show slight deficits in attention span and learning abilities.”

Water safety fears led residents such as Kelly Wilson to make tough choices. The 55-year-old regularly makes the trek from her subsidized apartment building to the Family Dollar store just a block to buy water.

Wilson said she spends between $40 and $50 each month, which is difficult since the widow’s fixed income during the same period is $740.

She said she can’t afford all of the water she needs, so she puts her fears aside long enough to take showers and brush her teeth with the city water.

“I wonder when I’m showering and it gets in my pores — what is this doing to me?” Wilson said.

The lack of faith in Flint’s water isn’t surprising, Hanna-Attisha said.

“This community has been lied to, and they have no trust, no trust in government,” she added.

Critics hold the state responsible for the situation, since Gov. Rick Snyder's appointed emergency manager was in charge when the decision was made to begin drawing water from the river instead of the Detroit system's Lake Huron. Emails between state and federal officials have shown the DEQ was aware of potential problems stemming from a lack of corrosion control as early as February.

On Thursday, a pair of Democratic Flint-area state representatives called for an investigation into how DEQ handled water samples from one home in the city that showed exorbitant levels of lead early in the year. Reps. Phil Phelps of Flushing and Sheldon Neeley of Flint, responding to a Michigan Radio report, said they want to know if state officials threw out the results to keep the city from exceeding federal standards.

In October, DEQ Director Dan Wyant said staffers failed to apply the proper water quality protections as prescribed by the federal Lead and Copper Rule.

Also on Thursday, Senate Minority Leader Jim Ananich, D-Flint, renewed calls for legislative hearings on the state's failure to handle the situation properly. It would include a Senate subcommittee with subpoena powers.

"The Legislature has a unique role and responsibility in thoroughly examining what went wrong, what still needs to be fixed and how to ensure this sort of crisis never happens again," Ananich said.

Snyder appointed a five-person, bipartisan task force to review the actions of DEQ and other governmental agencies in Flint's switch to Flint River water.

State Auditor General Doug Ringle said last week his office will look into questions raised about the department's Office of Drinking Water and Municipal Assistance. Ringler's office already had an operational audit of the office underway before Ananich requested the state auditor find out what "accountability measures" are in place for DEQ staff who do not follow water testing data protocols.

In the meantime, Hanna-Attisha is recommending that those using Flint's tap water use tap filters that are being supplied for free by the city and state. The water also should be used cold, she said, since warmer temperatures cause a greater amount of leaching in lead pipes and plumbing.

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(313) 222-2034

Detroit News Staff Writer Chad Livengood contributed.

By Mark Brush • 23 hours ago

Tap water in a Flint hospital on Oct. 16, 2015.

The Environmental Protection Agency says it's conducting a full review of what happened in Flint.

For more than a year, state officials assured city residents their water was safe. Those assurances turned out to be wrong.

And it wasn't until some residents got outside experts involved -- who not only found elevated lead levels in the drinking water, but that blood lead levels were also rising in Flint kids – that the state admitted there was a problem.

One of the more troubling charges made against the state is that the Michigan Department of Environmental Quality knowingly dropped lead test samples to avoid exceeding a federal drinking water standard.

Curt Guyette with the ACLU of Michigan wrote about this in September:

An investigation by the ACLU of Michigan -- conducted in conjunction with the study of Flint's water by researchers at Virginia Tech and the citizen group Coalition for Clean Water -- has found that the city, operating under the oversight of the Michigan Department of Environmental Quality, took multiple actions that skewed the outcome of its tests to produce favorable results.

State officials maintain they followed the testing rules for lead under the Safe Drinking Water Act.

But others say that's just not true.

Marc Edwards is an expert on water treatment at Virginia Tech University. He said the first and most important step did not occur in Flint.

The city is supposed to test homes known to either be serviced by lead service lines, or that have lead pipes or pipes with lead solder in them.

Large water systems are supposed to test the "worst-case-scenario" homes to see if they have a problem.

That's the point of the federally-mandated Lead and Copper Rule. Large water systems are supposed to test the "worst-case-scenario" homes to see if they have a problem.

"They did not do that, and that is the primary reason that they missed the worst of the lead problem," says Edwards.

Edwards lays the blame squarely on the Michigan Department of Environmental Quality – not the city of Flint.

It was a state-appointed emergency manager who made the decision to switch the city's source of drinking water to save money.

And it was the state's responsibility to make sure that Flint was managing that switch correctly.

An altered report

"Even though they didn't sample the highest risk homes in the samples collected by the city, they were still over the action level. So MDEQ, and I've never seen this in 25 years, took the initial report that the city gave and altered it," says Edwards.

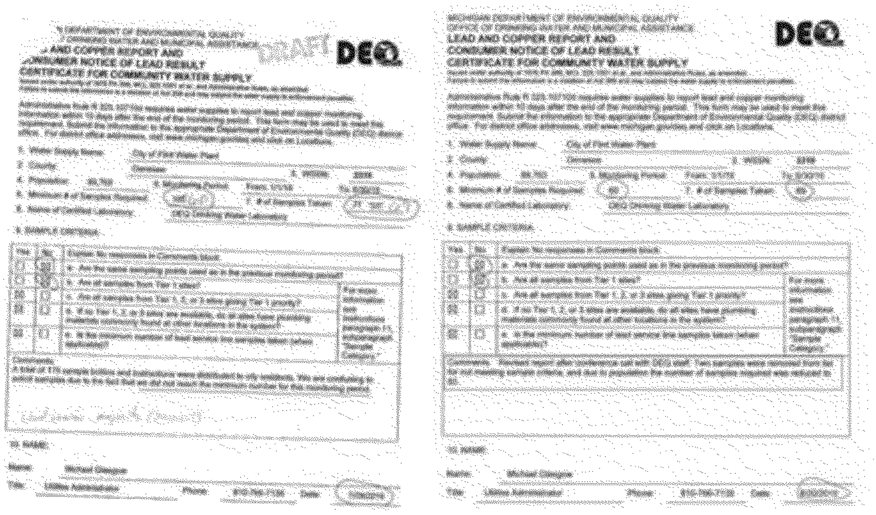
Edwards and the ACLU of Michigan obtained internal documents that showed the city originally submitted 71 drinking water samples to the state in July.

We did the math on those samples using the federal lead and copper rule. This original sample pool of 71 put the city over the federally mandated action level of 15 parts per billion of lead.

The city would have had to alert people that there was a lead problem, and they would have had to implement a corrosion control plan to keep the water from corroding the insides of pipes – a plan that was surprisingly absent in Flint. And they may have been required to start replacing lead service lines in the city.

This is all an expensive proposition in a city that made the switch to save money.

But that never happened.



The two reports side by side. The "draft" report shows the original number of samples taken in Flint. The final report shows two samples were dropped.

Credit Flintwaterstudy.org

State officials came back and told the city to drop two samples.

Dropping those two samples put the city below the action level for lead. If the state had just dropped one high sample, Flint still would have been over the federal action level.

But dropping two samples put them below the action level.

To see exactly how this math works, check out this post.

The samples in question

Mike Glasgow is with the city of Flint. He's the guy in charge of collecting the water samples.

Glasgow remembers including samples taken at one home that showed extremely high lead levels. A sample of Lee Anne Walters' home turned up a result of 104 parts per billion – almost seven times the federally mandated limit.

"I don't know that I can give you a good enough answer to tell you why they decided to remove it from the report."

“They instructed me to take it off the report,” says Glasgow. “I know she had taken some other samples and they had all the results too. I don't know that I can give you a good enough answer to tell you why they decided to remove it from the report.”

The state denies any wrongdoing.

Dan Wyant is the director of the Michigan Department of Environmental Quality.

“What you’re suggesting is somehow that we dropped two tests purposely, and I can say we’ve gone back and looked at this,” says Wyant. “And so we’ve asked somebody in our laboratory. When the test comes in that doesn’t meet the protocol definition, they drop that test by definition alone, and so the reality is that’s how that sample got dropped.”

State officials say a sample from one home was dropped because there was a water filter. Homes with water filters are excluded because they might give a low result.

But the test result that was dropped –- the result from Lee Anne Walters home -- was the highest test result in the 2015 sampling pool: 104 parts per billion.

The second sample that was dropped showed 20 parts per billion of lead. The state says that sample was dropped because federal rules state that a sample can’t come from a business. It has to come from a home.

Spirit of the rule not followed?

So state officials say they made Flint drop test results because those samples didn’t follow guidelines.

But the guidelines for all the samples weren’t followed in the first place.

Federal rules say you must test the “worst-case-scenario” homes – the homes connected to pipes with lead in them. But the city didn’t do that.

Elin Betanzo is a water quality expert with the Northeast-Midwest Institute. She worked in the EPA’s drinking water office for eight years.

She says the rules say if a site is sampled – even if it’s not technically supposed to be in the sampling pool – the results should still be used to determine if the water supply is safe.

“If they did find high lead levels, that’s high lead levels in the water system. And the whole point of the rule is to be protective of public health for everyone consuming that water," Betanzo says. "So if one unplanned home is having high lead levels, that should factor into the compliance calculation.”

Marc Edwards says there are a lot of ways water utilities can "game" the lead and copper rule to try to turn up favorable results. In 2009, his team put out a white paper showing what he calls a list of "cheating strategies" used to get around the spirit of the lead and copper rule.

There are a lot of people looking into what was done in Flint. Governor Snyder appointed a panel to conduct a review. And EPA officials say they hope to share the results of their review sometime next week.

###

To: Hedman, Susan[hedman.susan@epa.gov]
From: Kaplan, Robert
Sent: Sat 11/7/2015 2:31:31 PM
Subject: Re: Nov. 6 Flint Clip

Thanks. We should discuss when you have a moment. Let me know when you would like me to call. Bob

Sent from my iPhone

On Nov 6, 2015, at 11:05 PM, Hedman, Susan <hedman.susan@epa.gov> wrote:

> Please be sure to read these clips.
>
> **From:** Cassell, Peter
> **Sent:** Friday, November 06, 2015 9:39 AM
> **To:** Kelley, Jeff <kelley.jeff@epa.gov>; Hedman, Susan <hedman.susan@epa.gov>; Kaplan, Robert <kaplan.robert@epa.gov>; Hyde, Tinka <hyde.tinka@epa.gov>
> **Cc:** Rowan, Anne <rowan.anne@epa.gov>; Beckmann, Ronna Erin <beckmann.ronna@epa.gov>; Harrison, Melissa <Harrison.Melissa@epa.gov>; Abrams, Dan <Abrams.Dan@epa.gov>; Poy, Thomas <poy.thomas@epa.gov>; Fortin, Denise <Fortin.Denise@epa.gov>; Deamer, Eileen <deamer.eileen@epa.gov>; Singer, Joshua <Singer.Joshua@epa.gov>; Arcaute, Francisco <Arcaute.Francisco@epa.gov>; Peterson, John <peterson.john@epa.gov>; Loop, Travis <Loop.Travis@epa.gov>; Purchia, Liz <Purchia.Liz@epa.gov>; Allen, Laura <Allen.Laura@epa.gov>; Henry, Timothy <henry.timothy@epa.gov>; Arcaute, Francisco <Arcaute.Francisco@epa.gov>
> **Subject:** Nov. 6 Flint Clips
>
> # FLINT DRINKING WATER CLIPS
>
> US. EPA Region 5 – as prepared by Peter Cassell *(ORA/OEC/PA)* On Nov. 6
>
> - Ananich seeks subpoena power in call for legislative hearings on Flint water crisis (MLive)
> - Flint to restart water shutoffs (Michigan Radio)
> - Legislators calling for investigation over Flint report (CBS 3 – WWMT)
> - Legislators call for investigation into altered Flint lead report (MLive)
> - State legislators calling for federal investigation into MDEQ (CBS 5 – WNEM)

- Feds warn of new threat in Flint water that may pose “immediate and acute health hazards” (Michigan Radio)
- EPA's report not surprising for residents (CBS 5 – WNEM)
- Experts: Water health dangers don’t subside in Flint (Detroit News)
- Expert says Michigan officials changed a Flint lead report to avoid federal action (Michigan Radio)

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http://www.mlive.com/lansing-news/index.ssf/2015/11/ananich_seeks_subpoena_power_i.html

By Jonathan Oosting | joosting@mlive.com
Follow on Twitter
on November 05, 2015 at 12:50 PM, updated November 05, 2015 at 1:21 PM

LANSING, MI — Senate Minority Leader Jim Ananich on Thursday formally requested legislative hearings on the Flint water crisis and response by the Michigan Department of Environmental Quality.

"In the handling of the Flint water case, failures at multiple levels of government led to my community — and particularly its children — being poisoned," Ananich said in a letter to Senate Majority Leader Arlan Meekhof, referencing high lead levels found after a switch to Flint River drinking water.

"We need to make sure that the executive branch is faithfully executing the laws passed by this body and protecting all Michigan taxpayers by making sure the $9.35 million in state funds appropriated for the Flint water crisis are used correctly."

Gov. Rick Snyder has already appointed a task force to review the Flint water crisis. The federal Environmental Protection Agency is also investigating, and the state Auditor General recently agreed to expand an ongoing audit of MDEQ's drinking water division.

But Ananich, in his letter, noted that the task force lacks subpoena power that a Senate committee could use to compel testimony. He pointed out that none of the state or federal probes will require sworn testimony and highlighted a common characteristic: "a branch of government or agency is investigating themselves."

The Flint Democrat proposed a series of six legislative hearings by the end of the year "in an appropriate" Senate committee, such as the newly formed Oversight panel.

Meekhof, R-West Olive, did not sound immediately enthused by Ananich's proposal and does not appear prepared to call for hearings any time soon.

"He and I have been talking about that, but I'd like the folks that are in charge of gathering data and information to do that," Meekhof said, noting that the Senate could have a busy couple months with energy and Detroit education legislation in the pipeline.

Meekhof also offered support for MDEQ Director Dan Wyant, who has faced criticism over his department's handling of the water crisis.

"I believe they will find solutions and they will find the thing that need to be corrected," Meekhof said. "I have very high confidence in the director."

Flint began drawing drinking water from the Flint River in April of 2014, while the city was under control of a state-appointed emergency manager. City Council had previously approved a long-term plan to move off Detroit water and join the new Karegnondi Water Authority but did not vote on using river water in the interim.

Wyant recently replaced the head of the Office of Drinking Water and Municipal Assistance, acknowledging that the state had enforced the wrong federal standards for treating Flint River water for more than 17 months, failing to require that the city make it less corrosive.

Ananich said public hearings in a legislative committee would further help the public understand the crisis and help the state or other cities avoid similar problems in the future.

"The solution is going to be ongoing when it comes to helping these kids that have brain damage because of the lead," he told reporters after session. "But I think this helps get some accountability. I think citizens deserve that. I think taxpayers deserve that. This could be one way to do it."

Jonathan Oosting is a Capitol reporter for MLive Media Group. *Email him*, find him on *Facebook* or follow him on *Twitter*.

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http://michiganradio.org/post/flint-restart-water-shutoffs

By Steve Carmody • 19 hours ago

Beginning next month, the city of Flint plans to again disconnect water customers who aren’t paying their bills.

The first shutoff notices are going out this week.

This summer, Judge Archie Hayman judge ordered Flint to stop shutting off water service to delinquent customers. The judge found Flint illegally raised rates by 35% in 2011. As part of his ruling, the judge ordered the city to roll back the water rates and stop disconnecting people who had run up unpaid bills under the old rate structure.

But the judge's order only covered unpaid bills before September. Now those new bills, with the lower rates, are becoming past due.

"At the point where the bills were actually due, our customers will have had over two and half months past their due date to pay," says Jody Lundquist, the city of Flint's Chief Financial Officer.

Lundquist says 60% of Flint water customers are behind on their water bills. She says Flint's water revenues are down $4 million since September compared to the same time last year.

Many people in Flint stopped paying their bills to protest the city's problem-plagued water system. Others are still having trouble paying the high cost of water in Flint, which for many is still over $100 a month.

Some Flint resident also question why they should pay for water when the state and a local foundation are paying $10 million to reconnect Flint to Detroit water.

City officials point out that water bills include the cost of maintaining the system, which is a bigger part of their bill than the water.

"There is a cost to provide that and it's important that the city's able to do that," says Flint Public Works Director Howard Croft.

City officials are organizing staff to make sure there are city workers to handle both the shutoffs, and the reconnections when customers pay their overdue bills.

On a positive note, city officials say that the water flowing through Flint's system is now entirely from Detroit. Last month, Flint switched back to Detroit water after an 18-month experiment getting its drinking water from its namesake river. The Flint River proved to be difficult for city staffers to properly treat, leading to problems with taste, smell and appearance. The corrosiveness of the river also damaged pipes, creating an issue with rising lead levels in the water.

Thousands of water filters have been distributed to city residents to filter out the lead. But there are concerns the lead problem will persist for a long time. More filter giveaways are planned.

http://www.wwmt.com/news/features/state/stories/Legislators-calling-for-investigation-over-Flint-report-228582.shtml#.VjzENiuvyHI

Updated: Fri, Nov 06 2015, 08:56 AM – **Video at link**

LANSING, Mich. (NEWSCHANNEL 3) - Legislators are pushing for a federal investigation into a botched Flint report.

Two Michigan state reps, including one from Flint, are demanding an investigation after another controversial lead report.

A Michigan radio station reported the Department of Environmental Quality knowingly dropped two lead test samples to avoid exceeding a federal drinking water standard.

They're also calling on the governor to remove the director of the Department of Environmental Quality.

Meanwhile, Flint is sending out its first water shutoff notices since a judge's ruling temporarily halted the practice in August.

About 1,800 notices for past-due accounts are expected to be mailed out this week.

The notices only cover debts from water bills issued since the city decreased water and sewer rates to comply with a circuit court judge's orders.

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http://www.mlive.com/news/flint/index.ssf/2015/11/legislators_call_for_investiga.html

By Amanda Emery | aemery@mlive.com
on November 05, 2015 at 7:02 PM, updated November 05, 2015 at 7:17 PM

FLINT, MI -- Two state representatives are pushing for a federal investigation into the Michigan Department of Environmental Quality (DEQ).

State Reps. Phil Phelps (D-Flushing) and Sheldon Neeley (D-Flint) are calling for the federal investigation into the DEQ, according to a news release from Phelps' office. The call for the investigation came after a Michigan Radio story was publish Thursday, Nov. 5 claiming the DEQ knowingly dropped two lead test samples to avoid exceeding a federal drinking water standards.

Neeley is also calling for DEQ Director Dan Wyant to be removed from his position by Gov. Rick Snyder. Neeley has also sent several letters to the governor and Attorney General Bill Schuette requesting they take action, but according to the release neither office has responded to the legislator.

"It is shameful and appalling to me that the men and women we entrust to keep us safe at the highest levels of state government would purposely put the health of Flint's residents at risk," Neeley said in a statement. "For the past year, the Flint community has been subjected to high levels of lead in their water. Action clearly could have been taken earlier to protect the children who have been the most at risk. This behavior borderlines on criminal activity. The governor should immediately terminate the director of the DEQ and all culpable members of the staff."

Mike Glasgow, an employee with the city of Flint who collected the water samples, was told to take a sample from Lee Anne Walter's Flint home off the report, according to the Michigan Radio story. That sample came back with a lead result of 104 parts per billion -- seven times the federally mandated limit, according to the release.

"You can read the story, and know immediately that what the DEQ is saying and what actually happened doesn't add up," Phelps said in a statement. "This is just one more instance of the DEQ covering something up, and even more of a reason they fought me when I sent a FOIA requesting information relating to the water crisis in Flint. There must be a full federal investigation into the state on how they handled these samples."

According to the release, Wyant attributed the drop of Walters' sample was because a water filter was used in the home.

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http://www.wnem.com/story/30451692/state-legislators-calling-for-federal-investigation-into-mdeq#ixzz3qj39ukvf

Posted: Nov 05, 2015 10:19 PM CST Updated: Nov 05, 2015 10:19 PM CST

Posted By Lauren Chapman

FLINT, MI (WNEM) -

Berston Fieldhouse is alive with activity as pick-up games are in full swing.

It didn't take long for those running the courts to work up a sweat.

But just like many places across the city, the water fountain came with a very real warning.

"Makes you feel some type of way, it's not safe, it's not good," said basketball player Briana Mayes.

Forcing many to stick with bottled water.

"It's no telling how much we've been exposed to and how much is actually being kept from us," said resident Nafisah McClendon.

And the concerns about lead exposure in Flint's water has two local lawmakers saying they've seen enough.

"This is definitely the most negligent that I've seen at the state level," said state Rep. Phil Phelps.

Phelps is joining state Rep. Sheldon Neeley in calling for a federal investigation into the state's Department of Environmental Quality.

This all comes in the wake of Michigan Radio’s discovery that the DEQ knowingly dropped two lead samples to avoid exceeding federal drinking water guidelines.

"If they were playing by the rules from the get-go, this whole situation might not have happened at all," Phelps said.

Phelps and Neeley also want Gov. Rick Snyder to remove DEQ Director Dan Wyant from that position.

They believe he was in the lead and oversaw what they call a massive cover-up.

"If it comes out that these were deliberate cover up attempts, I don't think people only need to lose their jobs, there needs to be people sitting in jail," Phelps said.

Phelps said they’re waiting for a response from the federal government and Synder.

And as water quality continues to be a question mark in the city, there are many others also waiting.

"You wonder, from the people who have been effected, what long term effects it will have on them, and you won't know until, unfortunately, it's already happening," McClendon said.

http://michiganradio.org/post/feds-warn-new-threat-flint-water-may-pose-immediate-and-acute-health-hazards

By Lindsey Smith • Nov 5, 2015

The U.S. Environmental Protection Agency says people living in Flint should be warned of the potential for "high lead release" into their tap water if road work or other physical disturbances to lead and even non-lead service lines occur.

The agency says these physical disturbances "could pose an immediate and acute health hazard" to residents.

EPA released the information late Wednesday in a report sent to Michigan's Department of Environmental Quality and the city of Flint. It's the finalized version of an interim report that was leaked to the ACLU over the summer.

This version of the report lays out how a combination of factors may have led to extremely high lead levels at one Flint home. It also says that similar situations could happen in the future.

Regulators say scale would have built up over time inside the distribution pipes in Flint. These scales are described as "protective" because they help prevent water from coming into contact with lead distribution pipes, and leaching lead into tap water in people's homes.

"Lead service lines are the largest source of lead, when present, and can contribute up to 75 percent of the total mass of lead released into the water," the report says.

But the scales can pose a big risk too. Over time, lead can accumulate in the scales. Even non lead service lines could be at risk.

"Studies have shown that the scales within galvanized iron pipe downstream of lead pipe segments can be 'seeded' with lead from the lead portion of the service," the report says.

The report says the corrosiveness of the Flint River water without proper treatment "are well known factors that can contribute to high lead release."

The head of Michigan's Department of Environmental Quality previously admitted it mistakenly allowed Flint to stop corrosion control treatment when it switched water sources. This week the EPA issued a memorandum to all the agency's regional directors, clarifying that water systems must study a water source to determine the best corrosion control treatment before making a switch.

Without proper corrosion control treatment, and when road work or other physical disturbances to underground pipes happens, these scales can be “dislodged” into people’s tap water. The EPA says it’s “reasonable to assume” that these disturbances could release lead laden scale into tap water, even if the service line is not made of lead.

At Lee Anne Walters’ home, the iron service line was unusually long; at least 150 feet. The EPA believes the scale on her home’s iron service line was ‘seeded’ with lead. The agency believes the water chemistry and a physical disturbance led to extremely high lead levels in Walters’ home. The report notes two relatively new asphalt patches on the road near her home.

The lack of corrosion control treatment in Flint is now well known. But this is the first time physical disturbance has been mentioned as a big risk.

“The jarring and vibration associated with excavation can dislodge the high lead-bearing scales from with the service line pipes,” the report says.

The report makes several recommendations to prevent the release of “large amounts of scale and sediment that could pose an immediate and acute health hazard to the residents.”

More data from intact pipes, lead and non-lead, need to be collected. Assessing the scales within these lines in Flint is “essential” to determine the risk to residents, the report says.

Develop training and public education on potential for “high lead release” from the scales. The report says people should know when utility work is going on and the “potential risk of increased lead levels due to these disturbances.”

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http://www.wnem.com/story/30450603/epas-report-adds-to-residents-concern#ixzz3qj3qs0zy

Posted: Nov 05, 2015 6:28 PM CST Updated: Nov 05, 2015 10:20 PM CST

Posted By Lauren Chapman - By Ronnie Duncan

VIDEO AND RA INTERVIEW

FLINT, MI (WNEM) - Arthur Woodson is one of many protesters that called for the Environmental Protection Agency to look into his city’s water crisis.

“I wasn't surprised – I am just glad that they brought it out to the open,” Woodson said.

In a detailed report released on Wednesday, the EPA laid out its findings on Flint's water problems.

It found increased lead levels in off Hemphill and Pengelly Roads near Bryant Street.

Susan Hedman is the EPA's administrator for this region.

"The U.S. Environmental Protection Agency is very concerned about lead levels in Flint," Hedman said.

Pete Hall only uses his water to wash his car as his grandson looks on. However, that's as close as he will let him get to the water.

“I'm more scared for the kids drinking it because kids when they get thirsty they going to drink the first thing available," Hall said.

Neighbors said they see no good news insight regarding the water woes of Flint, and they want to be tested.

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http://www.detroitnews.com/story/news/politics/2015/11/05/experts-water-health-dangers-subside-flint/75255704/

Jim Lynch, The Detroit News 11:32 p.m. EST November 5, 2015

Local health officials and the federal government are warning Flint residents that the danger from their tap water has not subsided even though the city has reconnected to Detroit’s water system.

Dr. Mona Hanna-Attisha, the Hurley Medical Center pediatrician who uncovered lead exposure in city children two months ago, wants residents to continue their use of bottled water. This comes three weeks after Flint began receiving its drinking water from the Detroit Water and Sewerage Department.

For the previous 18 months, the city drew its water from the Flint River in an effort to save money. The high corrosive levels of the river water and a failure to use adequate corrosion controls led to unhealthy amounts of lead reaching residents.

In October, Flint and Detroit water officials announced Flint was back online with Detroit’s water system, but cautioned it was not a quick fix.

“While the actual switch ... will happen immediately, it is expected that the thorough transition from Flint River water to Detroit water will be complete in approximately three weeks,” DWSD said in a statement at the time. Along with the phosphates used by the Detroit system to control corrosion of lead in water delivery pipes, the city of Flint was expected to add measures for protection.

But Hanna-Attisha doesn’t want residents taking any chances.

“Even though we’ve switched to DWSD, we have lost the sealed layer (protecting against) corrosion,” she said. “And we’ve aged our infrastructure 30 years. Nobody knows when that seal will come back ...

“For our most vulnerable populations, pregnant women and infants, they should never be using tap water.”

Officials with Michigan’s Department of Environmental Quality agreed with Hanna-Attisha’s assessment on corrosion measures, saying it has taken “up to several months” in other cities across the country. As a result, residents should try to find out exactly what is or isn’t in their water.

“The only way for a homeowner to know for certain is to have their home tested,” said DEQ spokesman Brad Wurfel. “DEQ and the city of Flint offer free testing for Flint residents, and we recommend concerned residents take advantage of it.”

Greg Eno, a Detroit water system spokesman, said the utility simply provides the water complete with corrosion controls. Measuring how quickly the controls reach maximum effectiveness is done by the city of Flint, which owns the pipelines, he said.

On Wednesday, U.S. Environmental Protection Agency officials issued their own warnings in a report that highlighted the lead dangers inherent in the city’s aging underground infrastructure.

“... (E)ven with corrosion control treatment in place in the future, physical disturbances will be capable of dislodging the high lead-bearing scale and sediment from non-lead pipes and well as lead pipes...,” according to the report. Such disturbances include construction work and line replacement.

Flint residents have endured problems with their water since the spring of 2014, when the city’s state-appointed emergency manager severed the relationship with the Detroit water system system. The hope was that the switch to the Flint River would help the financially troubled city save money until its new water system that draws water from Lake Huron — the Karegondi Water Authority — becomes operational in the second half of 2016.

Almost immediately after the switch, however, residents began reporting foul odors, strange tastes and cloudiness in the water coming from their taps. Local and state officials argued that testing showed the water was safe, but relented a month ago when Hanna-Attisha’s deeper dissection of the data found high levels of lead in Flint children.

“Infants and children who drink water containing lead in excess of the action level could experience delays in their physical or mental development,” according to the EPA. “Children could show slight deficits in attention span and learning abilities.”

Water safety fears led residents such as Kelly Wilson to make tough choices. The 55-year-old regularly makes the trek from her subsidized apartment building to the Family Dollar store just a block to buy water.

Wilson said she spends between $40 and $50 each month, which is difficult since the widow’s fixed income during the same period is $740.

She said she can’t afford all of the water she needs, so she puts her fears aside long enough to take showers and brush her teeth with the city water.

“I wonder when I’m showering and it gets in my pores — what is this doing to me?” Wilson said.

The lack of faith in Flint’s water isn’t surprising, Hanna-Attisha said.

“This community has been lied to, and they have no trust, no trust in government,” she added.

Critics hold the state responsible for the situation, since Gov. Rick Snyder’s appointed emergency manager was in charge when the decision was made to begin drawing water from the river instead of the Detroit system’s Lake Huron. Emails between state and federal officials have shown the DEQ was aware of potential problems stemming from a lack of corrosion control as early as February.

On Thursday, a pair of Democratic Flint-area state representatives called for an investigation into how DEQ handled water samples from one home in the city that showed exorbitant levels of lead early in the year. Reps. Phil Phelps of Flushing and Sheldon Neeley of Flint, responding to a Michigan Radio report, said they want to know if state officials threw out the results to keep the city from exceeding federal standards.

In October, DEQ Director Dan Wyant said staffers failed to apply the proper water quality protections as prescribed by the federal Lead and Copper Rule.

Also on Thursday, Senate Minority Leader Jim Ananich, D-Flint, renewed calls for legislative hearings on the state’s failure to handle the situation properly. It would include a Senate subcommittee with subpoena powers.

“The Legislature has a unique role and responsibility in thoroughly examining what went wrong, what still needs to be fixed and how to ensure this sort of crisis never happens again,” Ananich said.

Snyder appointed a five-person, bipartisan task force to review the actions of DEQ and other governmental agencies in Flint's switch to Flint River water.

State Auditor General Doug Ringle said last week his office will look into questions raised about the department's Office of Drinking Water and Municipal Assistance. Ringler's office already had an operational audit of the office underway before Ananich requested the state auditor find out what "accountability measures" are in place for DEQ staff who do not follow water testing data protocols.

In the meantime, Hanna-Attisha is recommending that those using Flint's tap water use tap filters that are being supplied for free by the city and state. The water also should be used cold, she said, since warmer temperatures cause a greater amount of leaching in lead pipes and plumbing.

jlynch@detroitnews.com

(313) 222-2034

Detroit News Staff Writer Chad Livengood contributed.

By Mark Brush • 23 hours ago

<image002.jpg>Tap water in a Flint hospital on Oct. 16, 2015.

The Environmental Protection Agency says it's conducting a full review of what happened in Flint.

For more than a year, state officials assured city residents their water was safe. Those assurances turned out to be wrong.

And it wasn't until some residents got outside experts involved -- who not only found elevated lead levels in the drinking water, but that blood lead levels were also rising in Flint kids – that the state admitted there was a problem.

One of the more troubling charges made against the state is that the Michigan Department of Environmental Quality knowingly dropped lead test samples to avoid exceeding a federal drinking water standard.

Curt Guyette with the ACLU of Michigan wrote about this in September:

An investigation by the ACLU of Michigan -- conducted in conjunction with the study of Flint's water by researchers at Virginia Tech and the citizen group Coalition for Clean Water -- has found that the city, operating under the oversight of the Michigan Department of Environmental Quality, took multiple actions that skewed the outcome of its tests to produce favorable results.

State officials maintain they followed the testing rules for lead under the Safe Drinking Water Act.

But others say that’s just not true.

Marc Edwards is an expert on water treatment at Virginia Tech University. He said the first and most important step did not occur in Flint.

The city is supposed to test homes known to either be serviced by lead service lines, or that have lead pipes or pipes with lead solder in them.

Large water systems are supposed to test the "worst-case-scenario" homes to see if they have a problem.

That’s the point of the federally-mandated Lead and Copper Rule. Large water systems are supposed to test the “worst-case-scenario” homes to see if they have a problem.

“They did not do that, and that is the primary reason that they missed the worst of the lead problem,” says Edwards.

Edwards lays the blame squarely on the Michigan Department of Environmental Quality – not the city of Flint.

It was a state-appointed emergency manager who made the decision to switch the city’s source of drinking water to save money.

And it was the state’s responsibility to make sure that Flint was managing that switch correctly.

An altered report

“Even though they didn’t sample the highest risk homes in the samples collected by the city, they were still over the action level. So MDEQ, and I’ve never seen this in 25 years, took the initial report that the city gave and altered it,” says Edwards.

Edwards and the ACLU of Michigan obtained internal documents that showed the city originally submitted 71 drinking water samples to the state in July.

We did the math on those samples using the federal lead and copper rule. This original sample pool of 71 put the city over the federally mandated action level of 15 parts per billion of lead.

The city would have had to alert people that there was a lead problem, and they would have had to implement a corrosion control plan to keep the water from corroding the insides of pipes – a plan that was surprisingly absent in Flint. And they may have been required to start replacing lead service lines in the city.

This is all an expensive proposition in a city that made the switch to save money.

But that never happened.

<image006.jpg>

The two reports side by side. The "draft" report shows the original number of samples taken in Flint. The final report shows two samples were dropped.

Credit Flintwaterstudy.org

State officials came back and told the city to drop two samples.

Dropping those two samples put the city below the action level for lead. If the state had just dropped one high sample, Flint still would have been over the federal action level.

But dropping two samples put them below the action level.

To see exactly how this math works, check out this post.

The samples in question

Mike Glasgow is with the city of Flint. He's the guy in charge of collecting the water samples.

Glasgow remembers including samples taken at one home that showed extremely high lead levels. A sample of Lee Anne Walters' home turned up a result of 104 parts per billion – almost seven times the federally mandated limit.

"I don't know that I can give you a good enough answer to tell you why they decided to remove it from the report."

“They instructed me to take it off the report,” says Glasgow. “I know she had taken some other samples and they had all the results too. I don't know that I can give you a good enough answer to tell you why they decided to remove it from the report.”

The state denies any wrongdoing.

Dan Wyant is the director of the Michigan Department of Environmental Quality.

“What you’re suggesting is somehow that we dropped two tests purposely, and I can say we’ve gone back and looked at this,” says Wyant. “And so we’ve asked somebody in our laboratory. When the test comes in that doesn’t meet the protocol definition, they drop that test by definition alone, and so the reality is that’s how that sample got dropped.”

State officials say a sample from one home was dropped because there was a water filter. Homes with water filters are excluded because they might give a low result.

But the test result that was dropped –- the result from Lee Anne Walters home -- was the highest test result in the 2015 sampling pool: 104 parts per billion.

The second sample that was dropped showed 20 parts per billion of lead. The state says that sample was dropped because federal rules state that a sample can’t come from a business. It has to come from a home.

Spirit of the rule not followed?

So state officials say they made Flint drop test results because those samples didn’t follow guidelines.

But the guidelines for all the samples weren’t followed in the first place.

Federal rules say you must test the “worst-case-scenario” homes – the homes connected to pipes with lead in them. But the city didn’t do that.

Elin Betanzo is a water quality expert with the Northeast-Midwest Institute. She worked in the EPA’s drinking water office for eight years.

She says the rules say if a site is sampled – even if it’s not technically supposed to be in the sampling pool – the results should still be used to determine if the water supply is safe.

“If they did find high lead levels, that’s high lead levels in the water system. And the whole point of the rule is to be protective of public health for everyone consuming that water," Betanzo says. "So if one unplanned home is having high lead levels, that should factor into the compliance calculation.”

Marc Edwards says there are a lot of ways water utilities can "game" the lead and copper rule to try to turn up favorable results. In 2009, his team put out a white paper showing what he calls a list of "cheating strategies" used to get around the spirit of the lead and copper rule.

There are a lot of people looking into what was done in Flint. Governor Snyder appointed a panel to conduct a review. And EPA officials say they hope to share the results of their review sometime next week.

###

To: Kaplan, Robert[kaplan.robert@epa.gov]
From: Hedman, Susan
Sent: Sat 11/7/2015 3:45:05 PM
Subject: Re: Nov. 6 Flint Clip

Calling you now.

Sent from my iPhone

On Nov 7, 2015, at 8:31 AM, Kaplan, Robert <kaplan.robert@epa.gov> wrote:

> Thanks. We should discuss when you have a moment. Let me know when you would like me to call. Bob
>
> Sent from my iPhone
>
> On Nov 6, 2015, at 11:05 PM, Hedman, Susan <hedman.susan@epa.gov> wrote:
>
> > Please be sure to read these clips.
> >
> > **From:** Cassell, Peter
> > **Sent:** Friday, November 06, 2015 9:39 AM
> > **To:** Kelley, Jeff <kelley.jeff@epa.gov>; Hedman, Susan <hedman.susan@epa.gov>; Kaplan, Robert <kaplan.robert@epa.gov>; Hyde, Tinka <hyde.tinka@epa.gov>
> > **Cc:** Rowan, Anne <rowan.anne@epa.gov>; Beckmann, Ronna Erin <beckmann.ronna@epa.gov>; Harrison, Melissa <Harrison.Melissa@epa.gov>; Abrams, Dan <Abrams.Dan@epa.gov>; Poy, Thomas <poy.thomas@epa.gov>; Fortin, Denise <Fortin.Denise@epa.gov>; Deamer, Eileen <deamer.eileen@epa.gov>; Singer, Joshua <Singer.Joshua@epa.gov>; Arcaute, Francisco <Arcaute.Francisco@epa.gov>; Peterson, John <peterson.john@epa.gov>; Loop, Travis <Loop.Travis@epa.gov>; Purchia, Liz <Purchia.Liz@epa.gov>; Allen, Laura <Allen.Laura@epa.gov>; Henry, Timothy <henry.timothy@epa.gov>; Arcaute, Francisco <Arcaute.Francisco@epa.gov>
> > **Subject:** Nov. 6 Flint Clips
> >
> > # FLINT DRINKING WATER CLIPS
> >
> > US. EPA Region 5 – as prepared by Peter Cassell *(ORA/OEC/PA)* On Nov. 6

- Ananich seeks subpoena power in call for legislative hearings on Flint water crisis (MLive)
- Flint to restart water shutoffs (Michigan Radio)
- Legislators calling for investigation over Flint report (CBS 3 – WWMT)
- Legislators call for investigation into altered Flint lead report (MLive)
- State legislators calling for federal investigation into MDEQ (CBS 5 – WNEM)
- Feds warn of new threat in Flint water that may pose "immediate and acute health hazards" (Michigan Radio)
- EPA's report not surprising for residents (CBS 5 – WNEM)
- Experts: Water health dangers don't subside in Flint (Detroit News)
- Expert says Michigan officials changed a Flint lead report to avoid federal action (Michigan Radio)

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http://www.mlive.com/lansing-news/index.ssf/2015/11/ananich_seeks_subpoena_power_i.html

By Jonathan Oosting | joosting@mlive.com
Follow on Twitter
on November 05, 2015 at 12:50 PM, updated November 05, 2015 at 1:21 PM

LANSING, MI — Senate Minority Leader Jim Ananich on Thursday formally requested legislative hearings on the Flint water crisis and response by the Michigan Department of Environmental Quality.

"In the handling of the Flint water case, failures at multiple levels of government led to my community — and particularly its children — being poisoned," Ananich said in a letter to Senate Majority Leader Arlan Meekhof, referencing high lead levels found after a switch to Flint River drinking water.

"We need to make sure that the executive branch is faithfully executing the laws passed by this body and protecting all Michigan taxpayers by making sure the $9.35 million in state funds appropriated for the Flint water crisis are used correctly."

Gov. Rick Snyder has already appointed a task force to review the Flint water crisis. The federal Environmental Protection Agency is also investigating, and the state Auditor General recently agreed to expand an ongoing audit of MDEQ's drinking water division.

But Ananich, in his letter, noted that the task force lacks subpoena power that a Senate committee could use to compel testimony. He pointed out that none of the state or federal probes will require sworn testimony and highlighted a common characteristic: "a branch of government or agency is investigating themselves."

The Flint Democrat proposed a series of six legislative hearings by the end of the year "in an appropriate" Senate committee, such as the newly formed Oversight panel.

Meekhof, R-West Olive, did not sound immediately enthused by Ananich's proposal and does not appear prepared to call for hearings any time soon.

"He and I have been talking about that, but I'd like the folks that are in charge of gathering data and information to do that," Meekhof said, noting that the Senate could have a busy couple months with energy and Detroit education legislation in the pipeline.

Meekhof also offered support for MDEQ Director Dan Wyant, who has faced criticism over his department's handling of the water crisis.

"I believe they will find solutions and they will find the thing that need to be corrected," Meekhof said. "I have very high confidence in the director."

Flint began drawing drinking water from the Flint River in April of 2014, while the city was under control of a state-appointed emergency manager. City Council had previously approved a long-term plan to move off Detroit water and join the new Karegnondi Water Authority but did not vote on using river water in the interim.

Wyant recently replaced the head of the Office of Drinking Water and Municipal Assistance, acknowledging that the state had enforced the wrong federal standards for treating Flint River water for more than 17 months, failing to require that the city make it less corrosive.

Ananich said public hearings in a legislative committee would further help the public understand the crisis and help the state or other cities avoid similar problems in the future.

"The solution is going to be ongoing when it comes to helping these kids that have brain damage because of the lead," he told reporters after session. "But I think this helps get some accountability. I think citizens deserve that. I think taxpayers deserve that. This could be one way to do it."

Jonathan Oosting is a Capitol reporter for MLive Media Group. *Email him*, find him on *Facebook* or follow him on *Twitter*.

http://michiganradio.org/post/flint-restart-water-shutoffs

By Steve Carmody • 19 hours ago

Beginning next month, the city of Flint plans to again disconnect water customers who aren't paying their bills.

The first shutoff notices are going out this week.

This summer, Judge Archie Hayman judge ordered Flint to stop shutting off water service to delinquent customers. The judge found Flint illegally raised rates by 35% in 2011. As part of his ruling, the judge ordered the city to roll back the water rates and stop disconnecting people who had run up unpaid bills under the old rate structure.

But the judge's order only covered unpaid bills before September. Now those new bills, with the lower rates, are becoming past due.

"At the point where the bills were actually due, our customers will have had over two and half months past their due date to pay," says Jody Lundquist, the city of Flint's Chief Financial Officer.

Lundquist says 60% of Flint water customers are behind on their water bills. She says Flint's water revenues are down $4 million since September compared to the same time last year.

Many people in Flint stopped paying their bills to protest the city's problem-plagued water system. Others are still having trouble paying the high cost of water in Flint, which for many is still over $100 a month.

Some Flint resident also question why they should pay for water when the state and a local foundation are paying $10 million to reconnect Flint to Detroit water.

City officials point out that water bills include the cost of maintaining the system, which is a bigger part of their bill than the water.

"There is a cost to provide that and it's important that the city's able to do that," says Flint Public Works Director Howard Croft.

City officials are organizing staff to make sure there are city workers to handle both the shutoffs, and the reconnections when customers pay their overdue bills.

On a positive note, city officials say that the water flowing through Flint's system is now entirely from Detroit. Last month, Flint switched back to Detroit water after an 18-month experiment getting its drinking water from its namesake river. The Flint River proved to be difficult for city staffers to properly treat, leading to problems with taste, smell and appearance. The corrosiveness of the river also damaged pipes, creating an issue with rising lead levels in the water.

Thousands of water filters have been distributed to city residents to filter out the lead. But there are concerns the lead problem will persist for a long time. More filter giveaways are planned.

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http://www.wwmt.com/news/features/state/stories/Legislators-calling-for-investigation-over-Flint-report-228582.shtml#.VjzENiuvyHI

Updated: Fri, Nov 06 2015, 08:56 AM – **Video at link**

LANSING, Mich. (NEWSCHANNEL 3) - Legislators are pushing for a federal investigation into a botched Flint report.

Two Michigan state reps, including one from Flint, are demanding an investigation after another controversial lead report.

A Michigan radio station reported the Department of Environmental Quality knowingly dropped two lead test samples to avoid exceeding a federal drinking water standard.

They're also calling on the governor to remove the director of the Department of Environmental Quality.

Meanwhile, Flint is sending out its first water shutoff notices since a judge's ruling temporarily halted the practice in August.

About 1,800 notices for past-due accounts are expected to be mailed out this week.

The notices only cover debts from water bills issued since the city decreased water and sewer rates to comply with a circuit court judge's orders.

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http://www.mlive.com/news/flint/index.ssf/2015/11/legislators_call_for_investiga.html

By Amanda Emery | aemery@mlive.com
on November 05, 2015 at 7:02 PM, updated November 05, 2015 at 7:17 PM

FLINT, MI -- Two state representatives are pushing for a federal investigation into the Michigan Department of Environmental Quality (DEQ).

State Reps. Phil Phelps (D-Flushing) and Sheldon Neeley (D-Flint) are calling for the federal investigation into the DEQ, according to a news release from Phelps' office. The call for the investigation came after a Michigan Radio story was publish Thursday, Nov. 5 claiming the DEQ knowingly dropped two lead test samples to avoid exceeding a federal drinking water standards.

Neeley is also calling for DEQ Director Dan Wyant to be removed from his position by Gov. Rick Snyder. Neeley has also sent several letters to the governor and Attorney General Bill Schuette requesting they take action, but according to the release neither office has responded to the legislator.

"It is shameful and appalling to me that the men and women we entrust to keep us safe at the highest levels of state government would purposely put the health of Flint's residents at risk," Neeley said in a statement. "For the past year, the Flint community has been subjected to high levels of lead in their water. Action clearly could have been taken earlier to protect the children who have been the most at risk. This behavior borderlines on criminal activity. The governor should immediately terminate the director of the DEQ and all culpable members of the staff."

Mike Glasgow, an employee with the city of Flint who collected the water samples, was told to take a sample from Lee Anne Walter's Flint home off the report, according to the Michigan Radio story. That sample came back with a lead result of 104 parts per billion -- seven times the federally mandated limit, according to the release.

"You can read the story, and know immediately that what the DEQ is saying and what actually happened doesn't add up," Phelps said in a statement. "This is just one more instance of the DEQ covering something up, and even more of a reason they fought me when I sent a FOIA requesting information relating to the water crisis in Flint. There must be a full federal investigation into the state on how they handled these samples."

According to the release, Wyant attributed the drop of Walters' sample was because a water filter was used in the home.

http://www.wnem.com/story/30451692/state-legislators-calling-for-federal-investigation-into-mdeq#ixzz3qj39ukvf

Posted: Nov 05, 2015 10:19 PM CST Updated: Nov 05, 2015 10:19 PM CST

Posted By Lauren Chapman

FLINT, MI (WNEM) -

Berston Fieldhouse is alive with activity as pick-up games are in full swing.

It didn't take long for those running the courts to work up a sweat.

But just like many places across the city, the water fountain came with a very real warning.

"Makes you feel some type of way, it's not safe, it's not good," said basketball player Briana Mayes.

Forcing many to stick with bottled water.

"It's no telling how much we've been exposed to and how much is actually being kept from us," said resident Nafisah McClendon.

And the concerns about lead exposure in Flint's water has two local lawmakers saying they've seen enough.

"This is definitely the most negligent that I've seen at the state level," said state Rep. Phil Phelps.

Phelps is joining state Rep. Sheldon Neeley in calling for a federal investigation into the state's Department of Environmental Quality.

This all comes in the wake of Michigan Radio’s discovery that the DEQ knowingly dropped two lead samples to avoid exceeding federal drinking water guidelines.

"If they were playing by the rules from the get-go, this whole situation might not have happened at all," Phelps said.

Phelps and Neeley also want Gov. Rick Snyder to remove DEQ Director Dan Wyant from that position.

They believe he was in the lead and oversaw what they call a massive cover-up.

"If it comes out that these were deliberate cover up attempts, I don't think people only need to lose their jobs, there needs to be people sitting in jail," Phelps said.

Phelps said they're waiting for a response from the federal government and Synder.

And as water quality continues to be a question mark in the city, there are many others also waiting.

"You wonder, from the people who have been effected, what long term effects it will have on them, and you won't know until, unfortunately, it's already happening," McClendon said.

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http://michiganradio.org/post/feds-warn-new-threat-flint-water-may-pose-immediate-and-acute-health-hazards

By Lindsey Smith • Nov 5, 2015

The U.S. Environmental Protection Agency says people living in Flint should be warned of the potential for "high lead release" into their tap water if road work or other physical disturbances to lead and even non-lead service lines occur.

The agency says these physical disturbances "could pose an immediate and acute health hazard" to residents.

EPA released the information late Wednesday in a report sent to Michigan's Department of Environmental Quality and the city of Flint. It's the finalized version of an interim report that was leaked to the ACLU over the summer.

This version of the report lays out how a combination of factors may have led to extremely high lead levels at one Flint home. It also says that similar situations could happen in the future.

Regulators say scale would have built up over time inside the distribution pipes in Flint. These scales are described as "protective" because they help prevent water from coming into contact with lead distribution pipes, and leaching lead into tap water in people's homes.

“Lead service lines are the largest source of lead, when present, and can contribute up to 75 percent of the total mass of lead released into the water,” the report says.

But the scales can pose a big risk too. Over time, lead can accumulate in the scales. Even non lead service lines could be at risk.

“Studies have shown that the scales within galvanized iron pipe downstream of lead pipe segments can be ‘seeded’ with lead from the lead portion of the service,” the report says.

The report says the corrosiveness of the Flint River water without proper treatment “are well known factors that can contribute to high lead release.”

The head of Michigan’s Department of Environmental Quality previously admitted it mistakenly allowed Flint to stop corrosion control treatment when it switched water sources. This week the EPA issued a memorandum to all the agency’s regional directors, clarifying that water systems must study a water source to determine the best corrosion control treatment before making a switch.

Without proper corrosion control treatment, and when road work or other physical disturbances to underground pipes happens, these scales can be “dislodged” into people’s tap water. The EPA says it’s “reasonable to assume” that these disturbances could release lead laden scale into tap water, even if the service line is not made of lead.

At Lee Anne Walters’ home, the iron service line was unusually long; at least 150 feet. The EPA believes the scale on her home’s iron service line was ‘seeded’ with lead. The agency believes the water chemistry and a physical disturbance led to extremely high lead levels in Walters’ home. The report notes two relatively new asphalt patches on the road near her home.

The lack of corrosion control treatment in Flint is now well known. But this is the first time physical disturbance has been mentioned as a big risk.

“The jarring and vibration associated with excavation can dislodge the high lead-bearing scales from with the service line pipes,” the report says.

The report makes several recommendations to prevent the release of “large amounts of scale and sediment that could pose an immediate and acute health hazard to the residents.”

More data from intact pipes, lead and non-lead, need to be collected. Assessing the scales within these lines in Flint is “essential” to determine the risk to residents, the report says.

Develop training and public education on potential for “high lead release” from the scales. The report says people should know when utility work is going on and the “potential risk of increased lead levels due to these disturbances.”

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http://www.wnem.com/story/30450603/epas-report-adds-to-residents-concern#ixzz3qj3qs0zy

Posted: Nov 05, 2015 6:28 PM CST Updated: Nov 05, 2015 10:20 PM CST

Posted By Lauren Chapman - By Ronnie Duncan

VIDEO AND RA INTERVIEW

FLINT, MI (WNEM) - Arthur Woodson is one of many protesters that called for the Environmental Protection Agency to look into his city’s water crisis.

“I wasn't surprised – I am just glad that they brought it out to the open,” Woodson said.

In a detailed report released on Wednesday, the EPA laid out its findings on Flint's water problems.

It found increased lead levels in off Hemphill and Pengelly Roads near Bryant Street.

Susan Hedman is the EPA's administrator for this region.

"The U.S. Environmental Protection Agency is very concerned about lead levels in Flint," Hedman said.

Pete Hall only uses his water to wash his car as his grandson looks on. However, that's as close as he will let him get to the water.

“I'm more scared for the kids drinking it because kids when they get thirsty they going to drink the first thing available," Hall said.

Neighbors said they see no good news insight regarding the water woes of Flint, and they want to be tested.

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http://www.detroitnews.com/story/news/politics/2015/11/05/experts-water-health-dangers-subside-flint/75255704/

Jim Lynch, The Detroit News 11:32 p.m. EST November 5, 2015

Local health officials and the federal government are warning Flint residents that the danger from their tap water has not subsided even though the city has reconnected to Detroit's water system.

Dr. Mona Hanna-Attisha, the Hurley Medical Center pediatrician who uncovered lead exposure in city children two months ago, wants residents to continue their use of bottled water. This comes three weeks after Flint began receiving its drinking water from the Detroit Water and Sewerage Department.

For the previous 18 months, the city drew its water from the Flint River in an effort to save money. The high corrosive levels of the river water and a failure to use adequate corrosion controls led to unhealthy amounts of lead reaching residents.

In October, Flint and Detroit water officials announced Flint was back online with Detroit's water system, but cautioned it was not a quick fix.

"While the actual switch ... will happen immediately, it is expected that the thorough transition from Flint River water to Detroit water will be complete in approximately three weeks," DWSD said in a statement at the time. Along with the phosphates used by the Detroit system to control corrosion of lead in water delivery pipes, the city of Flint was expected to add measures for protection.

But Hanna-Attisha doesn't want residents taking any chances.

"Even though we've switched to DWSD, we have lost the sealed layer (protecting against) corrosion," she said. "And we've aged our infrastructure 30 years. Nobody knows when that seal will come back ...

"For our most vulnerable populations, pregnant women and infants, they should never be using tap water."

Officials with Michigan's Department of Environmental Quality agreed with Hanna-Attisha's assessment on corrosion measures, saying it has taken "up to several months" in other cities across the country. As a result, residents should try to find out exactly what is or isn't in their water.

"The only way for a homeowner to know for certain is to have their home tested," said DEQ spokesman Brad Wurfel. "DEQ and the city of Flint offer free testing for Flint residents, and we recommend concerned residents take advantage of it."

Greg Eno, a Detroit water system spokesman, said the utility simply provides the water complete with corrosion controls. Measuring how quickly the controls reach maximum effectiveness is done by the city of Flint, which owns the pipelines, he said.

On Wednesday, U.S. Environmental Protection Agency officials issued their own warnings in a report that highlighted the lead dangers inherent in the city's aging underground infrastructure.

"... (E)ven with corrosion control treatment in place in the future, physical disturbances will be capable of dislodging the high lead-bearing scale and sediment from non-lead pipes and well as lead pipes...," according to the report. Such disturbances include construction work and line replacement.

Flint residents have endured problems with their water since the spring of 2014, when the city's state-appointed emergency manager severed the relationship with the Detroit water system system. The hope was that the switch to the Flint River would help the financially troubled city save money until its new water system that draws water from Lake Huron — the Karegondi Water Authority — becomes operational in the second half of 2016.

Almost immediately after the switch, however, residents began reporting foul odors, strange tastes and cloudiness in the water coming from their taps. Local and state officials argued that testing showed the water was safe, but relented a month ago when Hanna-Attisha's deeper dissection of the data found high levels of lead in Flint children.

"Infants and children who drink water containing lead in excess of the action level could experience delays in their physical or mental development," according to the EPA. "Children could show slight deficits in attention span and learning abilities."

Water safety fears led residents such as Kelly Wilson to make tough choices. The 55-year-old regularly makes the trek from her subsidized apartment building to the Family Dollar store just a block to buy water.

Wilson said she spends between $40 and $50 each month, which is difficult since the widow's fixed income during the same period is $740.

She said she can't afford all of the water she needs, so she puts her fears aside long enough to take showers and brush her teeth with the city water.

"I wonder when I'm showering and it gets in my pores — what is this doing to me?" Wilson said.

The lack of faith in Flint's water isn't surprising, Hanna-Attisha said.

"This community has been lied to, and they have no trust, no trust in government," she added.

Critics hold the state responsible for the situation, since Gov. Rick Snyder's appointed emergency manager was in charge when the decision was made to begin drawing water from the river instead of the Detroit system's Lake Huron. Emails between state and federal officials have shown the DEQ was aware of potential problems stemming from a lack of corrosion control as early as February.

On Thursday, a pair of Democratic Flint-area state representatives called for an investigation into how DEQ handled water samples from one home in the city that showed exorbitant levels of lead early in the year. Reps. Phil Phelps of Flushing and Sheldon Neeley of Flint, responding to a Michigan Radio report, said they want to know if state officials threw out the results to keep the city from exceeding federal standards.

In October, DEQ Director Dan Wyant said staffers failed to apply the proper water quality protections as prescribed by the federal Lead and Copper Rule.

Also on Thursday, Senate Minority Leader Jim Ananich, D-Flint, renewed calls for legislative hearings on the state's failure to handle the situation properly. It would include a Senate subcommittee with subpoena powers.

"The Legislature has a unique role and responsibility in thoroughly examining what went wrong, what still needs to be fixed and how to ensure this sort of crisis never happens again," Ananich said.

Snyder appointed a five-person, bipartisan task force to review the actions of DEQ and other governmental agencies in Flint's switch to Flint River water.

State Auditor General Doug Ringle said last week his office will look into questions raised about the department's Office of Drinking Water and Municipal Assistance. Ringler's office already had an operational audit of the office underway before Ananich requested the state auditor find out what "accountability measures" are in place for DEQ staff who do not follow water testing data protocols.

In the meantime, Hanna-Attisha is recommending that those using Flint's tap water use tap filters that are being supplied for free by the city and state. The water also should be used cold, she said, since warmer temperatures cause a greater amount of leaching in lead pipes and plumbing.

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Detroit News Staff Writer Chad Livengood contributed.

By Mark Brush • 23 hours ago

<image002.jpg>Tap water in a Flint hospital on Oct. 16, 2015.

The Environmental Protection Agency says it's conducting a full review of what happened in Flint.

For more than a year, state officials assured city residents their water was safe. Those assurances turned out to be wrong.

And it wasn't until some residents got outside experts involved -- who not only found elevated lead levels in the drinking water, but that blood lead levels were also rising in Flint kids – that the state admitted there was a problem.

One of the more troubling charges made against the state is that the Michigan Department of Environmental Quality knowingly dropped lead test samples to avoid exceeding a federal drinking water standard.

Curt Guyette with the ACLU of Michigan wrote about this in September:

An investigation by the ACLU of Michigan -- conducted in conjunction with the study of Flint's water by researchers at Virginia Tech and the citizen group Coalition for Clean Water -- has found that the city, operating under the oversight of the Michigan Department of Environmental Quality, took multiple actions that skewed the outcome of its tests to produce favorable results.

State officials maintain they followed the testing rules for lead under the Safe Drinking Water Act.

But others say that's just not true.

Marc Edwards is an expert on water treatment at Virginia Tech University. He said the first and most important step did not occur in Flint.

The city is supposed to test homes known to either be serviced by lead service lines, or that have lead pipes or pipes with lead solder in them.

Large water systems are supposed to test the "worst-case-scenario" homes to see if they have a problem.

That's the point of the federally-mandated Lead and Copper Rule. Large water systems are supposed to test the “worst-case-scenario” homes to see if they have a problem.

“They did not do that, and that is the primary reason that they missed the worst of the lead problem,” says Edwards.

Edwards lays the blame squarely on the Michigan Department of Environmental Quality – not the city of Flint.

It was a state-appointed emergency manager who made the decision to switch the city’s source of drinking water to save money.

And it was the state’s responsibility to make sure that Flint was managing that switch correctly.

An altered report

“Even though they didn’t sample the highest risk homes in the samples collected by the city, they were still over the action level. So MDEQ, and I’ve never seen this in 25 years, took the initial report that the city gave and altered it,” says Edwards.

Edwards and the ACLU of Michigan obtained internal documents that showed the city originally submitted 71 drinking water samples to the state in July.

We did the math on those samples using the federal lead and copper rule. This original sample pool of 71 put the city over the federally mandated action level of 15 parts per billion of lead.

The city would have had to alert people that there was a lead problem, and they would have had to implement a corrosion control plan to keep the water from corroding the insides of pipes – a plan that was surprisingly absent in Flint. And they may have been required to start replacing lead service lines in the city.

This is all an expensive proposition in a city that made the switch to save money.

But that never happened.

<image006.jpg>

The two reports side by side. The "draft" report shows the original number of samples taken in Flint. The final report shows two samples were dropped.

Credit Flintwaterstudy.org

State officials came back and told the city to drop two samples.

Dropping those two samples put the city below the action level for lead. If the state had just dropped one high sample, Flint still would have been over the federal action level.

But dropping two samples put them below the action level.

To see exactly how this math works, check out this post.

The samples in question

Mike Glasgow is with the city of Flint. He's the guy in charge of collecting the water samples.

Glasgow remembers including samples taken at one home that showed extremely high lead levels. A sample of Lee Anne Walters' home turned up a result of 104 parts per billion – almost seven times the federally mandated limit.

"I don't know that I can give you a good enough answer to tell you why they decided to remove it from the report."

"They instructed me to take it off the report," says Glasgow. "I know she had taken some other samples and they had all the results too. I don't know that I can give you a good enough answer to tell you why they decided to remove it from the report."

The state denies any wrongdoing.

Dan Wyant is the director of the Michigan Department of Environmental Quality.

"What you're suggesting is somehow that we dropped two tests purposely, and I can say we've gone back and looked at this," says Wyant. "And so we've asked somebody in our laboratory. When the test comes in that doesn't meet the protocol definition, they drop that test by definition alone, and so the reality is that's how that sample got dropped."

State officials say a sample from one home was dropped because there was a water filter. Homes with water filters are excluded because they might give a low result.

But the test result that was dropped –– the result from Lee Anne Walters home -- was the highest test result in the 2015 sampling pool: 104 parts per billion.

The second sample that was dropped showed 20 parts per billion of lead. The state says that sample was dropped because federal rules state that a sample can't come from a business. It has to come from a home.

Spirit of the rule not followed?

So state officials say they made Flint drop test results because those samples didn't follow guidelines.

But the guidelines for all the samples weren't followed in the first place.

Federal rules say you must test the "worst-case-scenario" homes – the homes connected to pipes with lead in them. But the city didn't do that.

Elin Betanzo is a water quality expert with the Northeast-Midwest Institute. She worked in the EPA's drinking water office for eight years.

She says the rules say if a site is sampled – even if it's not technically supposed to be in the sampling pool – the results should still be used to determine if the water supply is safe.

"If they did find high lead levels, that's high lead levels in the water system. And the whole point of the rule is to be protective of public health for everyone consuming that water," Betanzo says. "So if one unplanned home is having high lead levels, that should factor into the compliance calculation."

Marc Edwards says there are a lot of ways water utilities can "game" the lead and copper rule to try to turn up favorable results. In 2009, his team put out a white paper showing what he calls a list of "cheating strategies" used to get around the spirit of the lead and copper rule.

There are a lot of people looking into what was done in Flint. Governor Snyder appointed a panel to conduct a review. And EPA officials say they hope to share the results of their review sometime next week.

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Subject: Fwd: Detroit Free Press column on Flint

News Headline: State knew risks before health crisis over lead in Flint's water |

Outlet Full Name: Detroit Free Press
News Text: State and local officials knew in 2013 that without proper treatment of water drawn from the Flint River, they risked subjecting the people of Flint to lead-contaminated drinking water.

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A report commissioned by Flint in 2011 evaluating the Flint River as a long-term source of drinking water, and delivered by the city to the MDEQ two years later, included that chemical - phosphate, often referred to as corrosion control - on a list of chemicals required to make river water safe to drink. Two years later, a Flint employee e-mailed the report to an MDEQ drinking water official, who passed it along to another state staffer, documents obtained by the Free Press via a Freedom of Information Act request show.

For water treatment professionals, the importance of phosphates is obvious: More corrosive water is more likely to degrade the interior of service lines, allowing dangerous substances from those pipes to enter the water. By forming a barrier inside service lines and plumbing pipes, phosphates limit the corrosive effect of water and stop lead from contaminating the water.

It's also common knowledge that river water, subject to constant changes of temperature and makeup, tends to be more corrosive than lake water - and is likely to require treatment with phosphates. Nor is it a mystery that an aging, broke city like Flint would have older homes with lead plumbing, or that its water distribution system would include lead service lines or welds.

And this is why the MDEQ's public response to the drinking water crisis in Flint - a spike in lead levels that has resulted in an increased number of lead-poisoned kids - doesn't add up.

New authority

Flint opted in 2013 to join a new regional water authority. While that system was under construction, Flint chose to pump water from the Flint River instead of continuing to purchase it from the Detroit Water and Sewerage Department.

Sixteen months after the switch, lead in the city's drinking water had spiked; the number of Flint kids with elevated blood-lead levels had increased. Lead poisoning is irreversible and causes developmental and behavioral problems.

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MDEQ signed off on the plan, Croft said, and after Flint began pumping river water in April 2014, embarked on a cycle of water testing: two six-month rounds that the state says it believed complied with EPA's requirements. As for Flint, Croft said, the city believed it was in compliance with state and federal drinking water rules.

Why did neither insist on corrosion control?

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When those test results started rolling in, there were more red flags. During the first six-month test span, July to December 2014, results showed 6 parts of lead per billion in Flint's water. By the end of June 2015, the amount of lead in Flint water had almost doubled, to 11 parts per billion. A draft of a memo written by an EPA drinking water specialist, leaked to an investigative reporter for the American Civil Liberties Union in July, identified multiple problems with the city and state's water testing.

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Warnings unheeded

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It's incomprehensible.

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Just $60 a day.

Contact Nancy Kaffer: nkaffer@freepress.com

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From: Peterson, John
Sent: Mon 11/9/2015 4:50:16 PM
Subject: Flint Water Clips Nov. 9, 2015

FLINT DRINKING WATER CLIPS

US. EPA Region 5 – as prepared by john peterson *(ORA/OEC/PA)* on nov 9, 2015.

State knew risks before health crisis over lead in Flint's water (detroit free press)

Recall petition filed to oust Gov. Snyder (michigan radio)

Full investigation needed at every level in Flint water crisis (Mlive)

Task force appointed to investigate Flint water emergency expected finish investigation next year (WXYZ ABC Channel 7 Detroit) http://www.lansingstatejournal.com/story/news/local/2015/11/08/year-water-change-state-knew-risks-flint/75378034/

By Nancy Kaffer, Detroit Free Press Columnist, Nov. 8, 2015

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http://michiganradio.org/post/recall-petition-filed-oust-gov-snyder#stream/0

By Steve Carmody – Nov. 9, 2015

A one-man effort to recall Governor Rick Snyder from office faces a big hurdle this week.

Angelo Brown says Governor Snyder deserves to be recalled because of the role his administration played in the Flint drinking water crisis.

Brown's recall petition accuses the governor of being "culpable" in the decisions that lead to the use of corrosive Flint River water as the city's drinking water source.

The Detroit pastor says the governor doesn't "accept high levels of incompetence himself".

"And I think we got to hold him to the same standard," Brown said last week.

Brown is running what amounts to a one-man campaign.

If the Board of Canvassers approves his recall petition language, he'll have to collect nearly 800,000 valid signatures to earn a place on the ballot next year.

The governor's spokesman would only say "recall attempts are a part of the democratic process."

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http://www.mlive.com/opinion/flint/index.ssf/2015/11/full_investigation_needed_at_e.html

Mlive/Flint Journal Opinion by U.S. Rep. Dan Kildee, Nov. 6, 2015

It's clear that the Flint water crisis was a failure of government. Residents are rightfully angry, and I'm angry over the lack of immediate action to address unsafe lead levels in the city's water.

Despite independent research showing elevated lead levels by experts Dr. Marc Edwards and Dr. Mona Hanna-Attisha, the Michigan Department of Environmental Quality (MDEQ) and Environmental Protection Agency (EPA) stalled for weeks, saying there was no cause for concern and denying there was even a problem.

Now, state officials have admitted that drinking water laws were not followed. Yet inaction by officials has already caused considerable harm. The people of Flint are victims of this failure of government, and there needs to be accountability.

That's why I've called for a thorough investigation into the water problems in Flint. And that's why I continue to stress that both the MDEQ and EPA act in an urgent manner to address this public health crisis. A complete review of actions at every level will result in answers and transparency, and hopefully it will begin to restore public confidence for

Flint residents. It will also ensure that we take steps to make sure this never happens again, in Flint or in other cities across the country.

Residents deserve to know why for months the state of Michigan failed to follow federal safe drinking water laws. They also deserve to know why corrosion control treatments were not in place when the city's water supply switched to the Flint River. I continue to push for full transparency and answers to these questions and more.

Additionally, I continue to advocate for long-term solutions to improve Flint's water infrastructure. Lead-clearing filters, bottled water and even reconnecting to the Detroit water system are critical steps, but they won't solve the problem. Flint River water has caused extensive damage to Flint's aged water infrastructure, and major investments are needed to make repairs and ensure water quality going forward.

For almost a year, I have been advocating for the state of Michigan and EPA to forgive Flint's federal loans through the Safe Drinking Water State Revolving Fund in order to free up money to make it possible for Flint to make system improvements – including replacement of lead service lines. Both the state and federal government have to take responsibility and act.

Flint is a financially distressed city that simply doesn't have the money to pay for water improvements made necessary by the state's very costly and ill-thought out decision. It was under a state-appointed emergency manager that the decision was made to switch the drinking water source for the city, from the Detroit Water Authority to the Flint River.

Simply put, Flint should not have to foot the bill for the state and EPA's mistakes.

To exacerbate the crisis, the state of Michigan sadly has cut tens of millions of dollars in revenue sharing in recent years. This money could have helped to make critical infrastructure improvements in the community.

Now as a result, Flint – and a whole subset of older, industrial American cities – stand to be left behind in the new economy if we don't make critical investments.

Access to safe drinking water is a fundamental right. Having a water system that delivers clean drinking water to our schools and children is not up for debate.

Under the law, it is the responsibility of the state and federal government to ensure safe drinking water. And the very agencies of government charged with protecting public health failed to do that.

The state and federal government both need to act to fix the problems created by the failed policies that led to this crisis. Neither has an excuse not to.

U.S. Rep. Dan Kildee, D-Flint Twp., is a Flint native and represents Michigan's 5th District, which includes Flint and Genesee County, in Congress. You can find him on Facebook and Twitter.

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http://www.wxyz.com/news/task-force-appointed-to-investigate-flint-water-emergency-expected-finish-investigation-next-year

By Jim Kiertzner, Nov. 6, 2015

(Flint – WXYZ) -- The evidence is overwhelming - state and federal officials failed to protect something we all take for granted: tap water.

People in Flint have been drinking water that tests have shown is laced with lead snd detrimental health effects are already happening.

It could have been prevented.

It was caused by money, or a lack of it - Detroit had raised its rates.

On April 30, 2014 Flint disconnected from the Detroit water system as a temporary move until a new water system being built from Lake Huron is done in 2016.

The final decision to disconnect was made by then Emergency Manager Darnell Earley who was appointed by Governor Rick Snyder. Earley is currently running Detroit Public Schools as EM.

The back up plan was to use Flint River water and a water treatment plant that had not been used on a regular basis for some 50 years.

It turns out lead was getting into the water because of improper treatment of the river water, which is more corrosive and causes lead to leach from pipes and solder in pipes.

The lead was not discovered by government tests. It was discovered by families, voluntary researchers from Virginia Tech and Hurley Medical Center in Flint.

Governor Rick Snyder finally came to Flint last month with a financial plan to reconnect Flint to Detroit water. But the damage has been done.

People want investigations, accountability and action.

Dr. Lawrence Reynolds is a Pediatrician in Flint and is one of five members of the task force appointed by Snyder.

Dr. Reynolds tells 7 Investigator Jim Kiertzner that he drinks Flint water and he treats flint children. He will see to it that the task force gets the job done with answers, action and even remediation.

The task force meets weekly sometimes in public, sometimes in private. Its work is expected to be done early next year. We will continue to follow it.

There are also more calls for other investigations from Flint area state lawmakers. Republicans control both chambers in the Michigan Legislature and it is not clear of those investigations will happen.

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Looping in Monica Lee and Nancy Grantham (please add to distribution list).

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Subject: Flint Water Clips Nov. 9, 2015

FLINT DRINKING WATER CLIPS

US. EPA Region 5 – as prepared by john peterson *(ORA/OEC/PA)* on nov 9, 2015.

State knew risks before health crisis over lead in Flint's water (detroit free press)

Recall petition filed to oust Gov. Snyder (michigan radio)

Full investigation needed at every level in Flint water crisis (Mlive)

Task force appointed to investigate Flint water emergency expected finish investigation next year (WXYZ ABC Channel 7 Detroit)

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http://www.lansingstatejournal.com/story/news/local/2015/11/08/year-water-change-state-knew-risks-flint/75378034/

By Nancy Kaffer, Detroit Free Press Columnist, Nov. 8, 2015

State and local officials knew in 2013 that without proper treatment of water drawn from the Flint River, they risked subjecting the people of Flint to lead-contaminated drinking water.

But the next year, the Michigan Department of Environmental Quality OK'd Flint's plan to pump water from the river, and into residents' homes, without adding an important chemical that would prevent contamination from lead in old pipes.

A report commissioned by Flint in 2011 evaluating the Flint River as a long-term source of drinking water, and delivered by the city to the MDEQ two years later, included that chemical - phosphate, often referred to as corrosion control - on a list of chemicals required to make river water safe to drink. Two years later, a Flint employee e-mailed the report to an MDEQ drinking water official, who passed it along to another state staffer, documents obtained by the Free Press via a Freedom of Information Act request show.

For water treatment professionals, the importance of phosphates is obvious: More corrosive water is more likely to degrade the interior of service lines, allowing dangerous substances from those pipes to enter the water. By forming a barrier inside service lines and plumbing pipes, phosphates limit the corrosive effect of water and stop lead from contaminating the water.

It's also common knowledge that river water, subject to constant changes of temperature and makeup, tends to be more corrosive than lake water - and is likely to require treatment with phosphates. Nor is it a mystery that an aging, broke city like Flint would have older homes with lead plumbing, or that its water distribution system would include lead service lines or welds.

And this is why the MDEQ's public response to the drinking water crisis in Flint - a spike in lead levels that has resulted in an increased number of lead-poisoned kids - doesn't add up.

New authority

Flint opted in 2013 to join a new regional water authority. While that system was under construction, Flint chose to pump water from the Flint River instead of continuing to purchase it from the Detroit Water and Sewerage Department.

Sixteen months after the switch, lead in the city's drinking water had spiked; the number of Flint kids with elevated blood-lead levels had increased. Lead poisoning is irreversible and causes developmental and behavioral problems.

MDEQ chief Dan Wyant has said that in evaluating Flint's water treatment plan, the agency mistakenly applied the wrong federal guideline; an MDEQ spokesman said that the Environmental Protection Agency's standard is ambiguously worded.

But then there's that report. Why didn't Flint - or the state - pay attention?

Ask, and there are no good answers.

"Flint commissioned the report you mentioned," MDEQ spokesman Brad Wurfel said. "If they ignored the recommendations in an appendix of the report they commissioned, they can probably best explain why."

A spokesman for Flint Mayor Dayne Walling, who lost his seat in last week's election, directed inquiries to the city's director of public works, Howard Croft.

"As public works director" - whose responsibilities include oversight of water treatment and a host of other services - "I cannot specifically tell you why phosphate was not approached," Croft said. "It was brought up by our engineering firm, they did ask those questions. Our state licensing director brought up those questions. ... That's pretty much the discussion that's out there."

MDEQ signed off on the plan, Croft said, and after Flint began pumping river water in April 2014, embarked on a cycle of water testing: two six-month rounds that the state says it believed complied with EPA's requirements. As for Flint, Croft said, the city believed it was in compliance with state and federal drinking water rules.

Why did neither insist on corrosion control?

"I think it's a fair question," Croft said.

When those test results started rolling in, there were more red flags. During the first six-month test span, July to December 2014, results showed 6 parts of lead per billion in Flint's water. By the end of June 2015, the amount of lead in Flint water had almost doubled, to 11 parts per billion. A draft of a memo written by an EPA drinking water specialist, leaked to an investigative reporter for the American Civil Liberties Union in July, identified multiple problems with the city and state's water testing.

Despite all of that, MDEQ's Wurfel insisted that Flint residents should relax, that the city's drinking water was safe.

By the time MDEQ acknowledged that Flint's water supply was compromised, it was September. The city never started corrosion control. It rejoined DWSD last month.

Warnings unheeded

The report didn't alter the outcome in Flint. But it doesn't even seem to have caused drinking water managers at the city or the state to question the city's water treatment plan, to wonder whether perhaps river water should be treated for corrosion control.

And that, perhaps, is the most shocking part of Flint's water debacle. None of these warnings - not a report listing corrosion control as a requirement for using Flint River water, not test results showing rising lead levels, not an EPA memo calling the city's findings into question - moved the state to action.

Not even a local pediatrician's analysis of blood-lead level screenings for hundreds of Flint kids - finding that an increasing number had elevated blood-lead levels, a reversal of a decades-long trend - caused a sense of urgency among state regulators. For more than a week, spokespeople for Gov. Rick Snyder and MDEQ downplayed and discredited the results.

It's incomprehensible.

MDEQ is charged with overseeing compliance with environmental regulations across the state, with ensuring that companies and cities follow local, state and federal guidelines.

In Flint, there was another layer of state oversight - that city spent the last two years under the oversight of a state-appointed emergency manager, brought in to resolve the city's budget deficit. An emergency manager, with the approval of then-state Treasurer Andy Dillon, OK'd Flint's decision to join the Karegnondi Water Authority, the new regional system. And an emergency manager approved Flint's decision to use river water.

Finding out what happened in Flint will be complicated. Snyder has appointed a task force to investigate. U.S. Rep. Dan Kildee and state Senate Minority Leader Jim Ananich, both Flint Democrats, have asked the EPA to investigate. Ananich is calling for a Senate committee to hold public hearings.

There's one more thing the city, or MDEQ, might have learned from that 2011 report about Flint River water: Phosphates are cheap. To prevent lead from contaminating Flint's water, to protect children from the lifelong damage caused by lead poisoning, wouldn't have cost much.

Just $60 a day.

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http://michiganradio.org/post/recall-petition-filed-oust-gov-snyder#stream/0

By Steve Carmody – Nov. 9, 2015

A one-man effort to recall Governor Rick Snyder from office faces a big hurdle this week.

Angelo Brown says Governor Snyder deserves to be recalled because of the role his administration played in the Flint drinking water crisis.

Brown’s recall petition accuses the governor of being “culpable” in the decisions that lead to the use of corrosive Flint River water as the city’s drinking water source.

The Detroit pastor says the governor doesn’t “accept high levels of incompetence himself”.

“And I think we got to hold him to the same standard,” Brown said last week.

Brown is running what amounts to a one-man campaign.

If the Board of Canvassers approves his recall petition language, he'll have to collect nearly 800,000 valid signatures to earn a place on the ballot next year.

The governor's spokesman would only say "recall attempts are a part of the democratic process."

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http://www.mlive.com/opinion/flint/index.ssf/2015/11/full_investigation_needed_at_e.html

Mlive/Flint Journal Opinion by U.S. Rep. Dan Kildee, Nov. 6, 2015

It's clear that the Flint water crisis was a failure of government. Residents are rightfully angry, and I'm angry over the lack of immediate action to address unsafe lead levels in the city's water.

Despite independent research showing elevated lead levels by experts Dr. Marc Edwards and Dr. Mona Hanna-Attisha, the Michigan Department of Environmental Quality (MDEQ) and Environmental Protection Agency (EPA) stalled for weeks, saying there was no cause for concern and denying there was even a problem.

Now, state officials have admitted that drinking water laws were not followed. Yet inaction by officials has already caused considerable harm. The people of Flint are victims of this failure of government, and there needs to be accountability.

That's why I've called for a thorough investigation into the water problems in Flint. And that's why I continue to stress that both the MDEQ and EPA act in an urgent manner to address this public health crisis. A complete review of actions at every level will result in answers and transparency, and hopefully it will begin to restore public confidence for Flint residents. It will also ensure that we take steps to make sure this never happens again, in Flint or in other cities across the country.

Residents deserve to know why for months the state of Michigan failed to follow federal safe drinking water laws. They also deserve to know why corrosion control treatments were not in place when the city's water supply switched to the Flint River. I continue to push for full transparency and answers to these questions and more.

Additionally, I continue to advocate for long-term solutions to improve Flint's water infrastructure. Lead-clearing filters, bottled water and even reconnecting to the Detroit water system are critical steps, but they won't solve the problem. Flint River water has caused extensive damage to Flint's aged water infrastructure, and major investments are needed to make repairs and ensure water quality going forward.

For almost a year, I have been advocating for the state of Michigan and EPA to forgive Flint's federal loans through the Safe Drinking Water State Revolving Fund in order to free up money to make it possible for Flint to make system improvements – including replacement of lead service lines. Both the state and federal government have to take responsibility and act.

Flint is a financially distressed city that simply doesn't have the money to pay for water improvements made necessary by the state's very costly and ill-thought out decision. It was under a state-appointed emergency manager that the decision was made to switch the drinking water source for the city, from the Detroit Water Authority to the Flint River.

Simply put, Flint should not have to foot the bill for the state and EPA's mistakes.

To exacerbate the crisis, the state of Michigan sadly has cut tens of millions of dollars in revenue sharing in recent years. This money could have helped to make critical infrastructure improvements in the community.

Now as a result, Flint – and a whole subset of older, industrial American cities – stand to be left behind in the new economy if we don't make critical investments.

Access to safe drinking water is a fundamental right. Having a water system that delivers clean drinking water to our schools and children is not up for debate.

Under the law, it is the responsibility of the state and federal government to ensure safe drinking water. And the very agencies of government charged with protecting public health failed to do that.

The state and federal government both need to act to fix the problems created by the failed policies that led to this crisis. Neither has an excuse not to.

U.S. Rep. Dan Kildee, D-Flint Twp., is a Flint native and represents Michigan's 5th District, which includes Flint and Genesee County, in Congress. You can find him on Facebook and Twitter.

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http://www.wxyz.com/news/task-force-appointed-to-investigate-flint-water-emergency-expected-finish-investigation-next-year

By Jim Kiertzner, Nov. 6, 2015

(Flint – WXYZ) -- The evidence is overwhelming - state and federal officials failed to protect something we all take for granted: tap water.

People in Flint have been drinking water that tests have shown is laced with lead snd detrimental health effects are already happening.

It could have been prevented.

It was caused by money, or a lack of it - Detroit had raised its rates.

On April 30, 2014 Flint disconnected from the Detroit water system as a temporary move until a new water system being built from Lake Huron is done in 2016.

The final decision to disconnect was made by then Emergency Manager Darnell Earley who was appointed by Governor Rick Snyder. Earley is currently running Detroit Public Schools as EM.

The back up plan was to use Flint River water and a water treatment plant that had not been used on a regular basis for some 50 years.

It turns out lead was getting into the water because of improper treatment of the river water, which is more corrosive and causes lead to leach from pipes and solder in pipes.

The lead was not discovered by government tests. It was discovered by families, voluntary researchers from Virginia Tech and Hurley Medical Center in Flint.

Governor Rick Snyder finally came to Flint last month with a financial plan to reconnect Flint to Detroit water. But the damage has been done.

People want investigations, accountability and action.

Dr. Lawrence Reynolds is a Pediatrician in Flint and is one of five members of the task force appointed by Snyder.

Dr. Reynolds tells 7 Investigator Jim Kiertzner that he drinks Flint water and he treats flint children. He will see to it that the task force gets the job done with answers, action and even remediation.

The task force meets weekly sometimes in public, sometimes in private. Its work is expected to be done early next year. We will continue to follow it.

There are also more calls for other investigations from Flint area state lawmakers. Republicans control both chambers in the Michigan Legislature and it is not clear of those investigations will happen.

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Subject: Flint Water Clips Nov. 10, 2015

FLINT DRINKING WATER CLIPS

US. EPA Region 5 – as prepared by Peter Cassell *(ORA/OEC/PA)* On Nov. 10

•□□□□□□□□ A top EPA official is meeting with a top critic of its handling of Flint's water woes (Michigan Radio)

•□□□□□□□□ Report: State Officials Aware of Problem with Flint River Water (WDET)

•□□□□□□□□ State urges water tests at Flint homes, businesses, schools (AP)

•□□□□□□□□ Source of high lead levels in drinking water at one Flint school identified (Michigan Radio)

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http://michiganradio.org/post/top-epa-official-meeting-top-critic-its-handling-flints-water-woes

By Steve Carmody • 16 hours ago

A meeting this week may help produce an update into a possible federal probe of Flint's water problems.

Rep. Dan Kildee (D-FLint)

Credit Steve Carmody / Michigan Radio

Congressman Dan Kildee says he plans to meet this week with Regional EPA director Susan Hedman to discuss the status of an investigation into Flint's drinking water problems.

Kildee says the investigation has to look beyond just assessing blame.

"So that whoever's responsible for the decisions or neglect that led to Flint water being laced with lead will have to step up and be responsible for correcting whatever short or long term implications came with those decisions," says Kildee.

Documents obtained by Michigan Radio have raised questions about testing that failed to show rising lead levels in Flint's drinking water, after the city started using the Flint River as its tap water source.

Tests by Virginia Tech researchers suggest the corrosive nature of the Flint River has done significant damage to pipes in the city, both in people's homes and the city's transmission lines. It's estimated the cost of repairing and replacing damaged pipes can range from the tens to the hundreds of millions of dollars.

After 18 months drawing water from the Flint River, the city returned to the Detroit Water and Sewerage Department, after receiving $6 million dollars from the state government and $4 million dollars from a local foundation.

Next year, Flint will switch water sources again. The new Karegnondi water pipeline is expected to start flowing water from Lake Huron to Flint next summer.

Meanwhile, Rep. Dan Kildee's not entirely confident the EPA investigation will be thorough enough.

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http://wdet.org/posts/2015/11/09/81895-report-state-officials-aware-of-problem-with-flint-river-water/

Nov. 9, 2015

Documents reportedly reveal state environmental officials knew untreated Flint River water could harm residents.

State officials reportedly knew of problems with Flint's water supply long before the city switched to a new system that may have contaminated those who used it with lead poisoning.

A study commissioned by Flint and delivered to state environmental officials in 2013 reportedly revealed that water drawn from the city's river could put residents at risk unless it was first treated with a certain chemical.

The Detroit Free Press reports that documents show the Michigan Department of Environmental Quality approved the city's plan to begin using water from the Flint River anyway without it being treated with the necessary chemical.

Flint recently rejoined Detroit's water system after researchers found some children drinking Flint's water had double, and sometimes triple, the typical amount of lead in their bloodstream.

Governor Rick Snyder has created a task force to examine how the situation developed while members of both Congress and the state legislature are requesting that the Environmental Protection Agency investigate the matter.

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http://www.washingtontimes.com/news/2015/nov/10/state-urges-water-tests-at-flint-homes-businesses-/

Flint Mayor Karen Weaver smiles as she hugs a supporter after being sworn into office Monday, Nov. 9, 2015, at City Hall in Flint, Mich. Voters have ousted mayor Dayne Walling amid a fallout over the city's drinking water problems. ... more >

By - Associated Press - Tuesday, November 10, 2015

FLINT, Mich. (AP) - The results of water tests at several hundred buildings in Flint indicate that drinking water at all homes, businesses and schools needs to be tested for possible lead contamination, state officials said.

The Michigan Department of Environmental Quality said tests from nearly 400 homes and businesses as well as comprehensive results from Freeman Elementary School indicate problems with lead are localized to individual buildings or even individual faucets.

"The results from this data underline the need for water testing at all homes, businesses, schools and other buildings in Flint," George Krisztian, the DEQ's Flint

Action Plan Coordinator, said in a statement Monday. “We want to see all families in Flint take advantage of free water testing from the state.”

Flint switched from Detroit’s water system last year to Flint River water in a cost-cutting move while under state emergency financial management. The Flint River was supposed to be an interim source until the city could join a new system getting water from Lake Huron.

But residents complained about the taste, smell and appearance of the water. Officials maintained the water met safety standards, but children were found to have elevated levels of lead in their blood and it was determined that corrosive river water was drawing lead from aging pipes.

Flint has since switched back to water from Detroit’s system. Last week, voters ousted Flint’s mayor amid fallout over the city’s drinking water problems. Newcomer Karen Weaver beat incumbent Dayne Walling, who led the city during the public health emergency and blamed state and federal agencies for the city’s water problems.

Weaver was sworn in Monday, saying her election showed residents are “sick and tired of poison water” and she renewed her call on the federal government to declare the city a federal disaster area.

At Freeman Elementary, 31 faucets were tested. There was no lead exposure from 22 outlets, but nine came back with initially high results. When the faucets and fountains were operated for several minutes, lead levels fell significantly, in some cases to non-detectable levels, the state said.

The DEQ is suggesting that the faucets be flushed before use but on the long-term need to be replaced.

Meanwhile, parents in Flint can get their children tested for lead during an education program hosted by the school district Thursday at Brownell STEM Academy, The Flint Journal reported.

http://michiganradio.org/post/source-high-lead-levels-drinking-water-one-flint-school-identified

By Steve Carmody • 16 hours ago

New tests suggest high lead levels in the drinking water at one Flint school may have a simple and inexpensive solution. FREEMAN elementary in Flint, Michigan

Initial test results on drinking water samples taken at Freeman Elementary showed high levels of lead in the water: 101 parts per billion or roughly six times the federal action level for lead in tap water.

Follow up tests were conducted last month on water at four Flint schools that tested at or above the federal action level.

The tests are now in for Freeman elementary.

The MDEQ took samples from 31 water sources at the school. They detected higher than 15 ppb from 9 of the fixtures. Follow up tests of the fixtures and the school's plumbing found the problem was not in the pipes, but the faucets.

"The issues that we found were definitely fixture related," says George Krisztian, the Flint Action Plan Coordinator for the Michigan Department of Environmental Quality.

The Flint Community School district now plans on removing the suspect fixtures.

"We will start work as soon as possible to replace faucets, aerators and other related components where high lead levels were detected," Says Superintendent Bilal Tawwab.

When tests showed elevated levels of lead in Flint drinking water and elevated blood lead levels in school age children in Flint, the school district shut off many drinking fountains and other sources of drinking water. Researchers blame the rising lead levels on the corrosive water from the Flint River, which the city started using as its drinking water source in 2014. The city switched back to the Detroit Water and Sewerage Department after numerous problems with the Flint River water.

The school district has more than 300,000 thousand bottles of drinking water for students and teachers.

The state is offering additional testing at all Flint schools, including charter, private and parochial schools.

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From: Cassell, Peter
Sent: Tue 11/10/2015 10:14:14 PM
Subject: Flint Water Clips Nov. 10, 2015 PM UPDATE

FLINT DRINKING WATER CLIPS

US. EPA Region 5 – as prepared by Peter Cassell *(ORA/OEC/PA)* On Nov. 10 PM UPDATE

- US regulators will audit Michigan's drinking water program (AP)

- EPA to audit Michigan drinking water program following Flint lead crisis (Flint Journal)

- U.S. EPA will audit Michigan safe drinking water program, in wake of Flint's problems (Michigan Radio)

- Senator Stabenow Statement on EPA Announcement to Audit Michigan's Drinking Water Program (Sen. Stabenow Release)

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http://www.wnem.com/story/30482668/us-regulators-will-audit-michigans-drinking-water-program#ixzz3r83XokM4

Posted: Nov 10, 2015 11:40 AM CST Updated: Nov 10, 2015 11:40 AM CST

By Carrie Widenmier

FLINT, MI (AP) - The federal government says it will conduct an audit of how the state of Michigan oversees public water supplies.

The audit announced Tuesday is in response to the water crisis in Flint. The city switched water sources in 2014, and the corrosive water released lead from old pipes.

Gov. Rick Snyder's Department of Environmental Quality acknowledges that drinking water rules were not followed when Flint made the switch to the Flint River. Flint now gets water from the Detroit system.

The EPA says it will investigate how Michigan enforces rules on lead, copper and nitrates and will identify ways to possibly strengthen state oversight.

The audit will take several months and will be released to the public.

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http://www.mlive.com/news/flint/index.ssf/2015/11/epa_says_it_will_audit_michiga.html

By Ron Fonger | rfonger1@mlive.com
on November 10, 2015 at 1:43 PM

FLINT, MI -- In the wake of a public health crisis over high lead levels in water in some Flint homes, the U.S. Environmental Protection Agency has announced it will audit the state's drinking water program.

A Nov. 10 news release from the EPA says it will examine the Michigan Department of Environmental Quality's "implementation of the Safe Drinking Water Act and related rules on lead and copper, total coliform, nitrates and ground water."

The audit comes after requests for a federal investigation of Flint's water crisis by U.S. Rep. Dan Kildee, D-Flint, and state Senate Minority Leader Jim Ananich, D-Flint.

Brad Wurfel, a spokesman for the DEQ, issued a statement today, pledging the agency's cooperation.

"EPA is conducting this audit to ensure that MDEQ maintains reliable drinking water supplies that meet all of the requirements of the Safe Drinking Water Act," EPA Region 5 Administrator Susan Hedman said in a written statement.

"This comprehensive audit will provide Flint residents and the people of Michigan with more information about MDEQ oversight of public water supplies and will identify actions that may be needed to strengthen the Michigan drinking water program."

The EPA news release says employees of the agency will go to MDEQ offices to review state files on public water system compliance with the SDWA and will review the state's oversight of public water systems.

"The audit will consist of a full programmatic review that supplements the reviews of the Michigan drinking water program that EPA conducts each year," the news release says.

The audit is expected to take several months to complete and a report will be issued when it is complete.

In separate letters to Gina McCarthy, administrator of the EPA, last month, Kildee and Ananich asked for the federal review of the MDEQ's oversight of water treatment in Flint.

A public health emergency was issued here after researchers from Virginia Tech university and a Hurley Medical Center doctor discovered high lead levels in Flint's water supply and rising blood lead levels in children since the city switched its water source from Lake Huron to the Flint River in April 2014.

DEQ Director Dan Wyant has said state regulators mistakenly allowed the city to distribute river water without requiring that it be treated to make it less corrosive.

Wurfel said in an email to The Flint Journal-MLive that the DEQ "welcomes this announcement from EPA, and we've already signaled to them that they can count on our full cooperation and transparency."

"We've appreciated the federal government's support on the situation in Flint --including its announcement last week that the Lead and Copper rule speaks ambiguously on the corrosion control issue," Wurfel's statement says.

"Nobody wants to see a situation like Flint, and we look forward in working with our federal partners going forward because we share the goal of making sure the Flint situation is not repeated – in Michigan, or anywhere else."

Ananich said the federal investigation would not have been necessary if an independent commission with subpoena power had been appointed by Gov. Rick Snyder.

Still, the senator said he's interested in the federal review.

"I want to see (EPA's findings)," he said. "I'm hoping it's thorough and of value."

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http://michiganradio.org/post/us-epa-will-audit-michigan-safe-drinking-water-program-wake-flints-problems

By Steve Carmody • 2 hours ago

A federal agency will review how the state of Michigan monitors local drinking water.

“What happened in Flint shouldn’t have happened," says EPA Region 5 administrator Susan Hedman, who says as a result, "There is a lack of public confidence in the drinking water program here in Michigan.”

Regional EPA administrator Susan Hedman says her agency will conduct an audit of the Michigan Department of Environmental Quality’s drinking water program.

“EPA is conducting this audit to ensure that MDEQ maintains reliable drinking water supplies that meet all of the requirements of the Safe Drinking Water Act,” Hedman said. “This comprehensive audit will provide Flint residents and the people of Michigan with more information about MDEQ oversight of public water supplies and will identify actions that may be needed to strengthen the Michigan drinking water program.”

MDEQ has been criticized for failing to detect problems with Flint’s drinking water after the city switched to its namesake river last year.

During the 18 months that the city took its tap water from the Flint River, residents complained about the smell, taste and appearance of their drinking water. There were also E coli outbreaks and higher than acceptable levels of chemicals used to treat the water, as well as their by-products.

Researchers also claim the corrosiveness of the river water damaged pipes containing lead, in people’s homes and in city transmission lines. The result was increasing levels of lead in the city’s drinking water.

The MDEQ apparently failed to insure the city used proper corrosion controls to lessen the effect of the river water.

“What happened in Flint shouldn’t have happened," says Hedman, who says as a result, "There is a lack of public confidence in the drinking water program here in Michigan.”

A spokesman says the agency welcomes the EPA review of its drinking water program, adding EPA “can count on our full cooperation and transparency.”

The written statement continues:

“We’ve appreciated the federal government’s support on the situation in Flint – including its announcement last week that the Lead and Copper rule speaks ambiguously on the corrosion control issue. Nobody wants to see a situation like Flint, and we look forward in working with our federal partners going forward because we share the goal of making sure the Flint situation is not repeated – in Michigan, or anywhere else."

MDEQ officials say tests from nearly 400 homes and businesses in Flint indicate problems with lead are localized to individual buildings or even individual faucets.

For Immediate Release
november 11, 2015

WASHINGTON, D.C. – U.S. Senator Debbie Stabenow today issued the following statement regarding the Environmental Protection Agency’s decision to audit the Michigan Department of Environmental Quality’s drinking water program:

“It is clear that the State of Michigan made multiple mistakes and misjudgments, which have seriously harmed the health of the people of Flint. The EPA is taking critical steps today to get to the bottom of this outrageous situation. Everything must be done to make sure families and communities in Flint have safe drinking water.”

###

To: Kaplan, Robert[kaplan.robert@epa.gov]; Hyde, Tinka[hyde.tinka@epa.gov]; Kelley, Jeff[kelley.jeff@epa.gov]; Fortin, Denise[Fortin.Denise@epa.gov]; Rowan, Anne[rowan.anne@epa.gov]
From: Hedman, Susan
Sent: Thur 11/12/2015 3:34:07 AM
Subject: Fwd: Briefing for Rep Kildee and Rep Lawrence

Sent from my iPhone

Begin forwarded message:

> **From:** "Purchia, Liz" <Purchia.Liz@epa.gov>
> **Date:** November 11, 2015 at 8:38:21 PM CST
> **To:** "Distefano, Nichole" <DiStefano.Nichole@epa.gov>
> **Cc:** "Hedman, Susan" <hedman.susan@epa.gov>, "Meiburg, Stan" <Meiburg.Stan@epa.gov>, "Beauvais, Joel" <Beauvais.Joel@epa.gov>, "Grevatt, Peter" <Grevatt.Peter@epa.gov>, "Harrison, Melissa" <Harrison.Melissa@epa.gov>, "Grantham, Nancy" <Grantham.Nancy@epa.gov>
> **Subject: Re: Briefing for Rep Kildee and Rep Lawrence**
>
> **Congressmen Kildee says he's pleased the EPA will review Michigan's drinking water program**
>
> By STATESIDE STAFF • 28 MINUTES AGO
>
> **SHARE**Twitter Facebook Google+ Email
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> *Protesters in Flint.*
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> LINDSEY SMITH MICHIGAN RADIO
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> http://michiganradio.org/post/congressmen-kildee-says-hes-pleased-epa-will-review-michigans-drinking-water-program#stream/0
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> The U.S. Environmental Protection Agency will be watching over the state of Michigan's shoulder to make sure our drinking water is safe.
>
> The EPA will audit the state's drinking water safety program after the state Department of Environmental Quality admitted it failed to use the correct protocols when it approved the switch to the Flint River as the primary source of drinking water for Flint.
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> That mistake led to dangerously high lead levels in that city's drinking water.

Flint's Democratic Congressman Dan Kildee joined us today to discuss the EPA's audit.

Listen

Listening...

10:24

Congressman Dan Kildee (D-MI) shares his thoughts on the Flint water crisis.

Kildee says it appears the EPA's audit of the MDEQ is the federal review that has the teeth that he's been looking for.

"It seems that there is incompetence, or mismanagement, or a lack of attention within the Department of Environmental Quality. They sort of have acknowledged that themselves in this case. That kind of failure has consequences. And they could be significant health consequences," says Kildee.

Kildee says he's not concerned about the EPA being complicit in the failings that occurred in Flint, saying the federal agency pushed the state for answers on whether or not a corrosion control program had been implemented.

The state initially replied that they did have a corrosion control program in place. That later turned out to not be true.

Kildee says the larger lesson in this is that people can't take a "bean counter" approach to managing cities. He says politicians who equate running a business with running a government are missing the point.

"You can bankrupt a business. You can disassemble a business. You can sell off the parts and put it away. Cities are human organisms. You can't just simply treat it as if,'well, you know what, we'll save money over here, and the balance sheet looks better.'"

The result of this decision, Kildee says, was "lead-laced water going into the bodies of children."

He says the Snyder administration looks at a lot of problems as "balance sheet problems," and says that's why it failed in this case.

Liz Purchia
U.S. EPA
202-564-6691
202-841-2230

On Nov 11, 2015, at 3:00 PM, Distefano, Nichole <DiStefano.Nichole@epa.gov> wrote:

Me as well.

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> On Nov 11, 2015, at 2:56 PM, Hedman, Susan <hedman.susan@epa.gov> wrote:
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> > On Nov 11, 2015, at 2:42 PM, Meiburg, Stan <Meiburg.Stan@epa.gov> wrote:
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Stan

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On Nov 10, 2015, at 3:37 PM, Meiburg, Stan <Meiburg.Stan@epa.gov> wrote:

Thank you, Susan. This sounds encouraging, and I want to thank you and your team, as well as everyone in Public Affairs and Congressional, for all the work that has gone into the events today. Hopefully this will enable us to continue a strong message moving forward and keep us focused on supporting everyone who is working to provide better drinking water for the people of Flint.

My instinct is that it probably would be worth a download call just to have everybody hear the story once vs. your having to tell it multiple times, but I am open to others' suggestions on this point. Sounds like it could be a little easier than the other calls we've been having on people's personal time!! I will be available tomorrow in the morning before 10:30 Eastern time or in the afternoon after 2:00 p.m. But if other folks want to do something later today, you should go ahead without me.

Stan

A. Stanley Meiburg, Ph.D.

Acting Deputy Administrator

U.S. Environmental Protection Agency

MC-1102A

1200 Pennsylvania Avenue, NW

Washington, DC 20460

-----Original Message-----

From: Hedman, Susan

Sent: Tuesday, November 10, 2015 3:30 PM

To: Meiburg, Stan <Meiburg.Stan@epa.gov>; Beauvais, Joel <Beauvais.Joel@epa.gov>; Distefano, Nichole <DiStefano.Nichole@epa.gov>; Purchia, Liz <Purchia.Liz@epa.gov>; Grevatt, Peter <Grevatt.Peter@epa.gov>

Cc: **Administrator / Ex. 6**

Subject: Briefing for Rep Kildee and Rep Lawrence

The briefing went very well this morning. Rep Kildee and Rep Lawrence now have a much more complete understanding of EPA's role in SDWA implementation and our activities in Flint over the past year or so. I would be happy to set up a call later today or tomorrow to provide you with more details.

Following the briefing, I did an in-depth interview with the MPR reporter who interviewed Peter last week. She also plans to do a story on the audit we announced today -- and I am about to do an interview about the audit with CBS in Detroit.

As we drive back to Chicago, I am also going to repeat some of the briefing I did this morning -- this time via phone for Senator Stabenow's environmental aide and LD and the LD from Senator Peters' Office.

After the briefing this morning, Rep Kildee said that his only remaining concern is whether we will be able to continue our current level of communication. To that end, I have asked the R5 legislative liaison for Michigan to set up a weekly call to brief congressional staff on EPA Task Force activities and other Flint-related matters so that they are kept in the loop.

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Cc: Nelson, Leverett[nelson.leverett@epa.gov]; Deamer, Eileen[deamer.eileen@epa.gov]
From: Hedman, Susan
Sent: Thur 11/12/2015 5:19:05 AM
Subject: Re: Briefing for Rep Kildee and Rep Lawrence

Looping in Eileen and Rett.

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Stan

A. Stanley Meiburg, Ph.D.

Acting Deputy Administrator

U.S. Environmental Protection Agency

MC-1102A

1200 Pennsylvania Avenue, NW

Washington, DC 20460

-----Original Message-----

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Sent: Tuesday, November 10, 2015 3:30 PM

To: Meiburg, Stan <Meiburg.Stan@epa.gov>; Beauvais, Joel <Beauvais.Joel@epa.gov>; Distefano, Nichole <DiStefano.Nichole@epa.gov>; Purchia, Liz <Purchia.Liz@epa.gov>; Grevatt, Peter <Grevatt.Peter@epa.gov>

Cc: Administrator / Ex. 6
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Sent from my iPhone

To: Hyde, Tinka[hyde.tinka@epa.gov]; Poy, Thomas[poy.thomas@epa.gov]
Cc: Henry, Timothy[henry.timothy@epa.gov]
From: Deltoral, Miguel
Sent: Thur 11/12/2015 2:21:39 PM
Subject: Re: FYI and quick follow up on physical disturbances

Hi Tinka,

It's not surprising to see high lead in 2015 from disturbances in 2014. We found high lead years after disturbances in the study we did here in Chicago as well. The disturbance knocks off the protective scale so even if the high lead-bearing scale/sediment is flushed out completely, you now have bare lead pipe exposed to the drinking water. The extent of the physical disturbance would dictate how much scale is knocked off so that can be highly variable. Another factor is how much orthophosphate is being used. Initially, public water systems feed a higher level of orthophosphate called the 'passivation dose' to initially coat the inside of the pipes, but after some time they typically reduce the amount of orthophosphate to what is called a 'maintenance dose' to maintain the coating that formed at the higher dosage. Depending on how much orthophosphate is being fed for the 'maintenance dose' at the treatment plant, it can take a long time to re-establish a sufficiently protective coating.

Miguel A. Del Toral
Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

From: Hyde, Tinka
Sent: Wednesday, November 11, 2015 08:19 PM
To: Poy, Thomas; Deltoral, Miguel
Cc: Henry, Timothy
Subject: Fwd: FYI and quick follow up on physical disturbances

Miguel what is your sense regarding the question below about the timing of the disturbance near the Flint residents home?

Sent from my iPhone

Begin forwarded message:

> **From:** "Kelley, Jeff" <kelley.jeff@epa.gov>
> **Date:** November 11, 2015 at 5:32:51 PM CST

To: "Hyde, Tinka" <hyde.tinka@epa.gov>
Cc: "Rowan, Anne" <rowan.anne@epa.gov>, "Hedman, Susan" <hedman.susan@epa.gov>
Subject: Fwd: FYI and quick follow up on physical disturbances

Follow-up question from Michigan Radio ...

Jeff Kelley
Director, Office of External Communications
U.S. EPA Region 5
ph: 312-353-1159

---------- Forwarded message ----------
From: "**Lindsey Smith**" <lmsmi@umich.edu>
Date: Wed, Nov 11, 2015 at 12:49 PM -0800
Subject: FYI and quick follow up on physical disturbances
To: "Kelley, Jeff" <kelley.jeff@epa.gov>

Hi Jeff, Thanks again for taking the time yesterday.

Just wanted to let you know I followed up with Consumers' Energy about the nat gas replacement work they did on Browning. Turns out it was done in August 2014. Does it seem weird that the lead levels were still that high at Lee Anne's home 6+ months later? Does that change any of the recommendation we talked about and that were in the report to the public about when they should flush their water lines for a long time? I don't know if you guys know or not. I just thought I'd bring to your attention considering I didn't have the info when we spoke yesterday.

Best~

--
Lindsey Smith
West Michigan Reporter
Michigan Radio
Office (616) 551-0717
michiganradio.org

To: Hyde, Tinka[hyde.tinka@epa.gov]; Kelley, Jeff[kelley.jeff@epa.gov]
Cc: Rowan, Anne[rowan.anne@epa.gov]
From: Hedman, Susan
Sent: Thur 11/12/2015 5:16:27 PM
Subject: RE: FYI and quick follow up on physical disturbances

Thanks for the quick follow up.

From: Hyde, Tinka
Sent: Thursday, November 12, 2015 10:32 AM
To: Kelley, Jeff <kelley.jeff@epa.gov>
Cc: Rowan, Anne <rowan.anne@epa.gov>; Hedman, Susan <hedman.susan@epa.gov>
Subject: RE: FYI and quick follow up on physical disturbances

Jeff – According to Miguel, it's not surprising to see high lead in 2015 from disturbances in 2014. We found high lead years after disturbances in the study we did here in Chicago as well. The disturbance knocks off the protective scale so even if the high lead-bearing scale/sediment is flushed out completely, you now have bare lead pipe exposed to the drinking water. The extent of the physical disturbance would dictate how much scale is knocked off so that can be highly variable. Another factor is how much orthophosphate is being used. In the case of Flint, we know that there was no orthophosphate being delivered to the Flint distribution system after the switch to Flint River water in April 2014. So, if there was a physical disturbance that knocked off the scale in the fall of 2014, the lack of CCT means that the scale would not have been restored.

Please let me know if you have other questions. Thanks

Tinka G. Hyde

Water Division Director

USEPA W-15J

77 W. Jackson Blvd

Chicago, IL 60604

Office: 312-886-9296

Cell: 312-735-9428

From: Kelley, Jeff
Sent: Wednesday, November 11, 2015 5:33 PM
To: Hyde, Tinka
Cc: Rowan, Anne; Hedman, Susan
Subject: Fwd: FYI and quick follow up on physical disturbances

Follow-up question from Michigan Radio ...

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Director, Office of External Communications
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Lindsey Smith
West Michigan Reporter
Michigan Radio
Office (616) 551-0717
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To: Hedman, Susan[hedman.susan@epa.gov]
From: Meiburg, Stan
Sent: Sat 11/14/2015 4:06:44 PM
Subject: Re: R5 Weekend Update: Great Lakes Tribal Grants; RTOC; Polymet Mine FEIS; Flint

;;;;;;;;;;

Well, quite a week and congratulations on the good outcomes at Flint. **Nonresponsive**

Nonresponsive

Thanks again,

Stan

Sent from my iPhone

On Nov 13, 2015, at 8:15 PM, Hedman, Susan <hedman.susan@epa.gov> wrote:

Nonresponsive

Nonresponsive

Nonresponsive

Sent: Friday, November 13, 2015 6:04 PM
To: Hedman, Susan <hedman.susan@epa.gov>
Subject: Nonresponsive

Nonresponsive

Nonresponsive

Nonresponsive

Earlier this week, I travelled to Flint to announce that EPA will be auditing the MDEQ drinking water program and to meet with Rep. Kildee and Rep. Lawrence. The audit announcement was well-received by the public, elected officials and MDEQ. Our two-hour meeting with Rep. Kildee and Rep. Lawrence included an in-depth briefing on EPA's work on Flint drinking water issues and a discussion with members of the EPA Flint Safe Drinking Water Task Force. At the end of the meeting, Rep. Kildee said his only remaining concern was making sure that there are opportunities for regular communication with EPA.

After the meeting, the Task Force toured the Flint drinking water plant and met with the Flint City Administrator. I went to the MPR studio in Lansing to do an interview with the reporter who interviewed Peter Grevatt last week. On the ride home, I did an hour-long conference call with Stabenow/Peters staffers to cover the same material that I discussed earlier in the day with Rep. Kildee and Rep. Lawrence.

We will be following up by holding weekly calls with interested congressional staff to brief them on the activities of the EPA Flint Safe Drinking Water Task Force. We will also be standing up a web page that includes information about the Task Force and information about steps to take to limit exposure to lead in drinking water. I am also preparing a written summary of the briefings I provided on Tuesday – in a format that can be distributed to congressional offices and potentially also included on the web page. We will be circulating drafts of all of these materials before they are posted or released.

Here are some recent clips about Flint:

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http://www.mlive.com/news/flint/index.ssf/2015/11/epa_says_it_will_audit_michiga.html

By Ron Fonger | rfonger1@mlive.com
on November 10, 2015 at 1:43 PM

FLINT, MI -- In the wake of a public health crisis over high lead levels in water in some Flint homes, the U.S. Environmental Protection Agency has announced it will audit the state's drinking water program.

A Nov. 10 news release from the EPA says it will examine the Michigan Department of Environmental Quality's "implementation of the Safe Drinking Water Act and related rules on lead and copper, total coliform, nitrates and ground water."

The audit comes after requests for a federal investigation of Flint's water crisis by U.S. Rep. Dan Kildee, D-Flint, and state Senate Minority Leader Jim Ananich, D-Flint.

Brad Wurfel, a spokesman for the DEQ, issued a statement today, pledging the agency's cooperation.

"EPA is conducting this audit to ensure that MDEQ maintains reliable drinking water supplies that meet all of the requirements of the Safe Drinking Water Act," EPA Region 5 Administrator Susan Hedman said in a written statement.

"This comprehensive audit will provide Flint residents and the people of Michigan with more information about MDEQ oversight of public water supplies and will identify actions that may be needed to strengthen the Michigan drinking water program."

The EPA news release says employees of the agency will go to MDEQ offices to review state files on public water system compliance with the SDWA and will review the state's oversight of public water systems.

"The audit will consist of a full programmatic review that supplements the reviews of the Michigan drinking water program that EPA conducts each year," the news release says.

The audit is expected to take several months to complete and a report will be issued when it is complete.

In separate letters to Gina McCarthy, administrator of the EPA, last month, Kildee and Ananich asked for the federal review of the MDEQ's oversight of water treatment in Flint.

A public health emergency was issued here after researchers from Virginia Tech university and a Hurley Medical Center doctor discovered high lead levels in Flint's water supply and rising blood lead levels in children since the city switched its water source from Lake Huron to the Flint River in April 2014.

DEQ Director Dan Wyant has said state regulators mistakenly allowed the city to distribute river water without requiring that it be treated to make it less corrosive.

Wurfel said in an email to The Flint Journal-MLive that the DEQ "welcomes this announcement from EPA, and we've already signaled to them that they can count on our full cooperation and transparency."

"We've appreciated the federal government's support on the situation in Flint --including its announcement last week that the Lead and Copper rule speaks ambiguously on the corrosion control issue," Wurfel's statement says.

"Nobody wants to see a situation like Flint, and we look forward in working with our federal partners going forward because we share the goal of making sure the Flint situation is not repeated – in Michigan, or anywhere else."

Ananich said the federal investigation would not have been necessary if an independent commission with subpoena power had been appointed by Gov. Rick Snyder.

Still, the senator said he's interested in the federal review.

"I want to see (EPA's findings)," he said. "I'm hoping it's thorough and of value."

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http://michiganradio.org/post/congressman-kildee-says-hes-pleased-epa-will-review-michigans-drinking-water-program#stream/0

By stateside staff, nov. 12

The U.S. Environmental Protection Agency will be watching over the state of Michigan's shoulder to make sure our drinking water is safe.

The EPA will audit the state's drinking water safety program after the state Department of Environmental Quality admitted it failed to use the correct protocols when it approved the switch to the Flint River as the primary source of drinking water for Flint.

That mistake led to dangerously high lead levels in that city's drinking water.

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Kildee says it appears the EPA's audit of the MDEQ is the federal review that has the teeth that he's been looking for.

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Kildee says he's not concerned about the EPA being complicit in the failings that occurred in Flint, saying the federal agency pushed the state for answers on whether or not a corrosion control program had been implemented.

The state initially replied that they did have a corrosion control program in place. That later turned out to not be true.

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http://michiganradio.org/post/us-epa-will-audit-michigan-safe-drinking-water-program-wake-flints-problems

By Steve Carmody • 2 hours ago

A federal agency will review how the state of Michigan monitors local drinking water.

"What happened in Flint shouldn't have happened," says EPA Region 5 administrator Susan Hedman, who says as a result, "There is a lack of public confidence in the drinking water program here in Michigan."

Regional EPA administrator Susan Hedman says her agency will conduct an audit of the Michigan Department of Environmental Quality's drinking water program.

"EPA is conducting this audit to ensure that MDEQ maintains reliable drinking water supplies that meet all of the requirements of the Safe Drinking Water Act," Hedman said. "This comprehensive audit will provide Flint residents and the people of Michigan with more information about MDEQ oversight of public water supplies and will identify actions that may be needed to strengthen the Michigan drinking water program."

MDEQ has been criticized for failing to detect problems with Flint's drinking water after the city switched to its namesake river last year.

During the 18 months that the city took its tap water from the Flint River, residents complained about the smell, taste and appearance of their drinking water. There were also E coli outbreaks and higher than acceptable levels of chemicals used to treat the water, as well as their by-products.

Researchers also claim the corrosiveness of the river water damaged pipes containing lead, in people's homes and in city transmission lines. The result was increasing levels of lead in the city's drinking water.

The MDEQ apparently failed to insure the city used proper corrosion controls to lessen the effect of the river water.

"What happened in Flint shouldn't have happened," says Hedman, who says as a result, "There is a lack of public confidence in the drinking water program here in Michigan."

A spokesman says the agency welcomes the EPA review of its drinking water program, adding EPA "can count on our full cooperation and transparency."

The written statement continues:

"We've appreciated the federal government's support on the situation in Flint – including its announcement last week that the Lead and Copper rule speaks ambiguously on the corrosion control issue. Nobody wants to see a situation like Flint, and we look forward in working with our federal partners going forward because we share the goal of making sure the Flint situation is not repeated – in Michigan, or anywhere else."

MDEQ officials say tests from nearly 400 homes and businesses in Flint indicate problems with lead are localized to individual buildings or even individual faucets.

http://www.wnem.com/story/30482668/us-regulators-will-audit-michigans-drinking-water-program#ixzz3r83XokM4

Posted: Nov 10, 2015 11:40 AM CST Updated: Nov 10, 2015 11:40 AM CST

By Carrie Widenmier

FLINT, MI (AP) - The federal government says it will conduct an audit of how the state of Michigan oversees public water supplies.

The audit announced Tuesday is in response to the water crisis in Flint. The city switched water sources in 2014, and the corrosive water released lead from old pipes.

Gov. Rick Snyder's Department of Environmental Quality acknowledges that drinking water rules were not followed when Flint made the switch to the Flint River. Flint now gets water from the Detroit system.

The EPA says it will investigate how Michigan enforces rules on lead, copper and nitrates and will identify ways to possibly strengthen state oversight.

The audit will take several months and will be released to the public.

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Statement by Congressman Dan Kildee on the Announcement of the EPA's Audit of MDEQ

http://www.realestaterama.com/2015/11/11/statement-by-congressman-dan-kildee-on-the-announcement-of-the-epa%E2%80%99s-audit-of-mdeq-ID029750.html

November 11, 2015 by RealEstateRama

WASHINGTON, D.C. – November 11, 2015 – (RealEstateRama) — Congressman Dan Kildee (MI-05) issued the following statement after a meeting today with the Regional Administrator of the Environmental Protection Agency (EPA) who announced that the EPA will audit the Michigan Department of Environmental Quality's (MDEQ) drinking water program. Congressman Kildee previously called for a full review of the water problems in Flint.

"Today, I met with the EPA Region 5 Administrator, Susan Hedman, and the Flint Drinking Water Task Force to discuss her internal review of the EPA's oversight of MDEQ's handling of Flint's water. The people of Flint deserve answers, and I welcome the EPA's audit of the state's actions that led to the Flint water crisis. The EPA's audit and task force will hopefully begin to restore confidence among Flint residents regarding the safety of the water. "While this meeting was an important step forward and provided answers to a number of my concerns, it raised additional questions about the actions of MDEQ and other state officials, including the emergency financial manager, and the decisions they made that led to this crisis.

An audit is a critical next step that will help uncover the facts and ensure that the appropriate people are held accountable. "Later this month, I will testify at a meeting of the National Drinking Water Advisory Council on what we've learned firsthand in Flint and necessary improvements to the Lead and Copper Rule.

This will be an important moment to highlight the changes that are needed to ensure that a crisis like the one Flint faces does not occur anywhere else in the country."

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http://www.freep.com/story/news/local/michigan/2015/11/10/drinking-water-audit-michigan/75522044/

John Wisely, Detroit Free Press 5:19 p.m. EST November 10, 2015

The U.S. Environmental Protection Agency will audit the state of Michigan's drinking water safety program in the wake of Flint's water crisis, which found lead in the city's water system.

The audit comes after the Michigan Department of Environment Quality admitted last month that it used the wrong protocols after it approved Flint's switch to the Flint River as its primary source of drinking water last year.

When high lead levels were detected in some Flint homes after the switch, experts concluded it was the result of corrosion in pipes caused by the new water. Flint was not adding corrosion-inhibiting chemicals to the water as the Detroit Water and Sewerage Department had done when it was supplying Flint.

"EPA is conducting this audit to ensure that MDEQ maintains reliable drinking water supplies that meet all of the requirements of the Safe Drinking Water Act," EPA Region 5 Administrator Susan Hedman said in a statement. "This comprehensive audit will provide Flint residents and the people of Michigan with more information about MDEQ oversight of public water supplies and will identify actions that may be needed to strengthen the Michigan drinking water program."

Last month, the MDEQ removed the chief of the department's Office of Drinking Water and Municipal Assistance, Liane Shekter Smith. Gov. Rick Snyder appointed a task force to review the way the department handled the switch.

"MDEQ welcomes this announcement from EPA, and we've already signaled to them that they can count on our full cooperation and transparency," spokesman Brad Wurfel said.

He said the EPA's announcement last week that some rules are ambiguous on how communities must deal with lead and copper in their drinking water systems shows that reform is needed.

"Nobody wants to see a situation like Flint, and we look forward in working with our federal partners going forward because we share the goal of making sure the Flint situation is not repeated — in Michigan, or anywhere else," Wurfel said.

Flint resident Joe Castiglione, 75, said the audit is a good idea because the state's decisions should be reviewed by the federal government. Castiglione said he developed a rash all over his body after the city switched water sources.

"They didn't really check it before the switch," Castiglione said. "They said it was safe."

Last month, U.S. Rep. Dan Kildee, who represents Flint in Congress, and state Senate Minority Leader Jim Ananich, who represents the city in Lansing, asked the EPA to conduct an investigation. Ananich also has called for hearings in the state Legislature to examine MDEQ's conduct.

"This EPA review is an important part of the comprehensive examination that is necessary to get to the bottom of how this crisis occurred," Ananich said today in a statement. "I believe the EPA's feedback should be in addition to the legislative hearings I have repeatedly called for, since they admit that their audit could take several months ... and (they) will not have the subpoena power or public transparency that hearings would provide."

Hedman said the EPA every year monitors compliance with the Safe Drinking Water Act but the audit would bring added scrutiny, including visits to the MDEQ offices to review its files and an examination of the state's oversight of local drinking water systems.

In 2013, Flint voted to join Genesee County in building a new pipeline from Lake Huron as part of the Karegnondi Water Authority. The switch was approved by an emergency manager appointed by Snyder to fix Flint's finances.

The pipeline, however, does not come online until next year. Meantime, Flint left Detroit's water system, saying it was costing the city too much money, and began using the Flint River, which had been its backup supply. But the city never added phosphates to that water as Detroit had done. Phosphates form a film on the inside of pipes, helping keep lead and copper from leaching into the water.

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After the lead was detected, the city and the state agreed to reconnect Flint to Detroit's water system until the new pipeline is completed. The switch back to Detroit water is expected to cost about $12 million over the next year, to be paid for by the city, the state and a grant from the C.S. Mott Foundation.

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http://epnewswire.com/stories/510647596-michigan-finds-elevated-lead-levels-in-flint-elementary-school-some-homes

Wednesday, Nov 11, 2015 @ 11:44am By EP News Wire Reports

Testing by the Michigan Department of Environmental Quality (DEQ) found high levels of lead in nine faucets at the Freeman Elementary School in Flint, Michigan.

The test is part of an ongoing action plan to address the city's drinking water. The results were announced Monday.

"The safety and health of our students are our primary concern at Flint Community Schools, so we will start work as soon as possible to replace faucets, aerators and other related components where high lead levels were detected," Flint Community Schools Superintendent Bilal Tawwab said. "Once those fixes have been made, the DEQ has offered to provide additional testing of the water at Freeman Elementary to ensure the water from every sample is safe for our students."

The DEQ tested 31 faucets at the school, and the nine with lead exposure showed decreased levels of lead after running for several minutes. The department also tested 381 homes, businesses and other facilities, 75 percent of which showed lead levels at five parts per billion or less. While many homes had negligible lead exposure, some did have elevated levels, so the DEQ is urging homeowners to take advantage of the free testing.

"The results from this data underline the need for water testing at all homes, businesses, schools and other buildings in Flint," DEQ Flint Action Plan Coordinator George Krisztian said. "Problems with lead exposure appear to be localized to individual service lines or plumbing fixtures, and we want to see all families in Flint take advantage of free water testing from the state."

Susan Hedman

Region 5 Administrator/Great Lakes National Program Manager

U.S. Environmental Protection Agency

77 West Jackson Blvd - 19th Floor

Chicago, Illinois 60604-3590

To: Hedman, Susan[hedman.susan@epa.gov]
Cc: Wilson, Shari[Wilson.Shari@epa.gov]
From: Giles-AA, Cynthia
Sent: Mon 11/16/2015 5:06:10 PM
Subject: RE: R5 Weekend Update: Great Lakes Tribal Grants; RTOC; Polymet Mine FEIS; Flint

Thanks Susan. Please include Shari Wilson on communications on this topic. Thanks.

From: Hedman, Susan
Sent: Monday, November 16, 2015 9:28 AM
To: Administrator / Ex. 6
Cc: Meiburg, Stan <Meiburg.Stan@epa.gov>; Garbow, Avi <Garbow.Avi@epa.gov>; Giles-AA, Cynthia <Giles-AA.Cynthia@epa.gov>
Subject: Re: R5 Weekend Update: Great Lakes Tribal Grants; RTOC; Polymet Mine FEIS; Flint

Will do.

Looping in Cynthia.

Sent from my iPhone

On Nov 15, 2015, at 8:03 PM, Administrator / Ex. 6 wrote:

Nonresponsive

Sent from my iPhone

On Nov 13, 2015, at 8:15 PM, Hedman, Susan <hedman.susan@epa.gov> wrote:

Nonresponsive

Nonresponsive

Nonresponsive

Nonresponsive

Nonresponsive

Earlier this week, I travelled to Flint to announce that EPA will be auditing the MDEQ drinking water program and to meet with Rep. Kildee and Rep. Lawrence. The audit announcement was well-received by the public, elected officials and MDEQ. Our two-hour meeting with Rep. Kildee and Rep. Lawrence included an in-depth briefing on EPA's work on Flint drinking water issues and a discussion with members of the EPA Flint Safe Drinking Water Task Force. At the end of the meeting, Rep. Kildee said his only remaining concern was making sure that there are opportunities for regular communication with EPA.

After the meeting, the Task Force toured the Flint drinking water plant and met with the Flint City Administrator. I went to the MPR studio in Lansing to do an interview with the reporter who interviewed Peter Grevatt last week. On the ride home, I did an hour-long conference call with Stabenow/Peters staffers to cover the same material that I discussed earlier in the day with Rep. Kildee and Rep. Lawrence.

We will be following up by holding weekly calls with interested congressional staff to brief them on the activities of the EPA Flint Safe Drinking Water Task Force. We will also be standing up a web page that includes information about the Task Force and information about steps to take to limit exposure to lead in drinking water. I am also preparing a written summary of the briefings I provided on Tuesday – in a format that can be distributed to congressional offices and potentially also included on the web page. We will be circulating drafts of all of these materials before they are posted or released.

Here are some recent clips about Flint:

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http://www.mlive.com/news/flint/index.ssf/2015/11/epa_says_it_will_audit_michiga.html

By Ron Fonger | rfonger1@mlive.com
on November 10, 2015 at 1:43 PM

FLINT, MI -- In the wake of a public health crisis over high lead levels in water in some Flint homes, the U.S. Environmental Protection Agency has announced it will audit the state's drinking water program.

A Nov. 10 news release from the EPA says it will examine the Michigan Department of Environmental Quality's "implementation of the Safe Drinking Water Act and related rules on lead and copper, total coliform, nitrates and ground water."

The audit comes after requests for a federal investigation of Flint's water crisis by U.S. Rep. Dan Kildee, D-Flint, and state Senate Minority Leader Jim Ananich, D-Flint.

Brad Wurfel, a spokesman for the DEQ, issued a statement today, pledging the agency's cooperation.

"EPA is conducting this audit to ensure that MDEQ maintains reliable drinking water supplies that meet all of the requirements of the Safe Drinking Water Act," EPA Region 5 Administrator Susan Hedman said in a written statement.

"This comprehensive audit will provide Flint residents and the people of Michigan with more information about MDEQ oversight of public water supplies and will identify actions that may be needed to strengthen the Michigan drinking water program."

The EPA news release says employees of the agency will go to MDEQ offices to review state files on public water system compliance with the SDWA and will review the state's oversight of public water systems.

"The audit will consist of a full programmatic review that supplements the reviews of the Michigan drinking water program that EPA conducts each year," the news release says.

The audit is expected to take several months to complete and a report will be issued when it is complete.

In separate letters to Gina McCarthy, administrator of the EPA, last month, Kildee and Ananich asked for the federal review of the MDEQ's oversight of water treatment in Flint.

A public health emergency was issued here after researchers from Virginia Tech university and a Hurley Medical Center doctor discovered high lead levels in Flint's water supply and rising blood lead levels in children since the city switched its water source from Lake Huron to the Flint River in April 2014.

DEQ Director Dan Wyant has said state regulators mistakenly allowed the city to distribute river water without requiring that it be treated to make it less corrosive.

Wurfel said in an email to The Flint Journal-MLive that the DEQ "welcomes this announcement from EPA, and we've already signaled to them that they can count on our full cooperation and transparency."

"We've appreciated the federal government's support on the situation in Flint -- including its announcement last week that the Lead and Copper rule speaks ambiguously on the corrosion control issue," Wurfel's statement says.

"Nobody wants to see a situation like Flint, and we look forward in working with our federal partners going forward because we share the goal of making sure the Flint situation is not repeated – in Michigan, or anywhere else."

Ananich said the federal investigation would not have been necessary if an independent commission with subpoena power had been appointed by Gov. Rick Snyder.

Still, the senator said he's interested in the federal review.

"I want to see (EPA's findings)," he said. "I'm hoping it's thorough and of value."

For Immediate Release
november 11, 2015

WASHINGTON, D.C. – U.S. Senator Debbie Stabenow today issued the following statement regarding the Environmental Protection Agency's decision to audit the Michigan Department of Environmental Quality's drinking water program:

"It is clear that the State of Michigan made multiple mistakes and misjudgments, which have seriously harmed the health of the people of Flint. The EPA is taking critical steps today to get to the bottom of this outrageous situation. Everything must be done to make sure families and communities in Flint have safe drinking water."

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http://michiganradio.org/post/congressman-kildee-says-hes-pleased-epa-will-review-michigans-drinking-water-program#stream/0

By stateside staff, nov. 12

The U.S. Environmental Protection Agency will be watching over the state of Michigan's shoulder to make sure our drinking water is safe.

The EPA will audit the state's drinking water safety program after the state Department of Environmental Quality admitted it failed to use the correct protocols when it approved the switch to the Flint River as the primary source of drinking water for Flint.

That mistake led to dangerously high lead levels in that city's drinking water.

Flint's Democratic Congressman Dan Kildee joined us today to discuss the EPA's audit.

Kildee says it appears the EPA's audit of the MDEQ is the federal review that has the teeth that he's been looking for.

“It seems that there is incompetence, or mismanagement, or a lack of attention within the Department of Environmental Quality. They sort of have acknowledged that themselves in this case. That kind of failure has consequences. And they could be significant health consequences,” says Kildee.

Kildee says he’s not concerned about the EPA being complicit in the failings that occurred in Flint, saying the federal agency pushed the state for answers on whether or not a corrosion control program had been implemented.

The state initially replied that they did have a corrosion control program in place. That later turned out to not be true.

Kildee says the larger lesson in this is that people can’t take a “bean counter” approach to managing cities. He says politicians who equate running a business with running a government are missing the point.

“You can bankrupt a business. You can disassemble a business. You can sell off the parts and put it away. Cities are human organisms. You can’t just simply treat it as if,’well, you know what, we’ll save money over here, and the balance sheet looks better.’”

The result of this decision, Kildee says, was “lead-laced water going into the bodies of children.”

He says the Snyder administration looks at a lot of problems as “balance sheet problems,” and says that's why it failed in this case.

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http://michiganradio.org/post/us-epa-will-audit-michigan-safe-drinking-water-program-wake-flints-problems

By Steve Carmody • 2 hours ago

A federal agency will review how the state of Michigan monitors local drinking water.

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http://www.realestaterama.com/2015/11/11/statement-by-congressman-dan-kildee-on-the-announcement-of-the-epa%E2%80%99s-audit-of-mdeq-ID029750.html

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John Wisely, Detroit Free Press 5:19 p.m. EST November 10, 2015

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Susan Hedman

Region 5 Administrator/Great Lakes National Program Manager

U.S. Environmental Protection Agency

77 West Jackson Blvd - 19th Floor

Chicago, Illinois 60604-3590

Nonresponsive

To: Hedman, Susan[hedman.susan@epa.gov]; Hyde, Tinka[hyde.tinka@epa.gov]; Henry, Timothy[henry.timothy@epa.gov]; Nelson, Leverett[nelson.leverett@epa.gov]; Beckmann, Ronna Erin[beckmann.ronna@epa.gov]; Kaplan, Robert[kaplan.robert@epa.gov]
From: Fortin, Denise
Sent: Mon 11/16/2015 10:01:58 PM
Subject: FW: Op-ed by Rep. Kildee in Flint Journal and other Michigan papers yesterday

FYI

Denise Fortin

Congressional Liaison

Office of Regional Administrator

U.S. Environmental Protection Agency

312-886-9859

From: Cannon, Phillippa
Sent: Monday, November 16, 2015 3:19 PM
To: Fortin, Denise <Fortin.Denise@epa.gov>; Rowan, Anne <rowan.anne@epa.gov>; Cassell, Peter <cassell.peter@epa.gov>; Kelley, Jeff <kelley.jeff@epa.gov>; Deamer, Eileen <deamer.eileen@epa.gov>
Subject: Op-ed by Rep. Kildee in Flint Journal and other Michigan papers yesterday

Full investigation needed at every level in Flint water crisis

Flint Journal, The (MI) - Sunday, November 15, 2015

Readability: *>12 grade level (Lexile: 1390L)*

URL:
http://www.mlive.com/opinion/flint/index.ssf/2015/11/full_investigation_needed_at_e.html

By U.S. Rep. Dan Kildee

It's clear that the Flint water crisis was a failure of government. Residents are rightfully angry, and I'm angry over the lack of immediate action to address unsafe lead levels in the city's water.

Despite independent research showing elevated lead levels, the Michigan Department of **Environmental** Quality and U.S. **Environmental Protection Agency** stalled for weeks, saying there was no cause for concern and denying there was even a problem.

Now, state officials have admitted that drinking-water laws were not followed. Yet inaction by officials has caused considerable harm. The people of Flint are victims of this failure of government, and there needs to be accountability.

That's why I've called for a thorough investigation into the water problems in Flint. And that's why I continue to stress that both the MDEQ and EPA act in an urgent manner to address this public health crisis.

A complete review of actions at every level will result in answers and transparency, and hopefully it will begin to restore public confidence for Flint residents.

It will also ensure that we take steps to make sure this never happens again, in Flint or in other cities.

Residents deserve to know why for months the state of Michigan failed to follow federal laws. They also deserve to know why corrosion control treatments were not in place when the city's water supply switched to the Flint River.

Additionally, I continue to advocate for long-term solutions to improve Flint's water infrastructure. Lead-clearing filters, bottled water and even reconnecting to the Detroit water system are critical steps, but they won't solve the problem. Flint River water has caused extensive damage to the city's aged infrastructure, and major investments are needed to make repairs.

I have been advocating for the state and EPA to forgive Flint's federal Safe Drinking Water loans to free up money to make it possible for Flint to make system improvements -- including replacement of lead service lines.

Both the state and federal government have to take responsibility and act.

Flint is a financially distressed city that simply doesn't have the money to pay for water improvements made necessary by the state's very costly and ill-thought-out decision.

Simply put, Flint should not have to foot the bill for the state and EPA's mistakes.

To exacerbate the crisis, the state has cut tens of millions of dollars in revenue sharing in recent years. This money could have helped to make critical infrastructure improvements.

Now as a result, Flint -- and a whole subset of older, industrial American cities -- stand to be left behind in the new economy if we don't make critical investments.

Access to safe drinking water is a fundamental right. Having a water system that delivers clean drinking water to our schools and children is not up for debate.

Under the law, it is the responsibility of the state and federal government to ensure safe drinking water.

And the very agencies of government charged with protecting public health failed to do that.

The state and federal government both need to act to fix the problems created by the failed policies that led to this crisis. Neither has an excuse not to.

-- Dan Kildee, D-Flint Township, represents Michigan's 5th Congressional District.

Gladyes Williamson holds up a discolored jug of water and chants along with other protestors outside Flint's Farmers Market in April. (MLive.com files)

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Phillippa Cannon

Superfund Division

U.S. EPA Region 5

312-353-6218

To: Poy, Thomas[poy.thomas@epa.gov]; Rowan, Anne[rowan.anne@epa.gov]
Cc: Deltoral, Miguel[deltoral.miguel@epa.gov]
From: Hyde, Tinka
Sent: Mon 11/16/2015 11:25:02 PM
Subject: Re: Flushing Language

Anne here is the flushing language.

Sent from my iPhone

On Nov 16, 2015, at 4:14 PM, Poy, Thomas <poy.thomas@epa.gov> wrote:

> Tinka: I've boiled the language down to the following:
>
> Corrosion control treatment has been reintroduced with Flint's return to water from the Great Lakes Water Authority. The protective scales within the service lines are being built up and the stability of this growing scale is hard to know throughout the water system. EPA recommends that pregnant women, infants and children use only bottled water or water that is filtered through a water filter that is certified to remove 'total lead' for drinking, cooking and making baby formula until [option 1: further notice][option 2: an assessment can be conducted on the effectiveness of flushing under the current conditions]
>
> ---
>
> Tom Poy
>
> Chief, Ground Water and Drinking Water Branch
>
> USEPA - Region 5
>
> (312) 886-5991

To: Poy, Thomas[poy.thomas@epa.gov]
From: Hyde, Tinka
Sent: Mon 11/16/2015 11:55:30 PM
Subject: ACTION: Draft Flint web page for review

Tom- Below is a link to the web page that I would like you to review and work with Anne (and Allison) on tomorrow. I shared the language you provided earlier and as we looked at the web page we thought it may make more sense to eliminate the reference to flushing, except to say that normally we recommend flushing but given that ……..Corrosion control treatment has been reintroduced with Flint's recent return to water from the Great Lakes Water Authority. The protective scales within the service lines are being built up and the stability of this growing scale is hard to know throughout the water system. EPA recommends that all residents (do we want to say particularly pregnant women, infants and children) use only bottled water or water that is filtered through a water filter that is certified to remove 'total lead' for drinking, cooking and making baby formula until further notice.

The concern is that there is a lot of language on flushing that may cause confusion. Please let me know what you think. I believe the goal is to stand the web page on Wed. Thanks

From: Nowotarski, Allison
Sent: Monday, November 16, 2015 4:46 PM
To: Hedman, Susan
Cc: Rowan, Anne; Kelley, Jeff; Hyde, Tinka
Subject: Draft Flint web page for review

Hi Susan,

To view the website:

1) Log in with your LAN ID and password at: https://wcms.epa.gov/user.

2) Once logged in, you can view the draft page at: https://wcms.epa.gov/mi/flint-safe-drinking-water-task-force.

Please note- the photos are temporary placeholders. Let me know if you have any trouble.

Thanks,

Allison Nowotarski

Public Affairs Specialist

U.S. EPA Region 5

(312) 353-0967

To: Peterson, John[peterson.john@epa.gov]; Hedman, Susan[hedman.susan@epa.gov]; Kaplan, Robert[kaplan.robert@epa.gov]; Hyde, Tinka[hyde.tinka@epa.gov]
Cc: Kelley, Jeff[kelley.jeff@epa.gov]; Rowan, Anne[rowan.anne@epa.gov]; Beckmann, Ronna Erin[beckmann.ronna@epa.gov]; Harrison, Melissa[Harrison.Melissa@epa.gov]; Abrams, Dan[Abrams.Dan@epa.gov]; Poy, Thomas[poy.thomas@epa.gov]; Singer, Joshua[Singer.Joshua@epa.gov]; Arcaute, Francisco[Arcaute.Francisco@epa.gov]; Cannon, Phillippa[Cannon.Phillippa@epa.gov]; Deamer, Eileen[deamer.eileen@epa.gov]; Fortin, Denise[Fortin.Denise@epa.gov]; Nowotarski, Allison[nowotarski.allison@epa.gov]; Reshkin, Karen[Reshkin.Karen@epa.gov]; Loop, Travis[Loop.Travis@epa.gov]; Purchia, Liz[Purchia.Liz@epa.gov]; Henry, Timothy[henry.timothy@epa.gov]; Lee, Monica[Lee.Monica@epa.gov]; Grantham, Nancy[Grantham.Nancy@epa.gov]; Distefano, Nichole[DiStefano.Nichole@epa.gov]
From: Cassell, Peter
Sent: Tue 11/17/2015 4:57:00 PM
Subject: Flint Water Clips Nov. 17, 2015

FLINT DRINKING WATER CLIPS

US. EPA Region 5 – as prepared by Peter Cassell *(ORA/OEC/PA)* On Nov. 17

- Lead-exposed Flint kids need better nutrition now, Stabenow says (Flint Journal Op-Ed)

- These Michigan residents are suing the city because their drinking water is contaminated with lead (Business Insider)

- Howard Croft, Flint official responsible for water oversight, resigns (Flint Journal)

- Flint water crisis prompts more scrutiny of federal drinking water rules (Michigan Radio)

- Class action lawsuit claims Snyder, Flint put water cost above safety (Flint Journal)

- Flint Residents Suing Over Toxic Tap Water (Huffington Post)

- Flint utility official resigns amid water controversy (Detroit News)

•□□□□□□□□ Attorneys discuss a Flint water class action lawsuit (Michigan Radio)

•□□□□□□□□ MSU to host panel on Flint water crisis (MSU Today)

•□□□□□□□□ Flint's public works director resigns (Michigan Radio)

•□□□□□□□□ State's instructions for sampling drinking water for lead "not best practice" (Michigan Radio)

•□□□□□□□□ MICHIGAN LEADERS UNDER FIRE OVER LEAD IN FLINT WATER (BNA)

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http://www.mlive.com/news/flint/index.ssf/2015/11/stabenow_says_shes_working_to.html

By Ron Fonger | rfonger1@mlive.com
on November 17, 2015 at 5:50 AM, updated November 17, 2015 at 10:49 AM

FLINT, MI -- Michigan's senior U.S. senator says Flint needs its water problems fixed and questions answered, but also needs to get lead-exposed children better access to good nutrition.

"This whole thing is deeply, deeply concerning," U.S. Sen. Debbie Stabenow said about Flint's water emergency. "I am glad the EPA is coming in with an extensive audit."

The senator said in addition to addressing issues about how the city's lead in water problems arose and the state's responsibility for fixing them, she's working on improving nutrition for children to combat exposure to lead.

Stabenow said the Women Infants and Children program in Genesee County is making pre-mixed infant formula available to city residents enrolled in the program.

Mark Valacak of the Genesee County Health Department said the department has been authorized to provide the formula, which is available to women enrolled in the program at the clinic if they request it.

This whole thing is deeply, deeply concerning.

Stabenow said Dr. Mona Hanna-Attisha told her the most important way parents can combat the ill-effects of lead exposure is through better nutrition.

Hanna-Attisha's study on rising blood lead levels in children after the city changed its water source to the Flint River in April 2014 helped bring an end to the use of the river and a reconnection to the Detroit water system.

The U.S. Department of Agriculture has agreed to make ready-to-use formula available through WIC so that mothers don't have to mix powdered formula with water.

Although the city water system is using Detroit water, the U.S. Environmental Protection Agency warned just last week that residents should be warned of the potential risk of increased lead in drinking water when crews do underground work that could dislodge scale and sediment in water pipes here.

Stabenow encouraged parents use the Double Up food program, which is expanding to supermarkets, and said she's prepared to work with others to help interested investors open a full-service grocery store on Flint's north side.

The most recent Farm Bill provides for assistance for investors interested in opening grocery stores in under-served areas, she said.

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http://www.businessinsider.com/flints-drinking-water-is-contaminated-with-lead-2015-11

The drinking water in Flint, Michigan is contaminated with lead.

And the city may be at fault. The Natural Resources Defense Council (NRDC) alleges that officials there knew about the risks of shifting the city's water supply from Detroit's Lake Huron to the Flint River, but did so anyway — ostensibly to cut costs.

This morning, Flint residents, along with NRDC and the American Civil Liberties Union (ACLU), announced their intent to sue Michigan state and local municipal officials for allegedly violating the federal Safe Drinking Water Act.

The problem likely began with Michigan's inland rivers and lakes, which contain far higher amounts of chloride ions than the Great Lakes, thanks to copious amounts of road salt applied to nearby roads.

When that salty water is pumped into the city's aging infrastructure, it corrodes the pipes, leaching lead into the drinking water.

Residents began to complain about the smell and discoloration of the water soon after the city started drawing water from the Flint River over a year and a half ago, but these complaints were written off by state officials for months, the NRDC alleges.

Drinking water laced with lead ends up in your blood, and that's where it starts to cause problems. Even at extremely low concentrations (the CDC says 5 micgrograms per deciliter is enough to cause concern), lead in blood has been linked with a range of deleterious behavioral and mental health impacts. In young children, exposure to lead in drinking water at these levels can delay mental and physical development and affect attention span and learning, according to the EPA. In adults, it can raise blood pressure and, in the long term, can lead to kidney problems.

The EPA limits the amount of lead allowed in drinking water at 15 parts-per-billion, but states that there is really no safe level. In other words, the EPA's goal is to have no lead at all in drinking water supply, but it will tolerate up to 15 parts-per-billion.

A Virginia Tech study from last summer found that 40.1% of water samples from Flint homes contained over 5 parts-per-billion of lead. The researchers also reported that the 90th percentile lead level in Flint homes was 25.2 parts-per-billion — well over the EPA's reccomendation.

A study by a local pediatrician also found that the proportion of Flint children under the age of five with elevated lead blood levels had doubled since the city switched its water sources.

The NRDC asserts that, since April 2014, officials in the city of Flint and the state of Michigan failed to adequately monitor and control for lead in Flint’s drinking water, and maintain a program to assist Michigan schools with lead testing and remediation — amounting to clear violations of the federal Safe Drinking Water Act.

APMichigan Governor Rick Snyder

If government officials, including Governor Rick Snyder and Department of Environmental Quality Dan Snyder don't address the violations within the next sixty days, they'll be sued in a federal court.

Business Insider has reached out to the representative from the city of Flint and the state of Michigan and will update the story when we recieve a comment.

"We’re focused on moving forward and ensuring public health and clean, safe drinking water. The governor has outlined a detailed multiple step action plan for both immediate, mid and long term. He has also appointed a task force doing a very important job of reviewing all past actions. They are a bipartisan group of people of the highest integrity, experts in their fields and widely respected who are going to do a very thorough, objective review."

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http://www.mlive.com/news/flint/index.ssf/2015/11/howard_croft_flint_official_re.html

By Ron Fonger | rfonger1@mlive.com
on November 16, 2015 at 7:12 PM, updated November 17, 2015 at 10:04 AM

Flint Department of Public Works Director Howard Croft is shown in this Flint Journal file photo.Flint Journal file photo

FLINT, MI — Howard Croft, the department head responsible for oversight of Flint water operations, has resigned his position effective immediately.

Croft, in a letter to City Administrator Natasha Henderson on Monday, Nov. 16, said he is leaving his position at the city Department of Public Works to regain public trust following a lead-in-water crisis.

"It is with deep sadness that I tender my immediate resignation" as public works director, the letter says. "With the city engaged in transition and working to regain public trust, I believe that now is the right time for me to step down from this position."

Croft, a lifelong resident of Flint, has been in charge of the city's DPW operations since he was appointed to the position by former emergency manager Mike Brown in December 2011.

After his hiring, Croft said he would emphasize responsibility among those who worked for him.

"The one word we are going to try and push for is accountability," Croft said nearly four years ago. "That goes for every employee, accountability for every employee."

The DPW is responsible for Flint's utilities and transportation divisions, but Croft's oversight of city-owned facilities, specifically the drinking water division, put him in the center of what has become a public health emergency because of rising levels of lead in city drinking water.

The city began using the Flint River as its source of drinking water in April 2014, and Croft defended the quality and safety of the water even as the city struggled with bacteria, total trihalomethanes (TTHM) and lead levels.

Faced with mounting evidence of rising lead levels in Flint's drinking water, the city abandoned its use of the river last month, reconnecting to the Detroit water system until the completion of the Karegnondi Water Authority pipeline, which is expected in 2016.

Croft inherited an aging water distribution system that was built to serve twice as many residents as it does now and which was prone to transmission line breaks, leaks and broken valves.

In an email to Mayor Karen Weaver and the City Council, Henderson said Croft will consult the city on an interim basis "as we recruit for a new public works director to make this as seamless as possible."

"Mr. Croft will be missed as he transitions from the director position. ... He has made valuable contributions during his time with the city, and I truly thank him for his service," Henderson's email says.

Weaver said the city will "do what we need to do to have a qualified person in place" to replace Croft.

"I definitely will be having input," she said.

Sworn into office just last week after her election Nov. 3, Weaver has said she expects Henderson to respect her wishes on executive appointments.

Although the city charter gives the mayor the authority to appoint an executive staff, an emergency manager order signed in April transferred that authority to the city administrator.

Croft's letter of resignation says he made every effort to serve with honesty, dignity and integrity.

"I am proud of the many accomplishments that I have been a part of over the years," including assisting in the development of a 50-year master plan, a multi-year capital improvement plan and a prioritized plan to deal with aging infrastructure.

Croft praised DPW employees, "who by no fault of their own have encountered drastic changes in staffing, equipment, and work environment, yet they continue to provide daily services to the absolute best of their ability."

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http://michiganradio.org/post/flint-water-crisis-prompts-more-scrutiny-federal-drinking-water-rules

By Rebecca Williams • Nov 16, 2015

ShareTwitter Facebook Google+ Email

Researchers at Virginia Tech received samples of Flint water (both clear and discolored) from residents.

Credit Flint Water Study / Facebook

The Flint water crisis will be part of a public meeting this week in Virginia about federal rules on lead.

The National Drinking Water Advisory Council is holding meetings tomorrow through Thursday to develop recommendations for the Environmental Protection Agency.

The EPA is working on changing its rules on lead and copper in water. Those rules have been scrutinized lately because of Flint's problems with lead in drinking water.

Congressman Dan Kildee (D-Flint) will testify.

Lee Anne Walters also plans to speak at the meeting. Her four-year-old son had elevated lead levels in his blood after Flint started using the Flint River as a water source.

"I want the loopholes for the lead and copper rule out. I'm not going to stop until that happens."

Walters and other critics say there are problems with the rules that can skew the outcome of water tests.

A spokesman with the Michigan Department of Environmental Quality says the agency is reviewing its water testing protocols.

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http://www.mlive.com/news/flint/index.ssf/2015/11/class_action_lawsuit_claims_sn.html

By Ron Fonger | rfonger1@mlive.com
on November 16, 2015 at 4:24 PM, updated November 16, 2015 at 7:22 PM

FLINT -- City and state officials supplied highly toxic water to Flint residents solely because it was the cheaper option, attorneys seeking a class action lawsuit claimed in a news conference today, Nov. 16.

The lawsuit, filed in U.S. District Court in Detroit on Friday, Nov. 13, claims 14 officials, including Gov. Rick Snyder and former mayor Dayne Walling, are responsible for replacing safe water in Flint with water that was "dangerous, unsafe and ... inadequately treated."

The lawsuit seeks an order certifying it as a class action, an order declaring the conduct of the 14 officials unconstitutional, an order that includes the establishment of a medical monitoring fund, appointment of a monitor to oversee Flint water operations, compensatory and punitive damages, and attorney fees.

"Defendants' conduct in exposing Flint residents to toxic water was so egregious and so outrageous that it shocks the conscience ...," the lawsuit says. "For more than 18 months, state and local government officials ignored irrefutable evidence that the water pumped from the Flint River exposed (users) to extreme toxicity ..."

Sara Wurfel, a spokeswoman for Snyder, said state officials have not been served with the lawsuit and would not comment on details of it.

"What (we) would say is that we're focused on moving forward and ensuring public health and clean, safe drinking water," Wurfel said in an email to The Flint Journal-MLive. "The governor has outlined a detailed multiple step action plan for both immediate, mid and long term.

"He has also appointed a task force doing a very important job of reviewing all past actions. They are a bipartisan group of people of the highest integrity, experts in their fields and widely respected who are going to do a very thorough, objective review."

Residents and their attorneys said, however, that they've suffered health and property damages since the city changed its water source to the Flint River in April 2014 without proper treatment to make it less corrosive.

Water samples collected by the city and tested by the state showed a spike in lead level immediately after the change, and independent testing by researchers from Virginia Tech university showed even higher lead levels -- beyond limits that trigger action by the U.S. Environmental Protection Agency.

William Goodman, a partner in Goodman & Hurwitz, one of three law firms representing Flint families in the U.S. District Court lawsuit, said state and local officials are responsible for lower property values, damage to plumbing, and injuries ranging from hair loss to neurological disorders because of the water they drank, cooked with and bathed in.

"Governmental immunity does not trump the Constitution of the United States," Goodman said "We believe we are in a very powerful position, (and) we should prevail."

Also in the 30-page lawsuit:

State officials have been sued because they made the final decision that "deliberately created, increased and prolonged the hazards, threats and dangers that arose by replacing of a safe drinking, washing and bathing water with a highly toxic alternative."

Two former Flint emergency managers -- Darnell Earley and Jerry Ambrose -- are named as defendants.

State and local officials were "fully aware that the required and necessary anti-corrosive was not being used" to treat Flint River water -- something experts have said caused lead to leach from underground pipes and home plumbing.

The number of injured individuals who have been harmed by exposure to Flint water numbers "tens of thousands."

Michael Pitt, a partner in Pitt McGehee Palmer & Rivers, another of the law firms involved in the case, said state and city officials have shown themselves unwilling to act until they have been forced.

"When the government creates the danger, they become responsible ... It's the government that created this ...," Pitts said. "The state has been in denial about this. It's going to take this lawsuit to shake them out of their stupor."

Flint residents who have filed the lawsuit are Melissa and Michael Mays, Jacqueline and John Pemberton, Elnora Carthan and Rhonda Kelso.

In addition to Snyder, Walling and the emergency managers, the lawsuit names defendants Dan Wyant, director of the state Department of Environmental Quality; Liane Shekter, Adam Rosenthal, Stephen Busch, Patrick Cook, Michael Prysby and Brad Wurfel, all of the DEQ; Flint Department of Public Works Director Howard Croft, Flint Utilities Administrator Michael Glasgow and Daughtery Johnson, former city utilities administrator.

The potential class action lawsuit was filed just three days before an unrelated notice of intent to sue, which was filed today by the American Civil Liberties Union of Michigan, the Natural Resources Defense Council, the Concerned Pastors for Social Action and Flint resident Melissa Mays.

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http://www.huffingtonpost.com/entry/flint-michigan-water-crisis_5649f574e4b08cda34899a94

A "short-sighted effort to save a buck" poisoned the city's water.

Arthur Delaney Senior Reporter, The Huffington Post

Posted: 11/16/2015 12:28 PM EST | Edited: 11/16/2015 05:18 PM EST

Residents of Flint, Michigan, are suing over dangerous lead levels in their tap water resulting from state and local efforts to save money by switching the city's water supply last year.

"In their short-sighted effort to save a buck, the leaders who were supposed to be protecting Flint's citizens instead left them exposed to dangerously high levels of lead contamination," Michael Steinberg, legal director for the ACLU of Michigan, said in a release. The ACLU, along with the National Resources Defense Council, a national nonprofit that advocates on environmental issues, on Monday filed a notice of intent to sue the city and state.

Several Flint families last week filed a separate lawsuit against local and state governments seeking class-action status in federal court. Lead poisoning, whether from water or paint chips, can cause physical and permanent neurological harm. Children are particularly vulnerable.

Last year, Flint officials and an emergency manager appointed by Michigan Gov. Rick Snyder (R) switched the city's water supply from Detroit's system to the Flint River. The Michigan Department of Environmental Quality admitted last month that it had failed to implement proper corrosion controls, and the new water wound up leaching dangerous amounts of lead from city pipes.

"Not only were the city and state's actions dangerous and misguided, they were illegal, too," Steinberg said.

Despite complaints from residents and reports that the water had high lead levels, local and state officials denied there was a problem -- until a local pediatrician documented a spike in blood lead levels among Flint children, prompting the city to switch back to Detroit's water.

"This action is about holding the government accountable for failing to protect the public health of an entire community," Anjali Waikar, an attorney with the NRDC, said in a statement. "This case also highlights a troubling trend in which the government is willing to turn a blind eye when it comes to protecting the lives of poor, black people."

The NRDC and ACLU said the state is still failing to follow water-testing protocols set forth by the federal Safe Drinking Water Act, and that they'll file their suit in 60 days if Snyder and other officials don't remedy these violations.

Sara Wurfel, a spokeswoman for Snyder, declined to comment on the lawsuits but defended the governor's response to the crisis, noting he has appointed a task force to figure what went wrong.

"The governor has outlined a detailed multiple-step action plan for both immediate, mid and long term," Wurfel said. "He has also appointed a task force doing a very important job of reviewing all past actions. They are a bipartisan group of people of the highest integrity, experts in their fields and widely respected who are going to do a very thorough, objective review."

Marc Edwards, a Virginia Tech University civil engineering professor, helped expose the high lead levels in Flint's water.

"My heart goes out them, and I wish them the best in trying to hold agencies accountable for the irreparable damage done to Flint's innocent children," Edwards said, noting that similar efforts to hold officials in Washington, D.C., accountable for toxic water have not yet succeeded.

HuffPost readers: Do you live in Flint? Do you have children younger than 6 and concerns about the water? Tell us about it -- email arthur@huffingtonpost.com. Please include your phone number if you're willing to be interviewed.

This article has been updated to include comment from Snyder's office.

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http://www.detroitnews.com/story/news/local/michigan/2015/11/17/flint-utility-official-resigns-amid-water-controversy/75920332/

Jim Lynch, The Detroit News 9:50 a.m. EST November 17, 2015

Flint's top utility official has resigned his post as the city continues to deal with fall-out from its drinking water crisis.

A city spokesman confirmed Howard Croft has stepped down as director of public works this week. It's a post he has held since late-2011, involving oversight of Flint's water treatment and distribution.

The quality of the drinking water has been a controversial issue since the city began drawing it from the Flint River in the spring of 2014 as a cost-saving measure. A failure to treat that water with proper corrosion controls, coupled with aging lead-connection lines around the city, resulted in widespread lead contamination.

"(Croft) believed it was the right time for him to step down due to the issues with water," said Jason Lorenz, Flint's public information officer.

City and state officials linked to the switch from water provided by the Detroit Water and Sewerage Department to the Flint River have been under intense scrutiny since the decision was made. Two lawsuits targeting those officials over their handling of the situation were filed this week.

"This action is about holding the government accountable for failing to protect the public health of an entire community," said Anjali Waikar, an attorney at the Natural Resources Defense Council, a plaintiff in one of the suits. "This case also highlights a troubling trend in which the government is willing to cut costs at the expense of its most vulnerable citizens."

Lorenz declined to comment on the lawsuits Tuesday, saying the city had not yet been served in the matters.

JLynch@detroitnews.com

(313) 222-2034

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http://michiganradio.org/post/attorneys-discuss-flint-water-class-action-lawsuit

By Steve Carmody • 20 hours ago

ShareTwitter Facebook Google+ Email

Attorneys are hoping to sign up tens of thousands of Flint water customers for a class action lawsuit against the city and state.

"They are well protected…but not absolutely," says attorney Michael Pitt.

The suit was filed Friday on behalf of four families.

Attorney Trachelle Young says they are seeking damages for people suffering health problems because of Flint's problem-plagued drinking water.

"I don't think the community has any idea how truly extensive the damages are," says Young.

For 18 months, starting in April of 2014, the city of Flint got its tap water from its namesake river. But shortly after the switch, Flint residents complained about the water's taste, smell, and appearance.

People say the water burned their skin and made their hair fall out. There were also E coli outbreaks and higher than acceptable levels of chemicals in the water.

"I don't think the community has any idea how truly extensive the damages are," says attorney Trachelle Young.

Tests have also shown high levels of lead in the water.

Researchers from Virginia Tech blame the lead problem on the corrosive Flint River.

Water from the river apparently damaged lead and iron pipes in Flint's water system.

The city switched back to Detroit water last month, but people continue to claim health problems.

The class action lawsuit does not seek specific monetary damages, but it could cost tens of millions of dollars.

Michael Pitt is part of the legal team handling the class action lawsuit. His legal firm has handled class action suits against the Michigan Department of Corrections in the past.

Pitt concedes it's difficult to sue the government because of immunity provisions in the law.

"They are well protected…but not absolutely," says Pitt.

A class action lawsuit may be a long process.

The suit filed last week will likely not be certified by the federal court as a "class action" until next year.

After that, there will likely be a protracted legal fight.

Still, the attorneys handling the case are optimistic their clients will win, either in the courts, or by the city and state governments accepting liability.

A Flint city spokesman had no comment on the lawsuit.

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http://msutoday.msu.edu/news/2015/msu-to-host-panel-on-flint-water-crisis/

Contact(s): Galena Ostipow

From 6 to 8 p.m. Nov. 18 in 303 International Center, Michigan State University will host a panel to discuss the Flint water crisis, featuring experts in environmental history and water access and quality, along with two of the major Flint community organizers advocating safe water for Flint residents.

In March 2013, the Flint city council voted to switch from Detroit water to join the Karegnondi Water Authority, a pipeline project designed to deliver water from Lake Huron. When that project was delayed, the Flint River was designated as the new water source.

The switch was completed in April 2014, and serious questions about the water's safety began to surface. Following resistance from city and state representatives to address the issue, activists Melissa Mays and Claire McClinton helped lead the movement to advocate for EPA intervention and safe drinking water for Flint residents.

The panel will include:

Jennifer Carrera (Department of Sociology/Environmental Science and Policy Program) is part of the MSU campus-wide Global Water Initiative. Her research focuses on environmental justice issues of access to clean water and sanitation in low-income communities domestically and internationally.

Sara Fingal (Department of History/Lyman Briggs College) specializes in environmental history, 20th century U.S. history, the history of coastal zone management, water resources, environmental politics, policy and planning and U.S. social movements.

Susan Masten (Department of Civil and Environmental Engineering) researches chemical agents to treat soil and water contaminated with hazardous organic chemicals. She has been working extensively to develop water treatment technologies that are more effective and suitable for use in decentralized water treatment systems. She's currently conducting research on Flint water samples for disinfection byproducts.

Melissa Mays is a founder of the citizen advocacy group Water You Fighting For. In August of 2015, WYFF distributed 300 test kits to households and worked with a volunteer team of research scientists and graduate students to determine if there were toxic lead concentrations in the city water supply.

Claire McClinton is a community activist advocating for safe drinking water for Flint residents. She works with the Democracy Defense League, the Michigan Poverty Roundtable and Stand Up for Democracy. Along with Mays and other activists, she petitioned the EPA in October 2015 to ensure safe water for Flint residents.

The event is co-sponsored by the Center for Gender in Global Context, Gender Justice and Environmental Change, Department of Community Sustainability, Lyman Briggs College, Environmental Science and Policy Program and Project 60/50 at MSU.

For more information on the panel discussion, contact the GenCen office at (517) 353-5040 or email gencen@msu.edu.

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http://michiganradio.org/post/flints-public-works-director-resigns

By Steve Carmody • 14 hours ago

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Flint's public works director has resigned.

Howard Croft played a highly visible role in the city's drinking water crisis.

Appointed by Flint's emergency manager in 2011, Croft oversaw the city's switch from Detroit water to the Flint River, and back again after serious problems developed from the river water.

During the 18 months the city of Flint drew its drinking water from its namesake river, Howard Croft often received the brunt of the public's anger. Croft was the point man for explaining why the city's drinking water was safe or was improving.

As the city's drinking water crisis deepened, Croft stressed the importance of addressing the problem in people's homes.

"We need to get out there and test," Croft said. "We need to get out there and find out where there is a concern."

Croft becomes the latest city official whose tenure was marked by the city's drinking water crisis to depart city hall.

Earlier this month, voters turned out incumbent Mayor Dayne Walling. Many voters cited Walling's role in the switch to the Flint River as their reason to voting for his opponent. Karen Weaver was sworn in a week ago as Flint's new mayor.

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http://michiganradio.org/post/states-instructions-sampling-drinking-water-lead-not-best-practice

By Rebecca Williams • 2 hours ago

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Listen to today's Environment Report.

The Flint water crisis has uncovered all kinds of details about how cities test the safety of their drinking water.

In particular, critics say the state is giving bad advice on testing drinking water for lead.

The state of Michigan tells cities to do something called pre-flushing.

The instructions tell people to turn on their cold water tap and let it run for five minutes (that's the pre-flushing part). Then, people are supposed to wait six hours before taking their water sample.

Critics say pre-flushing is one of many practices used to skirt the intent of the EPA's lead and copper rule.

Lee Anne Walters wants to see the rules changed. Her four-year-old son had elevated lead levels in his blood after Flint started using the Flint River as a water source.

"I want the loopholes for the lead and copper rule out. I'm not going to stop until that happens," she says.

She's speaking at a national meeting this week in Virginia about proposed revisions to the lead and copper rule.

The trouble with pre-flushing

Marc Edwards is a professor at Virginia Tech University and an expert on water treatment. He says a lot of cities around the country do this pre-flushing when they test drinking water for lead. But he argues they should not.

"It cleans the pipe of both soluble lead and also to the extent there's little lead particles in the wall of the pipe they'll be swept out of the pipe so they're not present when you sample the next day," he says.

"Who sits around and flushes their kitchen tap every night for five minutes before they go to bed? Nobody."

He says that means you can end up skewing your lead sample results lower, and make it appear that you have less lead in your drinking water than you actually do.

"Why add this complexity on and tell people to do something they don't normally do? Who sits around and flushes their kitchen tap every night for five minutes before they go to bed? Nobody."

Here's the thing about pre-flushing...

It's not banned under the federal lead and copper rule, but the EPA says cities should not do it.

Peter Grevatt directs the EPA's Office of Groundwater and Drinking Water.

"The idea of pre-flushing, typically that's something that would not be done. It's not prohibited under the rule, but at the same time we don't view it as best practice."

Grevatt says they to want work with states and water systems so they understand this.

This June, an EPA employee expressed concern in a internal memo obtained by the ACLU that this practice was being used to collect water samples in Flint.

In the memo, EPA Regulations Manager Miguel Del Toral wrote that pre-flushing has been shown to "result in the minimization of lead capture and significant underestimation of lead levels in the drinking water."

He continues:

"Although this practice is not specifically prohibited by the LCR, it negates the intent of the rule to collect compliance samples under 'worst-case' conditions, which is necessary for statistical validity given the small number of samples collected for lead and copper under the LCR. This is a serious concern as the compliance sampling results which are reported by the City of Flint to residents could provide a false sense of security to the residents of Flint regarding lead levels in the water and may result in residents not taking necessary precautions to protect their families from lead in the drinking water."

Del Toral wrote that he raised this concern with the Michigan Department of Environmental Quality, and "the MDEQ has indicated that this practice is not prohibited by the LCR and continues to retain the 'pre-flushing' recommendation in their lead compliance sampling guidance to public water systems in Michigan."

Virginia Tech professor Marc Edwards says he joined Del Toral in expressing concern to the MDEQ about the agency's testing guidelines.

“They were told point blank by Miguel Del Toral and myself earlier this year that the effect of the pre-flush was to hide the lead and it was recommended that they stop it. And they put in writing that they were not going to do that and they had no interest in doing that.”

Edwards is referring to documents Virginia Tech obtained from the MDEQ under the Freedom of Information Act. Notes from a July 21, 2015 conference call between the EPA and MDEQ say:

“MDEQ is not interested in changing its position on pre-flushing until new regulations come out. They also pointed out that the pre-flushing instructions are not requirements, but suggestions. The Michigan pre-flushing instructions were designed as a way to ensure that sampled faucets were not stagnant for an excessive period of time beyond the targeted 6 hour (i.e. rarely used faucets or when a homeowner has been gone for an extended period of time).”

That last statement about how long water can be stagnant in the pipes before sampling is also a point of contention.

An official EPA memo from 2004 says there's not a limit:

The LCR also defines a proper sample as a first draw sample, 1 liter in volume, that is taken after water has been standing in plumbing for at least six hours, and from an interior tap typically used for consumption - cold water kitchen or bathroom sink tap in residences. [40 CFR 141.86(b)(2)] There is no outer limit on standing time.

The DEQ did not provide anyone for an interview for this story.

In an email, DEQ spokesman Brad Wurfel said, "We're reviewing the testing protocol as part of our internal review. When we've got something to announce, I'll let you know."

It’s important to note, this goes beyond Flint.

A number of cities around Michigan follow the state's pre-flushing guidelines.

A number of cities around Michigan follow the state’s pre-flushing guidelines. Ann Arbor, East Lansing and Detroit all said they tell people to flush their tap water for five minutes.

But the City of Flint has recently changed the way it tells residents to sample water for lead.

Mike Glasgow is Flint’s Utilities Administrator. He says a few weeks ago, they removed the pre-flush recommendation from the instruction sheet they hand out to residents who want to test their water for lead.

“We removed the pre-flush after recommendations from experts in the field and a few of EPA’s researchers, so we’re going to err on the side of caution while we remove the flushing,” he says.

Glasgow says they’ve asked the MDEQ to let them keep their new "no-flush" method for the next round of official water testing for compliance with the lead and copper rule.

He says he’s waiting to hear how state officials respond.

Mark Brush and Lindsey Smith contributed reporting to this story.

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http://www.bna.com/michigan-leaders-fire-b57982063610/

Michigan Gov. Rick Snyder (R) and several state officials are facing two lawsuits--and a barrage of criticism--stemming from their failure to take timely action when Flint residents complained that murky, foul-smelling water was coming out of their faucets after a switch away from the Detroit water system in April 2014.

The city, operating under a Snyder-appointed emergency manager at the time, made the switch to the Flint River as a water source as a way to save money. Yet the corrosive river water wasn't treated with anti-corrosive agents, and lead soon found its way into the city's water system.

Residents' complaints weren't addressed--in fact, state officials publicly stated that the water was safe -- until Virginia Polytechnic Institute researchers tested the water and found lead, and a pediatrician at a local hospital released a study showing elevated lead levels in the blood of city schoolchildren.

City residents have filed a class action lawsuit in federal court, and the Natural Resources Defense Council announced its intent to sue for violations of the Safe Drinking Water Act. Snyder has appointed a task force to look into the matter, and the Environmental Protection Agency is also investigating.

NRDC attorney Anjali Waikar gives the Flint community credit for bringing the issue to the forefront.

By Nora Macaluso

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To: Nowotarski, Allison[nowotarski.allison@epa.gov]
Cc: Rowan, Anne[rowan.anne@epa.gov]; Hyde, Tinka[hyde.tinka@epa.gov]
From: Poy, Thomas
Sent: Tue 11/17/2015 7:49:03 PM
Subject: RE: ACTION: Draft Flint web page for review

Allison: Here is the modified language.

•□□□□□□□ EPA recommends that **all residents, especially pregnant women, infants, and children, use only bottled water or cold water that is filtered through a water filter certified to remove 'total lead' for drinking, cooking, and making baby formula until further notice**. Normally, EPA recommends running your water when it has not been used for long periods of time. However, the protective scales within the service lines are still being built up with Flint's return to water from the Great Lakes Water Authority and the stability of this growing scale is hard to know throughout the water system.

Tom Poy

Chief, Ground Water and Drinking Water Branch

USEPA - Region 5

(312) 886-5991

From: Hyde, Tinka
Sent: Monday, November 16, 2015 5:56 PM
To: Poy, Thomas <poy.thomas@epa.gov>
Subject: ACTION: Draft Flint web page for review

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From: Nowotarski, Allison
Sent: Monday, November 16, 2015 4:46 PM
To: Hedman, Susan
Cc: Rowan, Anne; Kelley, Jeff; Hyde, Tinka
Subject: Draft Flint web page for review

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1) Log in with your LAN ID and password at: https://wcms.epa.gov/user.

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Please note- the photos are temporary placeholders. Let me know if you have any trouble.

Thanks,

Allison Nowotarski

Public Affairs Specialist

U.S. EPA Region 5

(312) 353-0967

To: Poy, Thomas[poy.thomas@epa.gov]
From: Hyde, Tinka
Sent: Tue 11/17/2015 8:23:36 PM
Subject: Re: ACTION: Draft Flint web page for review

Thanks Tom

Sent from my iPhone

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Cc: Hyde, Tinka[hyde.tinka@epa.gov]
From: Rowan, Anne
Sent: Tue 11/17/2015 9:18:11 PM
Subject: RE: ACTION: Draft Flint web page for review

Yes, let's change that – good point!

Anne Rowan, Chief

Public Affairs Section

Office of External Communications

U.S. EPA Region 5, Chicago

rowan.anne@epa.gov

312-353-9391

From: Poy, Thomas
Sent: Tuesday, November 17, 2015 3:14 PM
To: Nowotarski, Allison <nowotarski.allison@epa.gov>
Cc: Rowan, Anne <rowan.anne@epa.gov>; Hyde, Tinka <hyde.tinka@epa.gov>
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From: Nowotarski, Allison
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To: Poy, Thomas <poy.thomas@epa.gov>
Cc: Rowan, Anne <rowan.anne@epa.gov>; Hyde, Tinka <hyde.tinka@epa.gov>
Subject: RE: ACTION: Draft Flint web page for review

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Sent: Tuesday, November 17, 2015 1:49 PM
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Cc: Hyde, Tinka[hyde.tinka@epa.gov]
From: Nowotarski, Allison
Sent: Tue 11/17/2015 9:35:02 PM
Subject: RE: ACTION: Draft Flint web page for review
Advice to Flint Residents About Lead in Drinking Water _ update.pdf

The language has been updated. We also moved the recommendations for pregnant women to the top of the page.

From: Rowan, Anne
Sent: Tuesday, November 17, 2015 3:18 PM
To: Poy, Thomas <poy.thomas@epa.gov>; Nowotarski, Allison <nowotarski.allison@epa.gov>
Cc: Hyde, Tinka <hyde.tinka@epa.gov>
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Allison Nowotarski

Public Affairs Specialist

U.S. EPA Region 5

(312) 353-0967

Menu

Admin Info

EPA in Michigan

Advice to Flint Residents About Lead in Drinking Water

EPA recommends that all residents, especially pregnant women, infants, and children, use only cold water that is filtered through a water filter certified to remove 'total lead' or bottled water for drinking, cooking, and making baby formula until further notice. Normally, EPA recommends running your water when it has not been used for long periods of time. However, the protective scales within the service lines are still being built up with Flint's return to water from the Great Lakes Water Authority and the stability of this growing scale is hard to know throughout the water system.

EPA and the Centers for Disease Control and Prevention believe there is no safe level of lead exposure. Lead is harmful to health, especially for children. While paint, dust, and soil are the most common sources of lead, drinking water can contribute 20 to 40 percent of an infant's lead exposure.

Flint residents concerned about lead in their drinking water have a number of options to help reduce the amount of lead in their drinking water.

- Have your water tested. Flint residents can have their water tested for free by calling the City of Flint Water Plant at (810) 787-6537, then pressing 1. Flint residents may also email flintwater@cityofflint.com.
- Be aware of any work that could disturb your lead service line, such as water main replacement, lead service line repair or replacement of part of the service line.
- On a regular basis clean and remove any debris from faucet aerators to clear out any particles of lead that may become trapped in the aerator.
- Purchase lead-free faucets and plumbing components.
- Remove the entire lead service line.

How do I know if I have a lead service line?

What do lead service lines look like?

Cleaning aerators

Collecting water samples

Last updated on November 17, 2015

To: Hedman, Susan[hedman.susan@epa.gov]
Cc: Kelley, Jeff[kelley.jeff@epa.gov]; Deamer, Eileen[deamer.eileen@epa.gov]; Fortin, Denise[Fortin.Denise@epa.gov]
From: Rowan, Anne
Sent: Tue 11/17/2015 10:22:52 PM
Subject: Just confirming your revisions

Susan, please double-check the current version of **Flint Corrosion Control Treatment – Key Dates** to ensure I've made the revisions as directed. If not, please let me know and I'll correct it. I haven't heard back from Liz yet.

On July 21, 2015, the EPA Region 5 Water Division Director convened a conference call with MDEQ. During the call MDEQ reported on the second 6-month round of Flint tap water sampling, which was conducted from 1/1/2015 – 6/30/2015. The 90th percentile lead level for the second round of sampling was 11 ppb. In light of these results, MDEQ agreed to require Flint to implement corrosion control as soon as possible. EPA Region 5 again offered to provide EPA corrosion control experts to assist MDEQ.

On November 3, 2015, the EPA Office of Ground Water and Drinking Water issued an interpretive memo which clarifies the Lead and Copper Rule and sets forth steps that the rule requires large public water systems (such as the City of Flint) and primacy agencies (such as MDEQ) to take in the future "to ensure that appropriate corrosion control treatment is maintained at all times."

Anne Rowan, Chief

Public Affairs Section

Office of External Communications

U.S. EPA Region 5, Chicago

rowan.anne@epa.gov

312-353-9391

To: Hedman, Susan[hedman.susan@epa.gov]; Rowan, Anne[rowan.anne@epa.gov]
Cc: Deamer, Eileen[deamer.eileen@epa.gov]; Fortin, Denise[Fortin.Denise@epa.gov]
From: Kelley, Jeff
Sent: Tue 11/17/2015 10:55:54 PM
Subject: RE: Just confirming your revisions

Anne and I are available.

Jeff Kelley
Director, Office of External Communications
U.S. EPA Region 5
ph: 312-353-1159

From: Hedman, Susan
Sent: Tuesday, November 17, 2015 4:55 PM
To: Rowan, Anne <rowan.anne@epa.gov>
Cc: Kelley, Jeff <kelley.jeff@epa.gov>; Deamer, Eileen <deamer.eileen@epa.gov>; Fortin, Denise <Fortin.Denise@epa.gov>
Subject: Re: Just confirming your revisions

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Sent from my iPhone

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312-353-9391

To: Hedman, Susan[hedman.susan@epa.gov]
Cc: Kelley, Jeff[kelley.jeff@epa.gov]; Deamer, Eileen[deamer.eileen@epa.gov]; Fortin, Denise[Fortin.Denise@epa.gov]
From: Rowan, Anne
Sent: Tue 11/17/2015 10:56:31 PM
Subject: RE: Just confirming your revisions

yes

Anne Rowan, Chief

Public Affairs Section

Office of External Communications

U.S. EPA Region 5, Chicago

rowan.anne@epa.gov

312-353-9391

From: Hedman, Susan
Sent: Tuesday, November 17, 2015 4:55 PM
To: Rowan, Anne <rowan.anne@epa.gov>
Cc: Kelley, Jeff <kelley.jeff@epa.gov>; Deamer, Eileen <deamer.eileen@epa.gov>; Fortin, Denise <Fortin.Denise@epa.gov>
Subject: Re: Just confirming your revisions

yes -- that' right. Are you available to talk now?

Sent from my iPhone

On Nov 17, 2015, at 4:22 PM, Rowan, Anne <rowan.anne@epa.gov> wrote:

> Susan, please double-check the current version of **Flint Corrosion Control Treatment – Key Dates** to ensure I've made the revisions as directed. If not, please let me know and I'll correct it. I haven't heard back from Liz yet.
>
> ---

On July 21, 2015, the EPA Region 5 Water Division Director convened a conference call with MDEQ. During the call MDEQ reported on the second 6-month round of Flint tap water sampling, which was conducted from 1/1/2015 – 6/30/2015. The 90th percentile lead level for the second round of sampling was 11 ppb. In light of these results, MDEQ agreed to require Flint to implement corrosion control as soon as possible. EPA Region 5 again offered to provide EPA corrosion control experts to assist MDEQ.

On November 3, 2015, the EPA Office of Ground Water and Drinking Water issued an interpretive memo which clarifies the Lead and Copper Rule and sets forth steps that the rule requires large public water systems (such as the City of Flint) and primacy agencies (such as MDEQ) to take in the future "to ensure that appropriate corrosion control treatment is maintained at all times."

Anne Rowan, Chief

Public Affairs Section

Office of External Communications

U.S. EPA Region 5, Chicago

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312-353-9391

To: Hedman, Susan[hedman.susan@epa.gov]
Cc: Kelley, Jeff[kelley.jeff@epa.gov]; Deamer, Eileen[deamer.eileen@epa.gov]; Fortin, Denise[Fortin.Denise@epa.gov]
From: Rowan, Anne
Sent: Wed 11/18/2015 12:52:10 AM
Subject: update on conference call

Susan, Liz isn't available for a conference call tonight.

We've sent Liz and Nichole a draft Q&A and I just sent you Liz's revisions to **Flint Corrosion Control Treatment –Key Dates.**

Anne Rowan, Chief

Public Affairs Section

Office of External Communications

U.S. EPA Region 5, Chicago

rowan.anne@epa.gov

312-353-9391

To: Suero, Maryann[suero.maryann@epa.gov]; Poy, Thomas[poy.thomas@epa.gov]
Cc: Klevs, Mardi[klevs.mardi@epa.gov]; Master, Edward[master.edward@epa.gov]; Guerriero, Margaret[guerriero.margaret@epa.gov]; Hyde, Tinka[hyde.tinka@epa.gov]
From: Deltoral, Miguel
Sent: Wed 11/18/2015 11:07:33 AM
Subject: RE: QUESTION : PEHSU/ Amer Acad Pediatrics Requesting Guidance for early childhood/Head Start centers and their families re: Lead in Flint, MI
image003.jpg

All - my recommendation on this would be the same as what we are providing on our website for flint...pregnant women, infants and children should not drink the water unless it is filtered using a water filter that is certified to remove 'total lead' [option 1: further notice] or [option 2: an assessment can be conducted on the effectiveness of flushing under the current conditions].

Maryann - below is the rationale for why this is different from what we would typically recommend...

In most systems with stable water qualities and stable treatment, such as here in Chicago, flushing for 3 to 5 minutes can be an effective way to reduce lead levels. However, where the water quality and treatment have changed significantly, as is the case with the City of Flint, flushing advice may not be appropriate as particles containing high concentrations of lead can be released sporadically more easily at any time into the water due to the instability of these lead-bearing scales.

Even though corrosion control treatment has been reintroduced via Detroit, because of the absence of corrosion control over an extended period of time and the iterative water quality changes that have occurred, the stability of the scales within the service lines is currently unknown. In addition, we just received information that recent sampling at some homes conducted by the City of Flint, even with pre-flushing, has exceeded 100 ppb for lead. Lead levels this high are typically associated with the release of lead particles, consistent with the findings of previous sampling conducted in Flint.

My advice is that we should not be recommending flushing to the residents of Flint at this time due to the potential instability of the scales within the service lines and the potential for the release of particles that contain high lead. It should be recommended that pregnant women, infants and children use only bottled water or water that is filtered through a water filter that is certified to remove ‘total lead’ for drinking, cooking and making baby formula until [option 1: further notice][option 2: an assessment can be conducted on the effectiveness of flushing under the current conditions]

Miguel A. Del Toral
Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

From: Suero, Maryann
Sent: Tuesday, November 17, 2015 10:08 AM
To: Poy, Thomas
Cc: Klevs, Mardi; Master, Edward; Deltoral, Miguel; Guerriero, Margaret; Hyde, Tinka
Subject: QUESTION : PEHSU/ Amer Acad Pediatrics Requesting Guidance for early childhood/Head Start centers and their families re: Lead in Flint, MI

Tom,

I received the message below from the American Academy of Pediatrics (AAP), which serves as one of the 2 Coordinating Organizations for the network of Pediatric Environmental Health Specialty Units (PEHSU) that EPA and ATSDR co-fund.

AAP received an inquiry from Head Start in Flint, MI, related to lead in the DW. It sounds as if the Head Start organization would like informational materials or other resources they can share with their centers and families.

I'm aware of EPAs 3T's material, Testing Schools and Child Care Centers for Lead in the Drinking Water, but I'm not sure they're appropriate in this situation. I'm also familiar with EPA's general informational website for lead in DW, http://water.epa.gov/drink/info/lead/leadfactsheet.cfm

As there is an on-going concern in the area, I thought you'd be in the best position to identify existing resources and informational materials, perhaps that the City of Flint or others have developed.

As a reminder, Head Start is a federally funded child development program designed to help break the cycle of poverty by providing children, from Birth through Age 5, of low-income families with comprehensive programs to meet their educational and health needs.

I can respond to the request from AAP once I've gathered all the available resources, and would certainly share my response with you before I send it out.

Thanks, in advance, for your kind assistance in this matter!
Maryann

****
Maryann E. Suero, PhD
US EPA Region 5 (IL, IN, MI, MN, OH, WI)
Environmental Health Scientist
Children's Health Program Manager
77 W. Jackson Blvd. (LC-8J)
Chicago, IL 60604
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suero.maryann@epa.gov<mailto:suero.maryann@epa.gov>
****

From: Bernardi, Cassandra [mailto:CBernardi@aap.org]
Sent: Monday, November 16, 2015 3:18 PM
To: Suero, Maryann <suero.maryann@epa.gov>
Cc: Buchanan, Susan <sbucha3@uic.edu>; Newman, Nicholas (Nick) <Nicholas.Newman@cchmc.org>; Jerry Paulson <jerry@envirohealthdoctor.com>
Subject: Lead in Flint, MI

Hi Maryann,

I received your information from Susan Buchanan at UIC/Region 5 PEHSU.

The American Academy of Pediatrics is one of the national offices for the PEHSU program, and we've received an inquiry from the Head Start center on health regarding information on the lead in water in Flint, MI. I believe they would like to share resources with their centers and families.

The PEHSU program has a couple of fact sheets on lead for both health professionals and families, but I was wondering if you have any guidance for early childhood/Head Start centers and their families.

If this has already been addressed at the regional level, I can let them know as well.

Any help is greatly appreciated.

Best regards,

Cassie Bernardi, MPH
Program Manager, PEHSU Program - East
American Academy of Pediatrics
141 Northwest Point Blvd
Elk Grove Village, IL 60007
P: 847-434-7951
F: 847-228-7320

[https://aapms365.sharepoint.com/DOSP/DOI/PEHSU/Administrative/Logos/PEHSU%20logo%202015.jpg]<http://www.pehsu.net/index.html>

To: Bair, Rita[bair.rita@epa.gov]
Cc: Poy, Thomas[poy.thomas@epa.gov]; Anne Rowan[Rowan.Anne@epa.gov]
From: Deamer, Eileen
Sent: Wed 11/18/2015 10:49:35 PM
Subject: RE: test

Hey can we have the final documents for these activities:

- **October 30, 2015** – Task Force provides MDEQ with technical comments on Flint Corrosion Control Permit and cover letter.
- **October 23-24, 2015** – Task Force provides MDEQ with technical comments on Flint Corrosion Control Plan.

I'm going to suggest we post them on the document section of the new website. (We'll ask Bob and Susan.)

Thanks for the response. Susan has asked some of us to test pieces of the website before advertising it's live.

Thanks,

Eileen

From: Bair, Rita **On Behalf Of** FlintDrinkingwaterTaskforce
Sent: Wednesday, November 18, 2015 4:47 PM
To: Deamer, Eileen <deamer.eileen@epa.gov>
Cc: Poy, Thomas <poy.thomas@epa.gov>
Subject: RE: test

I received your test email to the FlintDrinkingwaterTaskforce email box.

From: Deamer, Eileen
Sent: Wednesday, November 18, 2015 4:25 PM
To: FlintDrinkingwaterTaskforce <FlintDrinkingwaterTaskforce@epa.gov>
Subject: test

To: Hedman, Susan[hedman.susan@epa.gov]; Kaplan, Robert[kaplan.robert@epa.gov]; Hyde, Tinka[hyde.tinka@epa.gov]
Cc: Kelley, Jeff[kelley.jeff@epa.gov]; Rowan, Anne[rowan.anne@epa.gov]; Cassell, Peter[cassell.peter@epa.gov]; Beckmann, Ronna Erin[beckmann.ronna@epa.gov]; Harrison, Melissa[Harrison.Melissa@epa.gov]; Abrams, Dan[Abrams.Dan@epa.gov]; Poy, Thomas[poy.thomas@epa.gov]; Peterson, John[peterson.john@epa.gov]; Singer, Joshua[Singer.Joshua@epa.gov]; Arcaute, Francisco[Arcaute.Francisco@epa.gov]; Cannon, Phillippa[Cannon.Phillippa@epa.gov]; Deamer, Eileen[deamer.eileen@epa.gov]; Fortin, Denise[Fortin.Denise@epa.gov]; Nowotarski, Allison[nowotarski.allison@epa.gov]; Bassler, Rachel[Bassler.Rachel@epa.gov]; Reshkin, Karen[Reshkin.Karen@epa.gov]; Loop, Travis[Loop.Travis@epa.gov]; Purchia, Liz[Purchia.Liz@epa.gov]; Henry, Timothy[henry.timothy@epa.gov]; Grantham, Nancy[Grantham.Nancy@epa.gov]; Lee, Monica[Lee.Monica@epa.gov]
From: Peterson, John
Sent: Thur 11/19/2015 3:02:48 PM
Subject: Flint Drinking Water Clips 11-19-15

FLINT DRINKING WATER CLIPS

US. EPA Region 5 – as prepared by john peterson *(ORA/OEC/PA)* on Nov. 19, 2015.

- **Flint leaders ask for tougher federal drinking water rules (michigan radio)**
- **Story of Flint water crisis, 'failure of government,' unfolds in Washington (mlive/flint journal)**
- **Flint lead problems raised at national water hearing (detroit free press)**
- **Congressman Dan Kildee Testimony Before EPA Drinking Water Advisory Council Regarding Flint Water Crisis (targeted news service)**
- **Flint doctor who exposed lead health crisis calls for change by the EPA (WJRT Flint/ABC12)**

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http://michiganradio.org/post/flint-leaders-ask-tougher-federal-drinking-water-rules#stream/0

By Virginia Gordan • 16 hours ago

Flint leaders want the U.S. Environmental Protection Agency to strengthen its regulation of public drinking water systems.

U.S. Congressman Dan Kildee, D-Flint, and seven others testified today in front of the EPA's National Drinking Water Advisory Council. The Council is developing recommendations to the EPA about changes to its rule on lead and copper in water.

Kildee said the agency needs to tighten up its regulations to make sure what happened in Flint never happens again.

"The current rule, for example, did not require rigorous testing and modeling before switching to a new water source," said Kildee. "Something that back home seems unfathomable, to go from a source that is derived from the greatest freshwater source on the planet, surface freshwater source, the Great Lakes, to the Flint River, which, if you live in my hometown at the time seemed almost like a punchline to a joke."

High lead levels were found in Flint's drinking water supply when the city switched to the Flint River for its water.

"The current rule also failed to require the city of Flint, which was under the management of the state government at the time, to add corrosion-control treatment," Kildee said.

Kildee said changes to the rule should also promote accountability and transparency to restore public trust and ensure drinking water is safe.

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http://www.mlive.com/news/flint/index.ssf/2015/11/story_of_flint_water_crisis_fa.html

By Ron Fonger on November 18, 2015 at 2:46 PM

FLINT, MI -- Elected officials and activists have delivered the story of Flint's lead in water crisis in person to the federal government, testifying Wednesday, Nov. 18, before a U.S. EPA advisory council.

"What happened in Flint is a failure of government, and we must ensure that it never happens again to Flint or any other community," U.S. Rep. Dan Kildee, D-Flint, said in opening testimony to the National Drinking Water Advisory Council. "The EPA has the ultimate responsibility to ensure that drinking water standards are followed."

In addition to Kildee, state Senate Minority Leader Jim Ananich, D-Flint; Dr. Mona Hanna-

Attisha of Hurley Medical Center; Flint resident LeeAnne Walters; and professor Marc Edwards of Virginia Tech university all testified to the council, which is considering changes in federal rules on lead in water.

Walters, whose home water registered lead levels of 104, 397 and 707 parts per billion in separate city tests, showed much higher lead levels in testing by Virginia Tech, registering from 2,500 to 13,000 parts per billion of lead.

The federal threshold for lead in water is 15 parts per billion. Walters told the advisory council that water sampling methods allowed by EPA contributed to an underestimation of the lead-in-water problem in Flint.

Sampling of water by the city and testing by the state showed the levels of lead in Flint's water were rising, but within federal guidelines for lead after the city began using the Flint River as its source of drinking water in April 2014.

But Virginia Tech researchers found much higher lead levels in their testing, and Hanna-Attisha found that the blood lead levels of infants and children here had doubled citywide since the city began using the river. The state did not require that it be treated to make it less corrosive to lead transmission pipes and plumbing.

Walters urged the advisory council to change federal rules to make states eliminate the practice of pre-flushing pipes in advance of collecting water samples and to require the use of wider-mouthed sample bottles to allow for more accurate readings of lead and copper in water.

"We were constantly being told our water was safe by the city and by the (Michigan Department of Environmental Quality), and it wasn't," Walters said. "My child and the children in Flint were not just lead-poisoned by the water. They were lead-poisoned because the EPA let the water systems lie and lots of other cities are lying now."

The advisory council advises the EPA administrator on issues concerning drinking water protection and public drinking water systems. It has been considering changes in the federal lead and copper rules.

Ananich told the group that Flint residents learned first-hand that there are problems with the current procedures for lead testing and said that realization has produced a mistrust in government.

"The fear and anger and mistrust that my community feels because of this crisis is real and is justified," Ananich said. "The system failed us -- the very people it was designed to protect.

http://www.freep.com/story/news/local/michigan/2015/11/18/flint-lead-problems-raised-national-water-hearing/75990848/

Todd Spangler, Detroit Free Press 5:15 p.m. EST November 18, 2015

WASHINGTON — U.S. Rep. Dan Kildee was among a group from Michigan testifying Wednesday before an advisory panel looking at changes to the nation's regulations on lead in drinking water, saying the current rule — as applied by state and federal agencies — failed the people of Flint after high levels of lead were detected this year.

"What happened in Flint is a failure of government," Kildee, D-Flint Township, told the National Drinking Water Advisory Council on Wednesday. "People expected that the government at multiple levels would be able to protect them ... and the government failed them."

Kildee's remarks came after months of controversy regarding Flint's water after it stopped using Detroit's water system and switched to water from the Flint River without adding corrosion controls, which may have led to higher levels of lead and has been blamed by some for health problems. He joined a group that included state Sen. Jim Ananich, D-Flint, who testified before the advisory council Wednesday about Flint's recent water problems.

In recent weeks, Flint has switched back to using Detroit water and the Michigan Department of Environmental Quality has acknowledged it should have used a different protocol in requiring corrosion control for Flint. The Environmental Protection Agency is auditing the state's drinking water program.

Kildee said, however, that as the EPA looks at rewriting its national rule for lead and copper in drinking water, it needs to fix regulations that initially failed to require Flint to add corrosion control when it switched to using Flint River water and testing methodologies for lead that could allow high lead levels to go undetected.

"The current rule, for example, did not require rigorous testing and modeling before switching to a new water source," said Kildee, who added that it seemed "almost like a punchline to a joke" to many Flint residents that they'd go from freshwater from the Great Lakes to Flint River water.

"The notion that that wouldn't trigger a much more robust analysis of what that water consisted of, and what that would mean in terms of treatment required, is almost beyond reason," Kildee told the advisory council, which is writing recommendations for the EPA for changes on the lead and copper rule.

A subgroup also advising the advisory council is presenting proposals for changing the lead and copper rule, noting that even when corrosion controls are used in city water systems, lead-bearing plumbing materials in homes can allow the metal to seep into water. The EPA does not recognize a “safe” level for lead.

In his testimony, Ananich said the EPA needs to act on the vital role in plays in ensuring that regulations are in place to protect the public health.

“Instead of a shield to protect families from exposure, in our case it appears the lead and copper rule was used as a shield to protect officials from having to admit there was a dangerous and foreseeable problem," Ananich said in a statement after the hearing. "The standard should never be: ‘What is the least we can do to fulfill our obligation.’ "

Others testifying Wednesday before the advisory council on Flint included LeeAnne Walters, a Flint resident who raised concerns about lead in the city water; Marc Edwards, a Virginia Tech professor who brought a team to Michigan to study the water supply; and Dr. Mona Hanna-Attisha, a local pediatrician who found that the blood-lead levels in children in Flint had jumped dramatically this year.

In her testimony, Hanna-Attisha told the advisory council she just recently examined a 1-year-old who showed elevated levels of lead in her blood.

"When pediatricians hear of any lead in a child we absolutely freak out," she said, noting the developmental problems that appear to be associated with high lead levels.

According to the EPA's website, infants and children who drink water containing excess lead could face delays in their physical or mental development and potentially experience deficits in attention span and learning abilities. Adults who drink water with high levels of lead may also develop kidney problems or high blood pressure.

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https://remoteworkplacedr.epa.gov/resources/doc/nb/news/,DanaInfo=.aiohr0jhGvn63nn1zPt65+159353183899F1C8?p=AWNB

WASHINGTON, Nov. 18 -- Rep. Daniel Kildee, D-Mich. (5th CD), issued the following news release:
Congressman Dan Kildee (MI-05) today testified before a meeting of the Environmental Protection Agency's (EPA) National Drinking Water Advisory Council (NDWAC) about the Flint

water crisis and changes to federal policy that can be made to promote transparency and accountability for city residents. A full transcript of his remarks, as delivered is below:

"I just want to bring to your attention the story of my hometown, Flint, Michigan. I'm sure many of you have been following the case of Flint. Water and the health of my community and the quality of water is the single most important issue right now back home. It's the one we hear about more than anything else.

"What happened in Flint is a failure of government. People expected that the government at multiple levels would be able to protect them by making sure that the water that they drink is healthy for them, and the government failed them. And I'm here to specifically address that.

"If it were not for some unsung heroes, some individuals back home that insisted and continued to press the case that the water in Flint was unsafe, it may have never have come to light. So people like Leanne Walters, who we will hear from, Dr. Marc Edwards, who provided the data that warned of this, data which was dismissed by many at multiple levels of government, and Dr. Mona Hanna-Attisha, all of whom are here, who found elevated lead levels in Flint's children.

"Again, initially that data, that really important data, was essentially dismissed by individuals who were responsible to make sure that the water in my hometown, the water which was flowing through the plumbing of people in Flint, Michigan, was safe. Thanks to them we were able to uncover this incredible health crisis, and that's what I'm here to address. I also want to acknowledge - and you'll hear from him again soon - Senator Jim Ananich, whom I've known for a long time and who has been an important part of the effort back home.

"So after months, the state of Michigan finally admitted that federal drinking water laws, including the Lead and Copper Rule, were not followed. Ultimately the EPA has responsibility to ensure that clean drinking water standards are followed.

"This new Lead and Copper Rule must have greater transparency in order to restore public confidence and protect public health and ensure the safety of drinking water. Residents deserve to know why for months the state of Michigan failed to follow federal safe drinking water laws. At my request, the EPA is conducting a complete audit of Michigan's implementation of the Lead and Copper Rule, so I hope some of the lessons learned during that audit can be included in the latest revisions of this Lead and Copper Rule.

"As I mentioned, Dr. Edwards and Dr. Mona Hanna-Attisha and other experts are testifying today and can go into more detail on the details of the necessary changes to the rule. But I want to highlight what I see as a couple of gross failures.

"The current rule, for example, did not require rigorous testing and modeling before switching to a new water source. Something that back home seems unfathomable, to go from a source that is derived from the greatest freshwater source on the planet, surface freshwater source, the Great Lakes, to the Flint River, which, if you live in my hometown at the time seemed almost like the punchline to a joke. The notion that that wouldn't trigger a much more robust analysis of what that water consisted of, and what that would mean in terms of treatment required, is almost beyond reason.

"The current rule also failed to require the city of Flint, which was under the management of the state government at the time, to add corrosion control treatment. And the testing methodologies allowed for, until very recently, the Michigan Department of Environmental Quality, as their protocol suggested, treat flushed water before supplying test samples, which obviously could obfuscate - and did in this case - the presence of lead going into those homes. So the experts can focus more on that.

"My interest is really making sure that this body understands that the state and federal officials neglected their obligations to notify the public of this health risk.

"I appreciate the efforts of this organization. The experience of the city of Flint is a real life experience and points to the importance of this rule having all the protections that you intend to put in it, and I sincerely hope that that will be the case. So thank you for giving me just a couple of minutes."

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https://remoteworkplacedr.epa.gov/home/headlines/,DanaInfo=.awxyCegi8-lmzy+Flint-doctor-who-exposed-lead-health-crisis-calls-for-change-351518641.html

Updated: Wed 6:06 PM, Nov 18, 2015 By: Kellie Meyer

WASHINGTON, D.C. (WJRT) - (11/18/15) - The doctor who helped expose Flint's problem with lead in the drinking water spent Wednesday morning talking about the issue before leaders in Washington D.C.

Dr. Mona Hanna-Attisha testified before the Environmental Protection Agency, along with a Flint mother who claims her child has lead poisoning.

Hanna-Attisha used a PowerPoint presentation to showcase how something like this can happen anywhere across the country, not only in Flint.

The U.S. Environmental Protection Agency is conducting an audit on the state of Michigan's drinking water safety.

This audit comes after the Michigan Department of Environmental Quality admitted to using the wrong protocols after it approved Flint's switch to the Flint River as a primary source of drinking water.

Representative Dan Kildee of Flint also took part in the hearings and has been an advocate for congressional change since the issue surfaced.

###

John Peterson

Writer/Editor

Public Affairs

U.S. EPA Region 5

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708-334-7594

To: Deltoral, Miguel[deltoral.miguel@epa.gov]; Crooks, Jennifer[crooks.jennifer@epa.gov]; Porter, Andrea[porter.andrea@epa.gov]; Damato, Nicholas[damato.nicholas@epa.gov]; Poy, Thomas[poy.thomas@epa.gov]; Bair, Rita[bair.rita@epa.gov]; Glowacki, Joanna[glowacki.joanna@epa.gov]; King, Carol[King.Carol@epa.gov]; Thompson, Robert[thompson.robertl@epa.gov]; Bosscher, Valerie[bosscher.valerie@epa.gov]; Kuefler, Janet[kuefler.janet@epa.gov]
From: Shoven, Heather
Sent: Fri 11/20/2015 1:47:09 PM
Subject: Inside EPA Article on this week's National Drinking Water Advisory Council Meeting -- Lead and Copper Rule Revisions

EPA Advisors Reject Push To Modify Lead Rule Recommendations

Posted: November 19, 2015

EPA's National Drinking Water Advisory Council (NDWAC) is unanimously backing a work group's recommendations on how the agency should revise its lead and copper drinking water rule despite concerns from environmental, public health and municipal advocates who say the recommendations fail to adequately protect water customers from the effects of lead poisoning.

NDWAC, at its Nov. 17-19 meeting in Washington, D.C., finalized the Lead and Copper Rule (LCR) Working Group's recommendations made during a series of meetings over the past year, adding a cover letter with "enhancements" that emphasize the need to prioritize actions to limit lead exposures in populations especially vulnerable to lead poisoning. These include pregnant women, infants, children and low-income, environmental justice populations.

But the final recommendations, which will be sent to EPA Administrator Gina McCarthy, fall short of the concrete policy changes environmentalists, public health advocates and municipal officials called for during public comments at the meeting.

EPA Office of Ground Water and Drinking Water Chief Peter Grevatt urged the advisors at the meeting to consider the commenters' recommendations, particularly their strong focus on low-income populations, adding that EPA would have to strongly consider them once the proposal reached headquarters. "I just want to make sure the council fully appreciates how these are going to play out for EPA in the long-term revisions to this rule," he said.

NDWAC's recommendations strongly encourage drinking water utilities to conduct full lead service line replacements (LSLRs), rather than partial replacements, by setting goals, working with customers to speed up replacement and receiving credit for replacement of lead-containing connecting pipes and/or confirmation that a service line initially inventoried as an LSL is not lead. But the recommendations do not call for prohibiting partial replacements.

Current Safe Drinking Water Act (SDWA) regulations require lead service lines to be replaced if lead levels in drinking water exceed an action level, and permit partial LSLRs, but EPA's Science Advisory Board has concluded that partial LSLRs do not reliably reduce lead levels in drinking water.

NDWAC's letter to McCarthy also notes the cost burden of the group's recommendations, without making specific cost estimates or requests for funding -- a key obstacle in incentivizing full LSLRs where customers likely would have to pay for LSL replacement on their property.

"The removal of all lead service lines would require significant financial resources and time," the letter notes. "During this time it is essential to have in place a robust effort of consumer education and engagement to assure ongoing protection from exposure to lead in drinking water."

Advocates, however, say this language is not strong enough or urgent enough to mitigate health crises like that in Flint, MI, where lead levels spiked after the city switched its water supply source from Detroit's municipal system to the Flint River. Environmentalists are threatening to sue state and local officials over their handling of the switch. And EPA has sent a task force to Flint to prevent future problems.

Other Recommendations

In addition, the final recommendations advise EPA to strengthen corrosion control treatment (CCT); modify monitoring requirements to provide for customer-requested tap samples and to assess the effectiveness of CCT; establish a health-based, household action level that triggers a report to the consumer and to the applicable health agency for follow up and separate the requirements for copper from those for lead, with new requirements targeting water that is corrosive to copper.

The full NDWAC also emphasized the working group's recommendation that EPA establish an "easily accessible, national clearinghouse of information about lead in drinking water to serve the needs of the public and of public water systems" in order to help, in particular, small and medium size systems in communicating more effectively with their customers on the risks of lead in drinking water, rather than just in paint.

Among the most vocal critics of the recommendations is LCR work group member Yanna Lambrinidou, president of Parents for Nontoxic Alternatives.

In an Oct. 28 letter to NDWAC, Lambrinidou dissents from the work group's recommendations, in part for its lack of a strict ban on partial LSLRs and its approach to giving compliance credit for a phasing-in full LSLRs with three year reporting goals for progress, even though partial LSLRs do not count toward a credit.

"The specifics of the [working group's] recommendation allow [public water systems] to delay full LSL replacement for decades, if not indefinitely, as well as to continue conducting partial LSL replacements, despite an extensive body of scientific research demonstrating that, under at least some circumstances, these replacements can pose a significant short- and long-term public health risk to consumers," Lambrinidou writes.

And during public comment Nov. 18 at the NDWAC meeting, Lambrinidou emphasized that although cost is a major impediment to more stringent full LSLRs requirements, most residents, when educated, understand the urgency and desire a full replacement.

"I hope folks can appreciate a serious loophole that when homeowners refuse, then a partial LSL might be acceptable," she said. "There are very legitimate reasons why homeowners refuse, and if we don't pay very close attention, and we create general permission for partials to be conducted when homeowners refuse. I think we're entering very, very dangerous territory." She added that interviews she conducted with homeowners said they would have opted for a full LSLR had they known the risks, but that cost remained the biggest impediment.

Regulatory 'Loopholes'

Other commenters at the meeting also spoke of “loopholes” in the current rule they feared would be carried over to the new rule.

Officials from Flint said their lead crisis happened due to a failure of the Michigan Department of Environmental Quality to require new testing when the town switched water sources and failed to require Flint to add corrosion control treatment, required in the current LCR.

U.S. Rep. Dan Kildee (D-MI), who represents Flint, told the panel Nov. 18 that its proposed revisions “only assured we would have met the intent of this rule 25 years later, and then if we prevented these deficiencies, we would finally achieve that intent.”

While Michigan advocates complained that neither the current nor proposed new rule required rigorous testing and monitoring before switching to a water source, others said tap sampling contained “loopholes” in that it did not encourage the use of “worst possible scenarios.”

But NDWAC members, in later deliberations, said this was based not on the plain language of the 2007 LCR, but on lack of compliance. To remedy this, they included language in their “enhancement” letter to McCarthy directed at utilities, saying “prior to the adoption of the new rule, compliance with the existing rule is essential.”

Service Line Control

NDWAC, like the smaller working group before it, also declined to revisit a longstanding request by public health and environmental advocates to revisit how a utility should be required to define when it “controls” part of a lead line. A change could allow EPA to mandate full LSLRs, and utilities and municipalities would be responsible for that replacement.

Currently, when a system exceeds the lead action level, EPA requires it to replace only the portion of the LSL that it owns, but advocates believe the definition of “ownership” should be replaced with a requirement that public water systems must replace the entire LSL where they have the authority to “replace, repair or maintain” the line.

Jennifer Chavez, a staff attorney with Earthjustice, said during public comments that the current approach to lead line ownership “has been a failure.”

“We were disappointed that the work group did not even recommend options for addressing the primary obstacle: a shared responsibility regime which makes water consumers responsible for protecting consumers from lead services lines, in the particular ownership-based requirement,” Chavez said. “It led to so many partial LSLs, which occur because so many people in America cannot afford to come up with the $3,000 to $7,000 [for the full LSL].”

“It’s impossible to deny that what is needed in the U.S. to protect children from LSLs is going to be expensive and challenging but when we focus on the cost to utilities, we miss the point, because the question is, are we going to put those costs for private consumers on the backs of an already overburdened population, or come up with funding mechanisms that enable everyone in the U.S. to contribute to solving this public health problem?”

But one NDWAC member, Carrie Lewis, superintendent of Milwaukee Water, said the entire capital budget for water projects for her city is nearly half of what it would cost to do the full LSLs already strongly encouraged in the revisions.

“I would ask this group that when looking at these criteria, to find other ways utilities can demonstrate an adequate pace, an adequate effort, an adequate improvement, other than a straight percentage [of lines that must be replaced] year after year,” Lewis said. She also requested that the group reiterate its support of the 2007 LCR’s original definition of “ownership” in its enhancement letter to McCarthy. -- *Amanda Palleschi*

To: Hedman, Susan[hedman.susan@epa.gov]; Kaplan, Robert[kaplan.robert@epa.gov]; Hyde, Tinka[hyde.tinka@epa.gov]
Cc: Kelley, Jeff[kelley.jeff@epa.gov]; Rowan, Anne[rowan.anne@epa.gov]; Cassell, Peter[cassell.peter@epa.gov]; Beckmann, Ronna Erin[beckmann.ronna@epa.gov]; Harrison, Melissa[Harrison.Melissa@epa.gov]; Abrams, Dan[Abrams.Dan@epa.gov]; Poy, Thomas[poy.thomas@epa.gov]; Peterson, John[peterson.john@epa.gov]; Singer, Joshua[Singer.Joshua@epa.gov]; Arcaute, Francisco[Arcaute.Francisco@epa.gov]; Cannon, Phillippa[Cannon.Phillippa@epa.gov]; Deamer, Eileen[deamer.eileen@epa.gov]; Fortin, Denise[Fortin.Denise@epa.gov]; Nowotarski, Allison[nowotarski.allison@epa.gov]; Bassler, Rachel[Bassler.Rachel@epa.gov]; Reshkin, Karen[Reshkin.Karen@epa.gov]; Loop, Travis[Loop.Travis@epa.gov]; Purchia, Liz[Purchia.Liz@epa.gov]; Henry, Timothy[henry.timothy@epa.gov]; Grantham, Nancy[Grantham.Nancy@epa.gov]; Lee, Monica[Lee.Monica@epa.gov]
From: Peterson, John
Sent: Fri 11/20/2015 2:51:02 PM
Subject: FLINT DRINKING WATER CLIPS 11-20-15

FLINT DRINKING WATER CLIPS

US. EPA Region 5 – as prepared by john peterson *(ORA/OEC/PA)* on nov 20, 2015.

End water shutoffs in Flint during public health emergency (flint journal editorial)

Government Exposed Flint Residents to Dangerous Lead Levels in Drinking Water (legal reader BLOG)

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http://www.mlive.com/opinion/flint/index.ssf/2015/11/editorial_end_water_shutoffs.html

By MLive/Flint Journal opinion The Flint Journal on November 20, 2015 at 9:00 AM, updated November 20, 2015 at 9:08 AM

The following is an opinion of The Flint Journal Editorial Board.

FLINT, MI -- Faced with mounting delinquent water bills, the city of Flint recently announced it would resume sending water shutoff notices to overdue customers.

These shutoffs are unacceptable in the face of the city's water quality crisis.

The residents of Flint – some of the poorest in the country – have already been subjected to tainted water due to a failure of government oversight. Now, the city of Flint is adding insult to injury by threatening to cut off all access to water in some households, putting money above public health.

Local and state leaders should instead focus on correcting the fundamental problem: old lead service lines running under the city's surface.

Rather than spend its time punishing people for failing to pay for bad water, the city would be better served working to properly identify which homes are at high risk for lead poisoning — something the federal government demanded more than two decades ago but the city failed to do.

We need to see more urgency from the governor's office, Department of Environmental Quality and the U.S. Environmental Protection Agency on a long-term strategy for solving this crisis.

An aggressive plan for scouting out and replacing the lead service lines is a more appropriate use of government resources amid the current public health emergency. As the crisis occurred while the city was under the oversight of a state-appointed emergency manager, the state should provide funding to get it started.

Even though water shutoffs are a routine practice that have a proper time and place in municipal governance, Flint's situation is anything but routine.

Double-digit rate hikes in 2011 – which the city attributed to aging infrastructure and population loss, among other causes – pushed residents monthly bills to over $100 or more. A legal challenge to the increase is sitting before Genesee Circuit Judge Archie Hayman.

And, after the city switched to using the Flint River as its water source in 2014, Flint's drinking water has been plagued at different times by bacteria, chemical contaminants and most recently, high levels of lead.

Until the city and state can show that the amounts of lead in Flint's water are far below the actionable level, no one in the city should have their water shut off for nonpayment. The state, who is ultimately responsible for this mess, should step in and subsidize the cost of treatment, if needed.

Even if families are not drinking the water – a justifiable move considering current events – shutting off all water to a household could jeopardize residents' health and prevent them from accessing water for bathing, washing and other needs.

Shutting off water to the city's poorest and most vulnerable residents is an extreme measure that must be avoided. It's yet another offense to a population that's too long been served with water they can't trust.

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http://www.legalreader.com/government-exposed-flint-residents-to-dangerous-lead-levels-in-drinking-water/

Opinion Blog by Jay W. Belle Isle - Nov 19, 2015

If you can't trust your governor… I can't finish that sentence. Flint, Michigan residents have every reason to distrust their governor. They've recently filed suit against the city and the state alleging that both entities put their health in danger. The claim states that the government exposed Flint residents to dangerous lead levels in drinking water.

To say that the city of Flint has had some hard times economically is akin to saying that winter is cold. In 2014, Michigan governor Rick Snyder put the city under emergency financial management. As a cost-cutting effort, he also had the city switch its water supply from Detroit's water system to the Flint River in April 2014.

Despite assurances that water from the Flint River was safe to drink, residents began experiencing health problems such as skin lesions and respiratory disorders. The city of approximately 99,000 was switched back to Detroit's water system last month.

Residents of Flint, Mich. (shown here in January), have been protesting the quality and cost of the city's tap water for more than a year.

The suit claims that the damage has been done. Flint is an old city and many of its water pipes are made of lead. The claim is that the pipes and service lines were corroded by water from the Flint River, thus allowing lead into the water supply.

Residents are seeking class-action status for the suit, as well as compensatory & punitive damages, appointment of a monitor to oversee Flint's water supply and the creation of a medical monitoring fund.

Just this week, the ACLU of Michigan and a nonprofit, the Natural Resources Defense Council stated that they would file suit too, if the damage isn't repaired. Named defendants in the suit include Gov. Snyder and former Flint Mayor Dayne Walling. The new mayor, Karen Weaver, who beat Walling in this month's election, is not a named defendant. She is, however, listed as a possible defendant in the ACLU's case.

Flint is located roughly 68 miles (109 km) northwest of Detroit.

This is a federal case titled *Mays et al v. Snyder et al,* U.S. District Court, Eastern District of Michigan, No. 15-14002.

###

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Chicago, IL

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From: Poy, Thomas
Sent: Fri 11/20/2015 8:07:57 PM
Subject: Revised Draft Preliminary Assessment
EPA Task Force Recommendations updated Final Draft November 19 2015 tpedits.docx

Attached is the revised Optimization and Maintenance of Optimal Corrosion Control Treatment – Preliminary Assessment.

My revisions:

1) Replaces "study/studies" with more acceptable words.

2) Takes out Section 4 0 – Funding Needs

3) Takes Miguel's internal notes for the Task Force and turns them into Comments (makes it easier to finalize the document by accepting changes and deleting all comments)

4) Adds what the information that is being requested will be used for.

Please take a look to see if there is anything in this version that should not be distributed to MDEQ and Flint (in draft) for their information.

Thanks.

Tom

Tom Poy

Chief, Ground Water and Drinking Water Branch

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From: Peterson, John
Sent: Mon 11/23/2015 3:01:02 PM
Subject: Flint Water Clips 11-23-15

FLINT DRINKING WATER CLIPS

US. EPA Region 5 – as prepared by john peterson *(ORA/OEC/PA)* on nov. 23, 2015.

Records: Mich. gov. office in loop on Flint drinking-water decision (USA TODAY network/detroit free press)

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http://www.usatoday.com/story/news/nation-now/2015/11/22/records-mich-gov-office-loop-flint-drinking-water-decision/76222312/

Paul Egan, Detroit Free Press

LANSING, Mich. — Flint's fateful decision to sever its ties with Detroit as its supplier of drinking water went all the way up to the Michigan governor's office, state records obtained under Michigan's Freedom of Information Act show.

But whose fingerprints are on a subsequent and more damaging move — to get Flint's drinking water from the highly corrosive Flint River — remains much less clear.

On March 25, 2013, then-state Treasurer Andy Dillon and Gov. Rick Snyder's chief of staff, Dennis Muchmore, held a telephone conversation about “Flint water supply alternatives,” according to records obtained by the Free Press under FOIA.

Later that evening, the Flint City Council, which was under a state-appointed emergency manager, voted 7-1 in favor of a switch in the source of its water supply from the Detroit to a new Karegnondi Water Authority, a move that would ultimately lead to Flint using corrosive water from the Flint River as an interim source, which produced drinking water with unsafe levels of lead.

Dillon, who resigned as treasurer in October 2013, also held a Lansing meeting regarding Flint water at 9 a.m. the morning after the Monday Flint council meeting, and had a 1 p.m. phone call that Tuesday with Department of Environmental Quality Director Dan Wyant regarding “Flint/KWA,” the records show. Dillon also met in Lansing the day after the council meeting with then-Flint Mayor Dayne Walling,

The records, from Dillon's daily appointment schedule, show active state involvement immediately before and after the decision to make the Flint water switch, up to and including the offices of the treasurer, who oversees emergency managers, and the governor.

But the records don't show that Snyder or Dillon decided Flint residents should drink Flint River water until their new KWA pipeline to Lake Huron was completed. There's still murkiness over exactly how that decision came about.

The decision to draw water from the Flint River starting in April 2014, combined with a failure by the state Department of Environmental Quality to require treatment to soften the water to reduce corrosion and the leaching of lead from delivery pipes and other failures related to water testing, ultimately proved disastrous.

Residents complained about the taste, smell and appearance.

Lead, which can cause permanent brain damage in children, leached into the drinking water. Tests showed lead content well in excess of acceptable levels of 15 parts per billion. Other tests showed the number of Flint children with elevated blood-lead levels — 5 micrograms per deciliter or more — jumped from 2.1% in the 20 months prior to Sept. 15, 2013, to 4% between Jan. 1 and Sept. 15 this year. Certain ZIP codes showed even higher jumps in the elevated levels, from 2.5% of the children tested to 6.3%.

Just one hour north of Detroit in Flint, Michigan where residents have felt under siege for years, the newest threat pours from kitchen spigots and showerheads. VPC

After a public outcry, Snyder and the Legislature approved partial funding for Flint to reconnect to DWSD while it awaits the completion of the KWA. That reconnection to Detroit-supplied water happened Oct. 16.

Mayor Walling was quoted in March 2013 saying Flint would continue to get its water from the DWSD until the $272-million KWA pipeline system to Flint was completed. On Friday, he repeated his assertion that the plan was to stick with Detroit as an interim source, and said he was not aware of any pressure from Dillon or other state officials to instead use the Flint River as an interim source because it would be cheaper.

That decision came later, for reasons that are not entirely clear. Flint and Detroit, under the control of state-appointed emergency managers since late 2011 and March 2013, respectively, could not agree on a rate structure for the DWSD to continue serving Flint until the KWA pipeline was completed.

The failure to reach a pricing agreement on an interim water supply for Flint is puzzling considering Dillon's Treasury Department had commissioned an engineering study, which in February 2013 said it would be less costly for Flint to stay with the DWSD than to switch to the KWA. Also, state officials were consumed at the time with trying to keep Detroit out of bankruptcy, and for Flint to split with the DWSD could only make Detroit's financial situation that much more perilous.

Dillon said in an email to the *Free Press* Friday that although Detroit may have been under the state's control, the DWSD was not.

"After we signed off on Flint joining the KWA, Flint was to negotiate with the DWSD regarding using their water during the construction of the KWA," Dillon said.

"DWSD at the time was overseen by a board appointed by (U.S. District) Judge (Sean) Cox as the system was under federal oversight," Dillon said. "If Flint was unable to negotiate a fair deal, I recall their backup plan was to use the Flint River. I don't recall Treasury being involved in the negotiations with DWSD or, after negotiations broke down, in Flint's decision to switch to the Flint River."

March 2013 was one month after Dillon received a report he commissioned from the Detroit engineering firm Tucker, Young, Jackson Tull Inc., intended to "provide an analysis of the water supply options to assist the treasurer in determining any potential risk and the best course going forward for supplying potable water to the City of Flint."

The study found it would be less costly for Flint to stay with the Detroit Water and Sewerage Department than to cover its 30% share of the new KWA pipeline from Lake Huron.

"Treasury held two and possibly three lengthy meetings to go over the Tucker Young report with the Flint leaders, KWA consultants and DEQ representatives," Dillon said. "During these meetings, we learned several assumptions made by TY were incorrect and undermined the conclusions reached in their report."

"I never received any pressure from the governor's office to decide one way or the other on approving the KWA," the former treasurer said. "We ... made a decision based upon what we thought was in the best interests of Flint. The decision to support KWA was influenced by our conclusion that there was no financial risk to Flint for the project, and the DEQ's conclusion that it was more beneficial and economical for Flint to join KWA (again a separate and distinct decision from using the Flint River)." Also, "this is the outcome the local officials wanted," he said.

Walling said the decision to use the Flint River as an interim source was ultimately made by then-Flint emergency manager Edward Kurtz in about June 2013 when he expanded an existing engineering contract for the Flint Water Treatment Plant to cover needed upgrades.

Kurtz, contacted by telephone, declined to comment.

Snyder spokeswoman Sara Wurfel said the governor was part of "a consensus" about Flint splitting with the DWSD to get its long-term water from the KWA, but Snyder was not involved in efforts to reach an interim pricing agreement between Flint and Detroit, and not involved in the decision to draw drinking water from the Flint River.

Once talks between Flint and Detroit failed, "if you don't have another water source, where else was it going to come from?" she asked Friday.

###

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From: Poy, Thomas
Sent: Mon 11/23/2015 4:40:15 PM
Subject: RE: Revised Draft Preliminary Assessment
EPA Task Force Recommendations updated Final Draft November 23 2015 v2.docx

Here is the revised Draft Preliminary Assessment with the placeholder "4.0 Funding Needs (To Be Determined)" and the internal notes restored.

Tom

Tom Poy

Chief, Ground Water and Drinking Water Branch

USEPA - Region 5

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From: Lytle, Darren
Sent: Monday, November 23, 2015 10:01 AM
To: Henry, Timothy <henry.timothy@epa.gov>; Poy, Thomas <poy.thomas@epa.gov>; Deltoral, Miguel <deltoral.miguel@epa.gov>; Kaplan, Robert <kaplan.robert@epa.gov>; Kempic, Jeffrey <Kempic.Jeffrey@epa.gov>; Schock, Michael <Schock.Michael@epa.gov>
Subject: RE: Revised Draft Preliminary Assessment

I agree. Darren

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Sent: Monday, November 23, 2015 10:21 AM
To: Poy, Thomas <poy.thomas@epa.gov>; Deltoral, Miguel <deltoral.miguel@epa.gov>; Kaplan, Robert <kaplan.robert@epa.gov>; Kempic, Jeffrey <Kempic.Jeffrey@epa.gov>; Lytle, Darren <Lytle.Darren@epa.gov>; Schock, Michael <Schock.Michael@epa.gov>
Subject: RE: Revised Draft Preliminary Assessment

Thanks, and yes, I would recommend that the notes stay in the document. I think that they contain information that is worth sharing. What do others think?

Tim Henry
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Sent: Monday, November 23, 2015 9:11 AM
To: Henry, Timothy <henry.timothy@epa.gov>; Deltoral, Miguel <deltoral.miguel@epa.gov>; Kaplan, Robert <kaplan.robert@epa.gov>; Kempic, Jeffrey <Kempic.Jeffrey@epa.gov>; Lytle, Darren <Lytle.Darren@epa.gov>; Schock, Michael <Schock.Michael@epa.gov>
Subject: RE: Revised Draft Preliminary Assessment

Tim: I'll make the change to the Funding Section. On the internal notes, is the intent to keep them in the document when sending to MDEQ and Flint?

Tom

Tom Poy

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From: Henry, Timothy
Sent: Friday, November 20, 2015 3:56 PM
To: Poy, Thomas <poy.thomas@epa.gov>; Deltoral, Miguel <deltoral.miguel@epa.gov>; Kaplan, Robert <kaplan.robert@epa.gov>; Kempic, Jeffrey <Kempic.Jeffrey@epa.gov>; Lytle, Darren <Lytle.Darren@epa.gov>; Schock, Michael <Schock.Michael@epa.gov>
Subject: RE: Revised Draft Preliminary Assessment

A couple of thoughts.

Recommend we do not eliminate the section header for 4.0 – Funding needs; rather, replace "summarized" with "to be determined" in parenthetic following, and strike the content of the section. Need a placeholder.

Also recommend we do not strike the 3 "internal notes" currently in the document. I think that the first identifies an issue we should keep in front of everyone and the next two have generally useful information for all to know. If they are turned into comments they will be lost when we finalize the document.

Tim Henry
Deputy Director, Water Division
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77 W. Jackson Blvd., Chicago, IL 60604-3590
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Sent: Friday, November 20, 2015 2:08 PM
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Cc: Kelley, Jeff[kelley.jeff@epa.gov]; Rowan, Anne[rowan.anne@epa.gov]; Beckmann, Ronna Erin[beckmann.ronna@epa.gov]; Harrison, Melissa[Harrison.Melissa@epa.gov]; Abrams, Dan[Abrams.Dan@epa.gov]; Poy, Thomas[poy.thomas@epa.gov]; Singer, Joshua[Singer.Joshua@epa.gov]; Arcaute, Francisco[Arcaute.Francisco@epa.gov]; Cannon, Phillippa[Cannon.Phillippa@epa.gov]; Deamer, Eileen[deamer.eileen@epa.gov]; Fortin, Denise[Fortin.Denise@epa.gov]; Nowotarski, Allison[nowotarski.allison@epa.gov]; Reshkin, Karen[Reshkin.Karen@epa.gov]; Loop, Travis[Loop.Travis@epa.gov]; Purchia, Liz[Purchia.Liz@epa.gov]; Henry, Timothy[henry.timothy@epa.gov]; Lee, Monica[Lee.Monica@epa.gov]; Grantham, Nancy[Grantham.Nancy@epa.gov]; Distefano, Nichole[DiStefano.Nichole@epa.gov]
From: Cassell, Peter
Sent: Tue 11/24/2015 9:28:18 PM
Subject: Flint Water Clip Nov. 24, 2015

Engineer gets $907,000 contract add-on to prepare Flint for KWA water

http://www.mlive.com/news/flint/index.ssf/2015/11/engineer_gets_907000_contract.html

Print Email

By Ron Fonger | rfonger1@mlive.com
on November 23, 2015 at 7:06 PM

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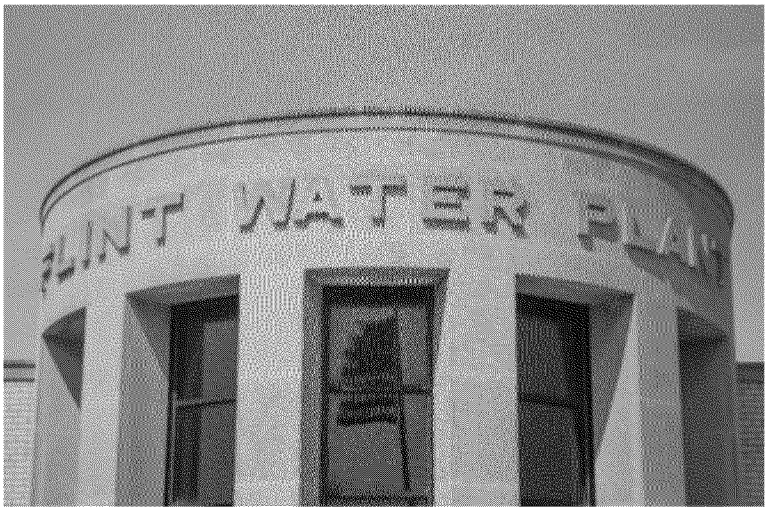
Email



Flint Journal file photo

FLINT, MI -- The engineering company that's been working with the city at its water plant will continue to as Flint prepares to treat raw water from a new Karegnondi Water Authority pipeline.

The City Council approved a change in the contract with Lockwood, Andrews & Newnam that will pay the company $907,650 to continue its work.

The change in the 2013 contract means the company will collect a total of up to $3.8 million for its work on Flint water issues, an arrangement that started when the city agreed to pay LAN $1.3 million to study the feasibility and develop cost estimates for using its water plant as a primary water source.

The work proposed in the change order covers specific items including jar testing of the new Lake Huron water source and managing construction activities at the plant in advance of connection to connecting to the KWA line that's currently under construction.

Some council members questioned City Administrator Natasha Henderson about the change order last week, but Henderson said the contract change was necessary to keep the KWA pipeline project moving forward.

"We have a nine-month contract (to purchase water from the Detroit water system)," Henderson told council members last week. "Whatever I can do to get the city to KWA," I'm doing, she said.

Council member Scott Kincaid said last week that he wasn't happy with the engineering company, "but I haven more concerns with" a possible delay in connection to the pipeline.

Councilman Eric Mays also said he was unhappy with LAN for remaining "too silent" while the city had difficulty producing water that did not violate the Safe Drinking Water Act and the Lead and Copper Rule.

Flint had purchased treated Lake Huron water from the Detroit water system for decades until April 2014 when the city began to use Flint River water until completion of the KWA pipeline.

After the discovery of elevated lead levels since that water source switch, the city returned to buying water from Detroit last month.

Council approved the change order in the LAN contract by a vote of 6-2.

Council members Eric Mays and Monica Galloway voted against the change order.

Council members Jacqueline Poplar, Kerry Nelson, Josh Freeman, Wantwaz Davis, Vicki VanBuren, and Scott Kincaid voted for it.

Councilman Herbert Winfrey was absent from the meeting.

To: Hedman, Susan[hedman.susan@epa.gov]; Kaplan, Robert[kaplan.robert@epa.gov]; Hyde, Tinka[hyde.tinka@epa.gov]
Cc: Kelley, Jeff[kelley.jeff@epa.gov]; Rowan, Anne[rowan.anne@epa.gov]; Cassell, Peter[cassell.peter@epa.gov]; Beckmann, Ronna Erin[beckmann.ronna@epa.gov]; Harrison, Melissa[Harrison.Melissa@epa.gov]; Abrams, Dan[Abrams.Dan@epa.gov]; Poy, Thomas[poy.thomas@epa.gov]; Peterson, John[peterson.john@epa.gov]; Singer, Joshua[Singer.Joshua@epa.gov]; Arcaute, Francisco[Arcaute.Francisco@epa.gov]; Cannon, Phillippa[Cannon.Phillippa@epa.gov]; Deamer, Eileen[deamer.eileen@epa.gov]; Fortin, Denise[Fortin.Denise@epa.gov]; Nowotarski, Allison[nowotarski.allison@epa.gov]; Bassler, Rachel[Bassler.Rachel@epa.gov]; Reshkin, Karen[Reshkin.Karen@epa.gov]; Loop, Travis[Loop.Travis@epa.gov]; Purchia, Liz[Purchia.Liz@epa.gov]; Henry, Timothy[henry.timothy@epa.gov]; Grantham, Nancy[Grantham.Nancy@epa.gov]; Lee, Monica[Lee.Monica@epa.gov]
From: Kelley, Jeff
Sent: Wed 11/25/2015 3:43:20 PM
Subject: Flint Water Clips 11/25/2015

FLINT DRINKING WATER CLIPS

US. EPA Region 5 – as prepared by john peterson (ORA/OEC/PA) on nov. 25, 2015.

- □□□□□□□□ Appeals court greenlights hearing on Flint water rate ruling (flint journal/mlive)
- □□□□□□□□ Livingston County to inspect restaurant water (livingston daily)
- □□□□□□□□ Road Salt Contaminating Drinking Water, Urban Lakes (wmuk 102.1 NPR)
- □□□□□□□□ Our elected leaders must stand up to polluters (the times herald)

Appeals court greenlights hearing on Flint water rate ruling (flint journal/mlive)

http://www.mlive.com/news/flint/index.ssf/2015/11/appeals_cou

By Ron Fonger | rfonger1@mlive.com The Flint Journal
on November 24, 2015 at 2:46 PM

FLINT, MI -- The Michigan Court of Appeals has turned down the city's request to delay a hearing on whether it has complied with an injunction aimed at lowering Flint's water and sewer rates.

Attorney Val Washington, who is representing Flint residents in a class action lawsuit, said Tuesday, Nov. 24, that the hearing -- scheduled for 1 p.m. Wednesday, Nov. 25 -- will go forward.

Flint City Attorney Peter Bade declined to comment on the appeals court ruling.

Washington is in court questioning whether the city is complying with Genesee Circuit Judge Archie Hayman's August injunction.

Washington said city officials miscalculated the water-rate reductions ordered by Hayman and should not be able to disconnect water customers for failuree to pay past-due bills.

The city announced earlier this month that it was starting the process of sending out thousands of disconnection notices to customers with accounts that were at least 30 days past due.

Hayman scheduled Wednesday's hearing on Washington's claims, and the city had asked the appeals court to stay that hearing.

Washington is asking Hayman to find the city in contempt of his August injunction, which rolled back rates, blocked disconnections based on bills calculated under the old rates, and required the city to repay its water and sewer fund by more than $15 million.

City officials have said the ruling could result in a municipal bankruptcy unless it is reversed or modified.

The class action lawsuit, which was prompted by Flint resident Larry Shears' Circuit Court complaint, claims the city illegally raised water and sewer rates in 2011.

Livingston County to inspect restaurant water (livingston daily)

http://www.livingstondaily.com/story/news/2015/11/24/county-inspect-restaurant-water/75923488/

Wayne Peal, Livingston Daily 11:55 a.m. EST November 24, 2015

Contract with state also covers public pools

Livingston County health officials will monitor drinking-water safety at select area restaurants under a contract approved this month by the Livingston County Board of Commissioners.

The county will receive just under $125,000 from the state to inspect well water at local restaurant sites in addition to water in public swimming pools.

The move was procedural, but water safety has emerged as a key issue statewide in light of the controversy concerning drinking water **in Flint**.

The local contract covers wells serving "about 400" local sites, including office buildings, child care centers and other facilities serving at least 25 people per day for at least 60 days a year, incuding about 90 restaurants, county environmental health Director Matt Bolang said. Though most of the money will go toward those wells, about $9,000 is earmarked to monitor pools, campgrounds and areas where medical waste may have leaked.

"It is something that we have done in the past," he said.

County water authorities, including municipal and private sources, are also inspected and issue their own reports to consumers.

The contract that went before the BOC dealt with (among other items) regulating and monitoring non-community public water supplies. These are defined as serving 25 or more people/day for at least 60 days out of the year. While restaurants on a well would meet this definition, so would office buildings, campgrounds, child care centers, etc. Any building or facility where at least 25 people/day could consume water.

Also, as part of this contract we monitor residential wells in areas adjacent to documented groundwater contamination. The medical waste piece is separate of that, and deals with the operation of facilities that generate medical waste and need to be licensed through MDEQ.

The controversy in Flint stems from heightened lead content in city water after it switched from the Detroit system to a local source for drinking water under the city's appointed emergency manager,

Under the contract, the Michigan Department of Environment Quality will pay the county department of public health to conduct the local inspections. The contract, which runs through Sept. 30, passed on a unanimous vote.

Road Salt Contaminating Drinking Water, Urban Lakes (wmuk 102.1 NPR)

http://wmuk.org/post/road-salt-contaminating-drinking-

water-urban-lakes

By Rebecca Thiele Western Michigan University 16 hours ago

Last year, the Michigan Department of Transportation used more than 650,000 tons of salt on the state's roads. That's 15 tons per person. Eventually, all of that salt washes into Michigan's lakes and streams - which could be making the drinking water in Michigan's urban areas unsafe.

For six years, Western Michigan University Geosciences Professor Carla Koretsky and her students have been studying Woods Lake in Kalamazoo. It's a good test subject because of all the runoff that flows into it from nearby streets and lawns.

In 2003, the city of Kalamazoo put up a detention wall to keep out things like fertilizer and debris. So Koretsky's team tests the water every year to see if the wall is working.

Instead of finding phosphorus or nitrogen, students have found high levels of sodium chloride - salt.

"So I right away assumed that they had made some kind of mistake, they hadn't used the instrument correctly. It was a new instrument, maybe it wasn't calibrated correctly or something like that. And so I kind of talked to them, looked at what they had been doing, looked the data, redid the sampling, redid the analysis. And sure enough those numbers were correct," says Koretsky.

Koretsky says unlike many pollutants, salt dissolves in water. So it doesn't get caught by the detention wall. She says that's a problem because it prevents the lake from "turning over."

"So you never flush fresh oxygen down into the bottom of those anoxic waters," she says.

Anoxic means little to no oxygen.

A Widespread Drinking Water Problem

This problem isn't confined to one lake, however. Tons of road salt drains into urban rivers and streams every year. A 2013 report from the Michigan Department of Environmental Quality showed that streams near urban areas - like Detroit, Grand Rapids, and Saginaw - had significantly higher chloride levels.

What's even more interesting is that Michigan has more salty lakes than the national average - even more than other upper Midwest states. That's according to the Michigan National Lakes Assessment Project in 2007.

Koretsky says the United States has increased its use of road salt exponentially since the 1940s.

"So if you go back and you look at what the salt levels were 20 and 30 years ago, it's not quite so high. It's kind of creeping effect if you like. So I think that's maybe one of the issues is that it's a slow kind of process with salinizing these lakes," she says.

So what does this all mean? Right now, Koretsky says, we don't know - but it doesn't look good. If too much salt gets into the groundwater, at best it could make a city's water less appetizing.

At worst, it could corrode old water pipes - adding toxic heavy metals to drinking water wells. Professor Marc Edwards of Virginia Tech's Environmental Engineering Department says salt is likely what caused **Flint's water** to get contaminated with lead.

"Whether that salt is coming from a man-made source or it's just naturally occurring, we're not really sure. But there is nine times more chloride, which is the key ingredient in the corrosive water that was being used in Flint River than in Lake Huron water," he says.

Edwards says there is a theory that once chloride levels in drinking water reach a certain point, you'll see a dramatic increase in lead. He says his team is seeing this in cities they're studying on the East Coast.

"Our old point of view was that, with time, the lead levels would invariably go lower and lower as the pipe got coatings on it and the lead leached from the plumbing. Instead what we're discovering is that lead in water problems are increasing and salt in water is one of the reasons for that," says Edwards.

Will this happen in your city? Edward says that depends on the chemistry of the drinking water and the age of the city's pipes. But he says most urban centers are in trouble.

"The one thing that's certain is higher chloride is bad. It eats up pipes - the iron pipes, it eats up the lead pipes, it eats up copper pipes. So this salt is having devastating economic impacts on our infrastructure. And I think if you factor in the billions and billions of dollars that are being lost from corrosion of just the water infrastructure alone, it would make people think twice - if they looked at it carefully - before they put so much salt on the roads."

Unknown Ecological Effects

What about small urban lakes like Woods Lake? WMU's Carla Koretsky says, right now, it doesn't seem like the salt is having any effect on Woods Lake. Most of the fish and other aquatic life live closer to the lake's surface. The salt sits at the bottom.

Koretsky says it could still affect microbes in the lake, but they'll have to do more research to find out. More salt could also mean more methane in the lake - a greenhouse gas that contributes to climate change. Koretsky says they're looking into that too.

Surprisingly, Koretsky says there hasn't been much research into the effect of road salt in the United States. In many ways, her team is leading the way. They received a grant from the MDEQ to do further research on Woods Lake and similar lakes in the area.

“This is new territory in a way," she says.

Possible Solutions

Salt is certainly the most popular way to keep ice off of roads in big cities, but there are alternatives. Koretsky says, unfortunately, every de-icer has its downsides. Take sand, for example:

“In addition to the problem of turbidity and sediment in the lakes, when you drive over sand a lot of the fine particles go in the atmosphere. That can be a real problem with respiratory ailments. There are problems with respect to damage of the roads. So it’s more expensive in terms of having to kind of clear it at the end of the season and potentially also having the lifetime of road be less. So that’s very expensive as well. So sand is not a terrific alternative, although it is relatively inexpensive.”

Koretsky says other de-icers are less effective or more expensive than salt. Many of them still pollute lakes and streams in one way or another.

Some experts say Michigan should still use salt, just use less of it. The Michigan Department of Transportation is currently working on a project to reduce runoff from the state’s roads and use salt more efficiently. Hal Zweng manages MDOT’s stormwater program:

“We’ve done studies to try to determine the best speed for the trucks to operate when they spread salt on the road to try to minimize the amount that just bounces and scatters off the road. We pre-wet the salt which helps it stick to the road surface when it goes down rather than have it scatter as much. And we also accelerants, chemicals to the salt to help it start acting faster.”

But de-icing expert Mark Cornwell says the state could be doing more. Cornwell worked in the ice control business for about six years before starting Sustainable Salting Solutions, LLC. Now he helps municipalities around the country manage their road salt.

Cornwell says using more salt brine would reduce the amount of salt on the roads and save cities money. He says salt brine - salt dissolved in water - only uses about 120 pounds of salt per lane mile. That would save about 3,800 pounds of salt per year in Michigan.

“Solid salt doesn’t melt anything. It basically has to come in contact with water, pull heat off the pavement and start to create brine. So, in some instances that can be a challenge. And so by kind of going around that phase of the solid to liquid, you’re in to a more immediate effect,” says Cornwell.

Newer salt trucks would also help. Cornwell says MDOT has been forced to use old equipment that doesn’t place salt on the roads as precisely as newer models.

Our elected leaders must stand up to

polluters (the times herald)

http://www.thetimesherald.com/story/opinion/readers/2015/11/2
leaders-must-stand-polluters/76333806/

Commentary by Marika Sinnis 4:58 p.m. EST November 24, 2015

Al Jazeera recently published the first in a three-part series examining Wisconsin's water resources, drawing international attention to its woeful contemporary environmental record under the governorship of Scott Walker.

Michigan's similar poor water quality record is reflected in **the Flint's recent water crisis**, with no immediate action taken by Gov. Snyder. But thanks to senators like Debbie Stabenow and Gary Peters, we might be able to have protections for waterways at the federal level.

Senators Stabenow and Peters have shown their continued support for clean drinking water in our state over the past month. During the first week of November, they voted against two attacks on the EPA's Clean Water Rule which restores Clean Water Act protections to over 23,000 miles of Michigan's waterways and the drinking water sources for more than 1.4 million Michiganders.

The safety of our drinking water is, after all, contingent upon our elected officials' political will to stand up to those who would pollute freely.

Michigan is lucky to have such leaders who can help give federal protections to waterways.

When I sit down for Thanksgiving dinner this week, I will give thanks for the work that our senators are doing to protect our waterways.

MARIKA SINNIS

Ann Arbor, Nov. 23

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To: Thomas Poy[Poy.Thomas@epa.gov]; Porter, Andrea[porter.andrea@epa.gov]; Deltoral, Miguel[deltoral.miguel@epa.gov]; Shoven, Heather[shoven.heather@epa.gov]; Kuefler, Janet[kuefler.janet@epa.gov]; Damato, Nicholas[damato.nicholas@epa.gov]
From: Crooks, Jennifer
Sent: Tue 12/1/2015 9:01:30 PM
Subject: MI Dept of Health and Human Services

As you recall, Tom P and I talked with Richard Benzie and Liane at the end of August about the State doing a voluntary consumer education about lead in drinking water. And Liane said they would pursue this (documented in our meeting notes). I contacted the State—Mike Prysby—at the end of October or early November to ask what the status was of this consumer education piece. I discussed the need for consumer education of lead especially in the very low-income areas of Flint that saw their children's Blood Lead Levels triple, especially for people that don't read newspaper or watch the TV news or have a smartphone. He said that it had not been done, due to competing priorities; e.g. all the FOIAs, citizen and press inquiries. He said he would look into the status of this consumer education. After several weeks of contacting him, I learned that the Michigan Dept of Health and Human Services was the lead on developing consumer education on lead.

Today I talked with Linda Dykema, a toxicologist with HHS. She said that she and her group have been working on a number of education documents. Genesee County Health Dept is helping HHS understand the needs of the citizens of Flint, such as reducing the reading levels of the HHS documents/improving the readability, and discussing with HHS the questions the citizens of Flint want answered.

HHS developed and sent out packets of information to all the schools in Flint to be distributed to every school-age child, to take home to the parents. However, these were not as effective as hoped, due to the difficulty in readability of the information. This information is being re-worked to be written at a 6th-grade level.

They have issued FAQ's, information to parents, pregnant women, and other information on lead in drinking water.

All the documents they have developed for consumer education on lead are on the website:

http://www.michigan.gov/deq/0,4561,7-135-3313_3675_73946---,00.html

Linda did say that these consumer education pieces must be vetted through the DEQ and the

Governor's office, so the process is slow.

I talked about the need for people in the low-income neighborhoods with the highest BLLs, to have information mailed to them or direct contact to get the information to EVERYONE. Linda said that Genesee County Health Dept is under resourced—funding and people. But they had a great idea, to get AmeriCorp volunteers to go into the low-income neighborhoods and go door-to-door to provide people information on how to protect themselves and their families from the lead in the drinking water. Linda thinks that this idea is moving forward, but the lack of resources may have slowed the effort. I asked about the Governor's office providing additional funding for this project, but Linda said that the Governor's office provided supplemental funding to DEQ and HHS, but she didn't think Genesee County received any supplemental funding. Linda has a call with Genesee County HD this week, so she will check on the status of this project and get back to me. She said she would see if there was something EPA could assist the CHD with.

Jennifer

To: Kuefler, Janet[kuefler.janet@epa.gov]
From: Crooks, Jennifer
Sent: Tue 12/1/2015 9:07:32 PM
Subject: RE: MI Dept of Health and Human Services

I'm just repeating what she said—maybe she said 4th-6th grade reading level.

From: Kuefler, Janet
Sent: Tuesday, December 01, 2015 3:06 PM
To: Crooks, Jennifer <crooks.jennifer@epa.gov>; Poy, Thomas <poy.thomas@epa.gov>; Porter, Andrea <porter.andrea@epa.gov>; Deltoral, Miguel <deltoral.miguel@epa.gov>; Shoven, Heather <shoven.heather@epa.gov>; Damato, Nicholas <damato.nicholas@epa.gov>
Subject: RE: MI Dept of Health and Human Services

I thought that 4th grade reading level was the standard for readability of public information documents.

Janet Kuefler

Ground Water and Drinking Water Branch

State Programs Team Leader

United States Environmental Protection Agency, Region 5

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From: Crooks, Jennifer
Sent: Tuesday, December 01, 2015 3:01 PM
To: Poy, Thomas <poy.thomas@epa.gov>; Porter, Andrea <porter.andrea@epa.gov>; Deltoral, Miguel <deltoral.miguel@epa.gov>; Shoven, Heather <shoven.heather@epa.gov>; Kuefler, Janet <kuefler.janet@epa.gov>; Damato, Nicholas <damato.nicholas@epa.gov>
Subject: MI Dept of Health and Human Services

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Jennifer

To: Peterson, John[peterson.john@epa.gov]; Hedman, Susan[hedman.susan@epa.gov]; Kaplan, Robert[kaplan.robert@epa.gov]; Hyde, Tinka[hyde.tinka@epa.gov]
Cc: Kelley, Jeff[kelley.jeff@epa.gov]; Rowan, Anne[rowan.anne@epa.gov]; Beckmann, Ronna Erin[beckmann.ronna@epa.gov]; Harrison, Melissa[Harrison.Melissa@epa.gov]; Abrams, Dan[Abrams.Dan@epa.gov]; Poy, Thomas[poy.thomas@epa.gov]; Singer, Joshua[Singer.Joshua@epa.gov]; Arcaute, Francisco[Arcaute.Francisco@epa.gov]; Cannon, Phillippa[Cannon.Phillippa@epa.gov]; Deamer, Eileen[deamer.eileen@epa.gov]; Fortin, Denise[Fortin.Denise@epa.gov]; Nowotarski, Allison[nowotarski.allison@epa.gov]; Reshkin, Karen[Reshkin.Karen@epa.gov]; Loop, Travis[Loop.Travis@epa.gov]; Purchia, Liz[Purchia.Liz@epa.gov]; Henry, Timothy[henry.timothy@epa.gov]; Lee, Monica[Lee.Monica@epa.gov]; Grantham, Nancy[Grantham.Nancy@epa.gov]; Distefano, Nichole[DiStefano.Nichole@epa.gov]
From: Cassell, Peter
Sent: Wed 12/2/2015 5:20:58 PM
Subject: Flint Water Clips - Dec 2

FLINT DRINKING WATER CLIPS

US. EPA Region 5 – as prepared by Peter Cassell *(ORA/OEC/PA)* **On Dec. 2, 2015**

In Flint, lead contamination spurs fight for clean water (Michigan Daily)

Flint mayor outlines her goals for her 1st 100 days in office (Michigan Radio)

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https://www.michigandaily.com/section/news/water-and-all-flints-ghosts

The Flint Water Plant is quiet now that all of the Flint River water has been emptied from the plant and the city returns to Detroit Water.

Ruby Wallau/ Daily

Sam Gringlas

Managing News Editor

Wednesday, December 2, 2015 - 3:01am

FLINT, Mich. — On a Saturday evening in October, several hundred trick-or-treaters streamed up and down Calumet Street on the city's east side. Traffic clogged the neighborhood's streets, lined with well-maintained Tudors, Colonials and mature trees cloaked in hues of red and yellow. Princesses, ninja turtles, witches and firemen darted between the cars, and on their front lawn, Bob and Melodee Mabbitt passed out candy from beneath a rain umbrella. The Mabbitt's stretch of Calumet is wealthier than most of Flint's neighborhoods, and draws kids from all over town on Halloween. But this year, along with Snickers, Crunch bars and boxes of Nerds, the Mabbitts were handing out leaflets.

The letters were bold and black, and they warned Flint parents their kids may have been exposed to toxic lead from their drinking water. "You are getting this as a courtesy to let you know that one or more of your neighbors had their tap water tested and was informed they have very high contents of lead and other pollutants in their water," the fliers read. Nayyirah Shariff, a Flint community organizer and friend of Melodee's, slid the white, folded fliers into dozens of old pillowcases and plastic buckets shaped like jack-o'-lanterns. "Don't worry, there's candy, too," she assured a group of kids clad in raincoats. "Happy Halloween!"

In October, Michigan Gov. Rick Snyder (R) announced the city of Flint's drinking water contained elevated levels of lead. A local pediatrician's report the week before had shown a significant jump in the number of Flint children with elevated blood lead levels, and those samples correlated with ZIP codes in which independent water samples pointed to lead contamination. State officials initially discounted the data. Eight days later, they reversed course. The city would again source its water from the Detroit River. For the residents of Flint, it was too little, too late. They had been ringing the alarm over the city's water quality for more than a year, almost immediately after the city opted to treat its water in-house from the Flint River.

Flint had already planned to join a new pipeline, the Karegnondi Water Authority, which would eventually serve mid-Michigan and the state's thumb. Knowing Flint had plans to leave, Detroit's water authority said it would stop supplying water to the city. At the time, Flint was under the control of a state-appointed emergency financial manager who, in a cost-saving move, decided that while the city waited for the KWA to come online, Flint would treat its own water for the first time in decades. Residents say officials brushed off their concerns again and again. They reported that water ran from their sinks discolored in browns, blues and yellows. Then came the hair loss, rashes that wouldn't go away, rotting teeth, discolored shower tiles. In July, the city's mayor drank a glass of water on local morning television to prove the water was safe. It wasn't.

Flint resident Lee Walters shares a photo of herself holding up a water sample taken from her sink during a city council meeting.

Ruby Wallau/ Daily

Melissa Mays, a Flint mother of four, had brought us here, to Calumet Street. Mays, her husband, and their four sons were all diagnosed with lead poisoning last year, and she's spent months working with Shariff, clergy members, activists and a ragtag collective of Flint residents to pressure the city, the state, the feds — anyone, really — to do something. In their living room, about 10 minutes from Calumet, Mays' husband applied zombie makeup to all four kids, his own face and hands already covered in the white, red and black paint. Two candelabras decorated to look like they were covered in spider webs sat atop a tablecloth patterned with skulls. I slid into a chair next to Derek and Ruby, the Daily columnist and photographer who joined me on the trip. A row of electric guitars hung vertically across one wall, and another was plastered with the kids' drawings and class projects. Mays and Shariff, who had come over for the interview, were seated on the table's long side, and I asked how the whole debacle started. Mays spoke with dizzying speed, peppering a timeline of the last two years with talk of trihalomethanes, parts per billion, Freedom of Information Act requests and the federal Lead and Copper Rule. Mays is not a scientist or policy analyst, but it was apparent that, out of necessity, this research has ended up a full-time endeavor.

Not long after water started flowing from the Flint River and into taps and showerheads across the city, residents started noticing their water running yellow and brown. It smelled funny, and tasted strange, too. People were showing up at Flint City Council meetings displaying bottles filled with the brown-colored water. "It's a quality, safe product," Flint Mayor Dayne Walling said at the time. "I think people are wasting their precious money buying bottled water." Four months later, water on the city's west side tested positive for E. coli, and the city issued a series of boil-water advisories. Shariff said she only came across the alerts accidentally when clicking around the city's website; Mays said she didn't hear about them until after the third advisory.

By September 2014, Mays had enough; she was convinced the problem was more than just bacteria. She said her cat was throwing up, her own hair was falling out and a splotchy red rash had started to stretch across her face. Mays' 2-year-old niece was staying in the house then, and every time she took a bath, the toddler broke out with a rash all over her behind. The rash covered only the body parts where the tub's water hit. Eczema cream didn't help, and the child's doctor couldn't figure out what was wrong.

"And I'm like, 'What is happening to this kid?' The rest of us were just used to it. Our skin was turning scaly," Mays said. "My son — my middle child — just had rashes up and down his arms, and if you tried to put lotion on it — it just burned. It was chemical burns. It was on my face, my whole cheek bone. And any time you put anything on it, even makeup, you would just scream because it hurt so bad. But they're on T.V. saying, 'Water's safe, water's safe, water's safe.' "

AUDIO: Hear Flint residents talk about their experiences with city water.

In January 2014, the city distributed a letter notifying homeowners that the city had violated the federal Safe Drinking Water Act — not for lead, but for total trihalomethanes. The city's water was found to contain a high level of trihalomethanes — a cancer-causing chlorine byproduct. By this point, members of City Council called on the governor's appointed emergency manager to abandon the Flint River water source, and the city of Detroit offered to start selling water to Flint again. But Flint's emergency manager opted to stay the course. To investigate, residents called in a water activist, who told Mays not only that she shouldn't drink the water, but that she shouldn't cook or shower with it either. And if the city didn't have a lead problem now, he said, they would soon. Mays didn't know it at the time, but they already did.

"When you're boiling the water to make spaghetti, you're just making all of those heavy metals and all the contaminants basically bond together, and you're basically eating poison food. When you wash your clothes, the heavy metals stay in the fabrics so it's rubbing against your skin all day and god forbid you sweat, you're going to absorb all of that through your pores. So I can't wash my dishes here, I can't do my laundry, I can't move because I'm 16 years into a mortgage and nobody's going to buy my poison water house."

Mays takes us into the kids' bathroom. A five-step instruction sheet for showering was taped to the wall, written by Mays in neat, black marker. Step Two: Sit down and as the tub fills, use the cup and faucet to wash your face and hair. Rinse well. Step Four: Brush your teeth in the sink using bottled water and small cups. Don't forget Q-tips. "Love You!" is scrawled and underlined across the bottom. Next to it another reminder: "Brush Your Hair!" I asked how the kids took to the new routine. "It makes them angry, and then once we found out about the lead, I took out the letting the water fill up, so they just used a big cup to let it go over their heads," she said. "So yeah, my 17-year-old son just loves that, to sit down and use a cup to shower and to use bottled water to brush their teeth."

Mays brought in an outside expert to test the water — Marc Edwards, a professor at Virginia Tech University who specializes in water treatment. She said she drove 62 of the test kits to neighborhoods across Flint, picked them up and helped residents complete them. The lead levels in water at Flint resident LeeAnne Walters' house was averaging 2,500 parts per billion. Her family was losing hair and developing rashes, too. The legal level is 15. In a September 2015 report, Edwards concluded that the corrosiveness of Flint's water was causing lead to leach from the city's aging pipes and into the water. The state maintained it was meeting all lead and copper standards.

An empty lead and copper water sampling bottle in the office of the The Flint Water Plant.

Ruby Wallau/ Daily

On Sept. 24, Dr. Mona Hanna-Attisha, a University alum and a pediatrician at the Hurley Medical Center Children's Clinic in Flint, cross-referenced that data with information the county already had — blood lead levels for infants at ages 1 and 2, which the state is required to test for kids who are at a greater risk of ingesting lead paint chips in older homes. What she found: The number of children in Flint with elevated blood lead levels — defined as 5 micrograms per deciliter or more — had increased from 2.1 percent in the 20 months prior to Sept. 15, 2013, to 4 percent between Jan. 1 and Sept. 15, 2015. In several ZIP codes, those figures increased from 2.5 percent to 6.3 percent during that same time period.

"Everyone who has challenged the narrative — which was 'the water is safe to drink' — they were minimized," Shariff said.

But the evidence built up, and eventually it was hard to ignore there was a problem. Finally, on Oct. 8, 2015 — nearly two years after Flint residents started drinking water from the Flint River — the state changed course and announced they had come up with a $12 million deal to allow the city to return to Detroit water. “I’m in full support of the return to the Great Lakes Water Authority,” Snyder said during the announcement. “We all care about the citizens of Flint.” Snyder promised to convene a task force — which includes a University professor and several University alums — that would determine what went wrong. Detroit water would again run through Flint’s pipes, and Flint’s parents could rest easy knowing their kids’ drinking water was safe.

But Mays says people shouldn’t be so quick to chalk the case up as a crisis averted. The story of water in Flint is not confined to that period of two years when the city’s water was unsafe for drinking — or by the final hurrah moment in October when the good guys fighting the good fight won the day. Flint’s challenges also reach further, into a history colored by the population loss and decay that made it easy to brush the city aside, as well as into a future that these two years will in many ways shape.

A timeline of Flint's water struggles.

Design by Emily Schumer

On the banks of the Flint River

You could argue the city of Flint, like a lot of cities, was born from the river. The confluences between city and water stretch back far — to a time when native people fought over the river’s banks. A handful of fords, where the river could be easily traversed, made the land highly sought after. In 1819, before the great industrial might of Buick City generated wealth and helped the city’s population grow, and before the city’s slide into poverty and decay, a fur trapper and his wife set up a post near the river’s banks. For the traders who came here — and to Michigan, a territory hugged on four sides by the Great Lakes — water was life-giving. The rivers provided habitat to beavers, and the water ferried birch-bark canoes downstream, piled up with pelts for sale back East and across the vast Atlantic.

In later years, Michigan’s rivers and lakes were clogged with logs, floated downstream for processing into lumber that would build this nation’s cities. The water fed the state’s growing agricultural economy as well as the companies that empowered the United States’ industrial might — industries that allowed old lumber towns across the Rust Belt to boom, before they would hemorrhage wealth and population a few decades later. Today, water is the basis for Michigan’s wildly successful “Pure Michigan” advertising campaign, which helps drive the state’s vibrant tourism industry in the towns dotting Lake Michigan. For a whole lot of Michiganders, their Michigan and their Midwest does not include the vast and aging networks of pipe that snake beneath the earth, nor the sediment-colored water of the rivers Rouge, Flint, Detroit and Saginaw.

“We connect to water very emotionally, we love our water, it’s Pure Michigan, it’s why that ad campaign really sings to us,” John Austin, a University of Michigan lecturer and co-author of a report on Michigan’s ‘Blue Economy,’ told me during a phone interview later in the week. “And so we appreciate that even more than this hidden water infrastructure that brings us clean water and is essential to basic life and health.”

Today, one in five jobs in Michigan are linked to water, and Austin said the state could play a major role in developing innovative ways to use water more efficiently, particularly as water resources grow increasingly strained. But as much as Michiganders — residents of a state whose surrounding Great Lakes contain 20 percent of the world’s surface freshwater supply — love their water resources, Austin says it’s easy to forget about the hidden infrastructure that delivers fresh water to taps on demand.

“What Flint really illustrates is … as a first order of business, we depend on water for life and that water has to be clean and available to people,” he said. “What Flint exposed is our water infrastructure — that in every community in Michigan we’ve got aged infrastructure and this shows that since we haven’t invested in remaking our water infrastructure — in rebuilding those systems — they can potentially kill us.”

For Austin, this dynamic illustrates the need to invest not only in infrastructure above ground, such as roads and bridges, but also in the infrastructure that sits below the surface. With debate over paying to fix Michigan’s roads reaching a boiling point last spring, Austin said people should be just as concerned with the invisible infrastructure — particularly the pipes that shepherd clean drinking water into our homes every day.

The Flint Water Plant is quiet now that all of the Flint River water has been emptied from the plant and the city returns to Detroit Water.

Ruby Wallau/ Daily

Through the pipes, below the ground

After Halloween, I spent a week trying to get into Flint's water plant. When I spoke to Mike Glasgow, the city's utilities director, on the phone, he told me how excited he was to hear young people were interested in municipal water delivery. But in the days leading up to the final reporting trip to Flint, the woman who handles his schedule kept telling me to call back later; she hadn't had a chance to nail anything down. By Thursday evening, I wasn't getting any response at all. I decided I would just show up at the facility anyway.

The Flint Water Treatment Plant sits on a sprawling campus just off the freeway. The complex is circled with tall chain-link fencing topped with barbed-wire spirals. A long driveway leads up to the main building, which is sand-colored and doesn't boast much in the way of decorative finishes. A white water tower hulks above the building, around which another half-dozen smaller structures are gathered. Only a handful of cars congregated in the parking lot, and a sign in one of the front windows indicated the office entrance is around back. Inside, the plant's office was drab and dated. Paper maps hang on the paneled walls, and a collection of empty lead and copper water sampling bottles rest on a shelf nearby. I found Brent Wright, the plant's supervisor, in an office lined with dozens of binders. Wright looked understandably confused when we enter. "Hi, we're here for a tour of the plant," I said enthusiastically. "Mike knows we're coming." I only half-lied. I started to sweat a bit when he dialed up Glasgow to make sure the story checked out, but when Wright hung up the phone, he told us, "The best place to start is from the beginning."

Flint's first water treatment plant was built in 1917. The original red brick building stands a few hundred yards from the present facility, and looks a lot like an abandoned automobile factory. Many of the square panes of glass are smashed in, and Wright tells me the roof collapsed a few years back. The city built a second facility, the current plant, in 1952, but it would only operate fully until 1967, when the city stopped treating its own water and started buying it from Detroit. During the peak of Flint's prosperity and population, when sprawling factories turned thousands of GM cars off production lines, both plants together pumped 100 million gallons of water per day. Today, with most of those factories shuttered and the city's population significantly depleted, the Flint plant was only pumping about 16 million gallons daily when it last operated in October. In 1960, 196,940 people lived in Flint, according to the U.S. Census. Today, 99,002 people call this 33-square-mile city home.

With the city back on Detroit water, there wasn't much going inside Flint's water treatment plant during the visit. The final gallons of Flint River water had just been emptied out the week before. A few construction workers wearing hard hats moved through the massive building's darkened cement corridors, getting the place ready for the KWA pipeline to go live a few years down the road. The process for cleaning and distributing water is not incredibly simple. Wright is well versed in it after 25 years working his way up at the plant. First, the water is pumped from the river. Until it's pumped back out of the factory as clean drinking water, that's the only part of the process that isn't propelled by gravity. From there, the water is lifted into chambers for ozone treatment, created by putting together electricity, oxygen and nitrogen, which kills much of the bacteria.

The Flint Water Plant is quiet now that all of the Flint River water has been emptied from the plant and the city returns to water from the Detroit river.

Upstairs, where generators create this ozone, I asked why didn't the plant know there would be a corrosion problem, and add corrosion control into the process. Water is corrosive by nature, but after years of industrial waste dumped into the river, it was especially so. "Basically, by being a softening plant, we didn't think we were going to need corrosion control," Wright said. "It was brought up in a meeting and the DEQ said, 'No, let's wait and see what your lead and copper sampling is and then we'll look into corrosion control.' " Wright went on to say that the switch back to Detroit was unnecessary and that the city could have handled the problem on its own. "Yeah, we could have taken care of it," he said. "We're doing it now. We're setting up corrosion control now because they're saying this water has stripped some of the heavy phosphates out of the pipes over this last year that had built up when we were on Detroit water, so we're adding more phosphates."

Wright led us through the plant's laboratory, where glass jars, beakers, lab coats and clipboards lined the walls. From there, we followed a series of dim hallways into a massive room where sediment is removed from the water. A catwalk stretched across a giant reservoir-like chamber I figured could hold the water of several dozen swimming pools. Without the lights on, seeing the bottom proved difficult, even as we moved across the walkway suspended directly over it. Back when water was still held here, enormous paddles would have rotated through the water, pushing sediments to the bottom and separating them from the clean water. Peering down into the empty vat felt like standing on a deserted basketball court after the floodlights have been turned off and the crowds have all gone home.

While Wright kept talking about turbidity, lime and filtration, I couldn't get over the bigness of the whole thing — not only the millions of gallons that once moved through this place each day, but also the weightiness of the task at hand. That charge — to ensure the safety of the water that makes its way into your toddler's bathtub, mixes your baby's formula and washes down your grandpa's heart medicine — is clearly a heavy burden, a task that's unquestionably important to get right.

Policy failure

The debate over what happened in Flint will likely continue for some time. The governor has convened an independent task force to investigate, and the EPA is releasing their own report on the situation. A recent Michigan Radio report suggested the state told city officials to leave two incredibly high water samples off their official water test report — allowing recorded lead levels in the water to remain below the legal threshold. Many of the sources said they thought officials should be fired, and some should get jail time for what happened in Flint. I had hoped to ask Walling, Flint's mayor, about all of this, but his press secretary instead offered Howard Croft, head of the city's Department of Public Works. Walling had the day before received an early punishment from the city's residents: His bid for re-election was defeated.

A few days after Croft asked to reschedule the interview, he resigned. "It is with deep sadness that I tender my immediate resignation," the longtime Flint resident appointed to oversee the water switch wrote in a statement. "With the city engaged in transition and working to regain public trust, I believe that now is the right time for me to step down from this position."

It's hard to argue that elected and appointed officials didn't majorly drop the ball on a lot of levels. Whether that's the result of negligence, malintent or political weakness, people disagree. Edwards, the Virginia Tech professor, says it was the Michigan Department of Environmental Quality's job to ensure the city managed the switch appropriately. Glasgow, the utilities manager, said the state told him to take two particularly high samples off his report. "They instructed me to take it off the report," he told Michigan Radio in October. "I don't know that I can give you a good enough answer to tell you why they decided to remove it from the report." The house those samples came from? LeeAnne Walters'.

Walters said the city was also padding its reporting with loopholes in the federal Lead and Copper Rule that allowed the city to pre-flush the water for five minutes before taking a sample and to use narrow-mouthed bottles that required a slower water stream and wouldn't show accurate lead readings. She said those loopholes must be closed, and she's already lobbying government officials to do so. A Detroit pastor recently filed an unsuccessful petition with the state Board of Canvassers to get a proposal on the ballot to recall Snyder for his failure to intervene in the water crisis. Several lawsuits have also been filed, including one in which Mays is listed as a complainant and another class action suit against Snyder, Walling and 10 other state and local officials, including Croft and Glasgow.

"What (we) would say is that we're focused on moving forward and ensuring public health and clean, safe drinking water," Snyder's press secretary Sara Wurfel told The Flint Journal after the filing. "The governor has outlined a detailed multiple step action plan for both immediate, mid and long term."

No resignations are going to alleviate the scars left by lead. But as finely woven as this issue is — with complicated timelines, players and literal chemical equations — maybe it's actually pretty simple. Government officials messed up big time, and a majority Black city with some of the state's poorest residents had to pay for it. No matter how you spin it, public policy failed. Officials did not serve the people they had promised to protect.

I thought about what Walters said at her kitchen table when I asked her whether she thought the mayor didn't step in because he didn't want to or because he didn't have enough power to do anything. "That's a loaded question," she told me. "I've debated that with people many times. I always get the, 'Well, in politics…' Well I don't want to hear about politics. Every politician has a human side, and I don't care what the politics of it is. Knowing that children were being poisoned, you stand up and you do what's right, and if you don't do that, then you don't deserve to hold the position that you have. You are there because the people put you there. You should be doing what your citizens need to do. Even if you don't have the power to make a change, you have a voice, you stand with your people."

Flint resident Lee Walters demonstrates the slow water stream used by the the city to pad its federal Lead and Copper tests in her relatives kitchen on Nov. 6, 2015.

Ruby Wallau/ Daily

Beyond all the blame passing, if we can't expect and trust that our drinking water — a resource people literally can't live without — will be clean and safe, then Flint residents have started asking who and what can we trust? I would imagine that's what a lot of folks in Flint are thinking through when they wake up to brush their teeth or wash their faces before bed. And that has incredible ramifications.

"I think there's a serious trust issue in this community," Hanna-Attisha said. "We're in 2015, we're in the middle of the Great Lakes and we don't have access to safe drinking water. And we trust that our government regulates these things. There's rules that will ensure that public health is protected. It's mind-boggling that it's not. And if these rules are not going to be strengthened or enforced, then the public needs to take it on their own to make sure that they have access."

In Flint, change occurred when residents, not public officials, called foul. "Our residents were complaining for months and months that their water was brown, it smelled bad, it tasted bad, there was E. coli in it and in other communities with louder, more affluent voices, it wouldn't have lasted this long," Hanna-Attisha said.

I asked Mays if she thought this would have happened in a place like Bloomfield, Ann Arbor or Farmington Hills, the city where I'm from. With a median household income of $24,834, Flint is a city where 41.5 percent of residents live below the poverty line. She cut in before I could finish. "No."

"People don't want to acknowledge that there's been a problem," Shariff said. "This isn't like a hurricane where stuff is happening that you have no control over. This isn't an act of god."

Mays interrupts her. "This problem is man-made."

Though the problem was finally illuminated, it was not by government regulators, health officials or elected leaders, but by regular people like Mona Attisha-Hana, Melissa Mays and LeeAnne Walters. Attisha-Hana is a pediatrician. Mays does PR for a radio station. Walters is a stay-at-home mom. The community forced action from the city and state. Sure, residents acted with the interests of their own kids in mind, but also seem to have been driven by something bigger: by a sense that they owed something to their neighbors.

I wonder whether the dynamic in Flint — where the community was forced to serve as sole government watchdog — will simply become the new paradigm there, or whether the events of the last two years will spur some kind of wake-up call reverberating through city halls, water treatment plants, statehouses and governor's mansions all across the country.

Future in Flint

For Mays, the switch back to Detroit water hasn't changed much in her day-to-day life. The family still runs all their drinking water through a blue filter they keep on the fridge's top shelf. The corrosive river water likely wore away the phosphate coating on the city's lead pipes — and that could take years to build back up again. There are also the physical markers left by lead.

"Well now, my kids got to get tutors," Mays said on Halloween, as her kids prepared their costumes in the next room over. "I talked to my son's teacher this week and he's struggling in algebra, something he did great in before all this. My youngest, same thing. My middle child, has since he was younger, they've always wanted to bump him up, bump him up. He's got his first C and I'm beyond furious. Not to mention the physical things. My oldest has two holes in his teeth, on the smooth sides. That doesn't happen unless your teeth and crumbling from the inside out and the dentist said that's because of the lead poisoning. And they're all adult teeth, so what's he supposed to do, get dentures? And then the fact that my son fell off his bike and he had two buckle fractures on his wrist from catching himself, just falling over. That means his bones are weak. He complains all the times about how his bones hurt. 'My back hurts, my leg hurts, Mom.' Because you have severe bone pain with lead poisoning and I've got the same thing.

"I feel horrible. I want to help them, and there's nothing I can do as a mother and that infuriates me because people did this to us, people allowed it to continue to happen, they didn't speak up. The citizens who are sick spoke up and that's not our job, but it's become our lives and there's people worse off than me who can't afford the medications, can't afford the extra doctors."

Hanna-Attisha says the costs of Flint's water debacle will have ripple effects decades and generations down the road.

"When the kid is 5, they're going to need special education, when that kid is 10, they're going to get an ADHD diagnosis and have behavior problems," Hanna-Attisha told me during one of our telephone conversations. "And when that kid is 16, they're going to have problems with the criminal justice system. Imagine what that does to an entire population. So we have just shifted the entire population curve — their IQ curve. We've lost all of our high-achieving 130 kids who are going to go to U-M, who are going to come up with the next cure for cancer and we have now tons more kids with low 70 range who need more remedial services. As a population, it is absolutely damning. The state thinks they solved the problem when they went back to Detroit water. The money they gave is a down payment. This is a long-term problem."

"Those are dreams derailed," Shariff told me. "Because people have hopes and aspirations and because being exposed to lead and copper, they're going to have to create a new paradigm."

Whether lead poisoning will necessarily land a whole generation of kids in jail, it's hard to know. But a lot of the problems wrought by Flint's water crisis aren't going to fade away easily. Their appearance in The New York Times, and on the policy agendas of government officials very well might, but the physical and emotional ramifications will likely linger for a long time. Walters, who recently relocated to Virginia but returns to Flint to keep stoking the fight for clean water, isn't letting her kids drink the tap water in their new home. Not until it's tested, at least. Even outside of Flint, one of her sons has started asking whether the water is safe to drink each time he wants to drink a glassful.

By 7:00 on Halloween, the rain wasn't letting up on Calumet Street, and it was starting to get dark. Mays asked if we wanted to walk with her for a while longer. Mayor Walling, who lives a couple blocks over on Court Street, was up for re-election on Tuesday, and Mays had plenty of door hangers to hand out for that cause, too. I was hungry and needed to go to the bathroom, so we declined. I didn't want to do any of those things in Flint, in the city where the water had been poison.

We got in the car, set the GPS for home, and left Calumet. We left the Mays family, the trick-or-treaters, the Flint River and the whole city behind us. Our Chevy barreled down U.S.-23 toward Ann Arbor — where that night I would turn on my faucet to wash my hands, fill my lazily cleaned pots with water, rinse off dishes stained with Prego and then let the shower's hot water pour over my face, settling into the metal drain below my bare feet. I envisioned the water rushing through the walls and then under the city's streets, houses and parking lots, moving through the pipes like some kind of trick-or-treat ghost.

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http://michiganradio.org/post/flint-mayor-outlines-her-goals-her-1st-100-days-office#stream/0

By Steve Carmody • 20 hours ago

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Flint's new mayor has laid out her priorities for her first hundred days in office. Not surprisingly, the plan largely reflects the issues she stressed in her campaign.

"I'm not trying to do it by myself," Flint Mayor Karen Weaver told a small audience at city hall, "I need all of you, and the people that are out there, to help."

Credit Steve Carmody / Michigan Radio

Karen Weaver defeated incumbent mayor Dayne Walling in last month's election. She's been on the job for nearly a month.

Even though roughly a quarter of her first hundred days have passed, the mayor says now was a good time to update people on her plans for her first 100 days.

A top priority for the mayor is having Flint's problem plagued water system declared a federal disaster. The decision to switch the city from Detroit water to the Flint River lead to numerous problems, including high lead levels in the drinking water.

Mayor Weaver says she's talked with Michigan U.S. Senators Debbie Stabenow and Gary Peters about the problem. She hopes to recruit other congressional and state lawmakers to help lobby for the designation.

Along with fixing Flint's water, Weaver says during her first hundred days she wants to make progress toward returning the city to total local control.

Flint was run by an emergency manager, appointed by the governor, for much of the past four years. The last emergency manager left in April. But decisions by elected city officials can still be overruled by a transition advisory board. Weaver hopes to hasten the end of that last level of state oversight.

Weaver says there are other issues she wants to address during her first 100 days in the mayor's office, including a review of Flint's still wobbly city finances and the creation of programs for the city's children.

Weaver admits not everything in her 100 day agenda will be completed in her first 100 days. She also admits she needs help.

"I'm not trying to do it by myself," Weaver told a small audience at Flint city hall, "I need all of you, and the people that are out there, to help."

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To: Kaplan, Robert[kaplan.robert@epa.gov]
Cc: Hyde, Tinka[hyde.tinka@epa.gov]; Fortin, Denise[Fortin.Denise@epa.gov]
From: Hedman, Susan
Sent: Fri 12/4/2015 6:33:42 PM
Subject: MDHHS releases latest data outlining blood lead levels in Flint; Follow-up care, case management resources continue for families

Hi Bob -- Please share with the Task Force – and also please mention on the next call with congressional staff.

http://www.michigan.gov/mdhhs/0,5885,7-339--370518--,00.html

MDHHS releases latest data outlining blood lead levels in Flint; Follow-up care, case management resources continue for families

Contact: Jennifer Eisner 517-241-2112

For Immediate Release: December 3, 2015

LANSING, Mich. – Preliminary data indicates that 30 of 1,361 adults and children tested in Flint since October 1 had elevated blood lead levels, according to a report issued today by the Michigan Department of Health and Human Services.

This marks the first summary report on lead testing called for in the state's action plan related to health concerns about Flint's water infrastructure.

"Our goal is to help families reduce their exposure to lead sources," said Dr. Eden Wells, MDHHS chief medical executive. "We have made progress in testing and identifying those with elevated blood lead levels, and the department will continue to work closely with the Genesee County Health Department to reach these families. We will remain diligent in our ongoing outreach and education efforts."

Information comes from tests administered citywide to 1,361 children and adults since October 1. Tests showed that 21 of 969 children age 17 or younger and 9 of 392 adults over the age 18 were identified with elevated blood lead levels.

The report covers test results reported to MDHHS since the state action plan was put in place Oct. 2. It includes the number of tests and number of elevated blood lead levels greater than 5 micrograms per deciliter, and captures both capillary and venous blood tests that have been reported to MDHHS since the beginning of October. People who have had multiple tests are counted only once. Five micrograms per deciliter is the level that the Centers for Disease Control and Prevention considers elevated and triggers health care professional follow up with families.

The full report is posted online at www.michigan.gov/flintwater and will be updated as more data becomes available.

When reviewing historical trend data, the risk of lead exposure is highest during the third quarter of each year – July through September. Seasonal variation is the result of a number of factors including increased exposure to lead in dust and soil in the summer months.

In the third quarter of 2010, 8.3 percent of Flint children 6 and under showed elevated blood lead levels. The figure gradually decreased to 4.1 percent in the third quarter of 2013. During the same months in 2014, the figure increased to 7.5 percent and decreased to 6.4 percent in the third quarter of 2015.

Last month, MDHHS collaborated with the county health department and local partners to distribute educational resources and informational letters to Flint parents regarding lead testing. The state is providing funding for GCHD nurses to work with families when an elevated blood lead level has been detected. During these follow-up visits, nurses coordinate with environmental health investigators to meet with families in their homes to identify lead exposures, address questions and provide water filters. People can be exposed to lead from paint, soil, plumbing and other sources.

MDHHS continues to provide free water filters and replacement cartridges to Flint residents at four locations, including the MDHHS Flint offices and the Genesee County Community Action Resource Department. For a full list of locations and hours of distribution, visit www.michigan.gov/flintwater.

To help residents properly install water filters, and to demonstrate how to replace the original when it expires, MDHHS has created an instructional video on its YouTube channel. For updates, visit www.michigan.gov/flintwater.

Susan Hedman

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From: Hedman, Susan
Sent: Fri 12/4/2015 6:34:38 PM
Subject: FW: MDHHS releases latest data outlining blood lead levels in Flint; Follow-up care, case management resources continue for families

FYI

From: Hedman, Susan
Sent: Friday, December 04, 2015 12:34 PM
To: Robert Kaplan <Kaplan.Robert@epa.gov>
Cc: Tinka Hyde <Hyde.Tinka@epa.gov>; Fortin, Denise <Fortin.Denise@epa.gov>
Subject: MDHHS releases latest data outlining blood lead levels in Flint; Follow-up care, case management resources continue for families

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MDHHS continues to provide free water filters and replacement cartridges to Flint residents at four locations, including the MDHHS Flint offices and the Genesee County Community Action Resource Department. For a full list of locations and hours of distribution, visit www.michigan.gov/flintwater.

To help residents properly install water filters, and to demonstrate how to replace the original when it expires, MDHHS has created an instructional video on its YouTube channel. For updates, visit www.michigan.gov/flintwater.

Susan Hedman

Region 5 Administrator/Great Lakes National Program Manager

U.S. Environmental Protection Agency

77 West Jackson Blvd - 19th Floor

Chicago, Illinois 60604-3590

To: Hedman, Susan[hedman.susan@epa.gov]
Cc: Hyde, Tinka[hyde.tinka@epa.gov]; Fortin, Denise[Fortin.Denise@epa.gov]
From: Kaplan, Robert
Sent: Fri 12/4/2015 6:43:38 PM
Subject: RE: MDHHS releases latest data outlining blood lead levels in Flint; Follow-up care, case management resources continue for families

Will do. -- Bob

Robert Kaplan

Deputy Regional Administrator

U.S. EPA Region 5

Phone: (312) 886-1499

Cell: (312) 515-9827

Fax: (312) 692-2075

From: Hedman, Susan
Sent: Friday, December 04, 2015 12:34 PM
To: Kaplan, Robert <kaplan.robert@epa.gov>
Cc: Hyde, Tinka <hyde.tinka@epa.gov>; Fortin, Denise <Fortin.Denise@epa.gov>
Subject: MDHHS releases latest data outlining blood lead levels in Flint; Follow-up care, case management resources continue for families

Hi Bob -- Please share with the Task Force – and also please mention on the next call with congressional staff.

http://www.michigan.gov/mdhhs/0,5885,7-339--370518--,00.html

MDHHS releases latest data outlining blood lead levels in Flint; Follow-up care, case management resources continue for families

Contact: Jennifer Eisner 517-241-2112

For Immediate Release: December 3, 2015

LANSING, Mich. – Preliminary data indicates that 30 of 1,361 adults and children tested in Flint since October 1 had elevated blood lead levels, according to a report issued today by the Michigan Department of Health and Human Services.

This marks the first summary report on lead testing called for in the state's action plan related to health concerns about Flint's water infrastructure.

"Our goal is to help families reduce their exposure to lead sources," said Dr. Eden Wells, MDHHS chief medical executive. "We have made progress in testing and identifying those with elevated blood lead levels, and the department will continue to work closely with the Genesee County Health Department to reach these families. We will remain diligent in our ongoing outreach and education efforts."

Information comes from tests administered citywide to 1,361 children and adults since October 1. Tests showed that 21 of 969 children age 17 or younger and 9 of 392 adults over the age 18 were identified with elevated blood lead levels.

The report covers test results reported to MDHHS since the state action plan was put in place Oct. 2. It includes the number of tests and number of elevated blood lead levels greater than 5 micrograms per deciliter, and captures both capillary and venous blood tests that have been reported to MDHHS since the beginning of October. People who have had multiple tests are counted only once. Five micrograms per deciliter is the level that the Centers for Disease Control and Prevention considers elevated and triggers health care professional follow up with families.

The full report is posted online at www.michigan.gov/flintwater and will be updated as more data becomes available.

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Susan Hedman

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Chicago, Illinois 60604-3590

To: Lytle, Darren[Lytle.Darren@epa.gov]; Kempic, Jeffrey[Kempic.Jeffrey@epa.gov]; Poy, Thomas[poy.thomas@epa.gov]; Timothy Henry[Henry.Timothy@epa.gov]; Deltoral, Miguel[deltoral.miguel@epa.gov]; Schock, Michael[Schock.Michael@epa.gov]
From: Kaplan, Robert
Sent: Fri 12/4/2015 6:45:43 PM
Subject: FW: MDHHS releases latest data outlining blood lead levels in Flint; Follow-up care, case management resources continue for families

Task Force Members,

See below. I will also be sending some data we received from Jim Sygo at MDEQ on blood lead levels. -- Bob

Robert Kaplan

Deputy Regional Administrator

U.S. EPA Region 5

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Cell: (312) 515-9827

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Susan Hedman

Region 5 Administrator/Great Lakes National Program Manager

U.S. Environmental Protection Agency

77 West Jackson Blvd - 19th Floor

Chicago, Illinois 60604-3590

To: Kaplan, Robert[kaplan.robert@epa.gov]
From: Hedman, Susan
Sent: Fri 12/4/2015 11:05:20 PM
Subject: Is this accurate?

Thank you for your November 6, 2015 letter regarding the U.S. Environmental Protection Agency's Flint Safe Drinking Water Task Force.

As a result of your letter, we have scheduled weekly calls to brief your staff on the work that the EPA Task Force is doing to provide technical assistance to the State of Michigan and the City of Flint. During those calls we have discussed the Task Force's work with the State and the City to optimize corrosion control for the Flint system, following the decision to switch to drinking water supplied by the Great Lakes Water Authority. We have also discussed the work that the Task Force is doing to help the State and City prepare for the planned switch to water supplied by the Karegnondi Water Authority in 2016. We will continue to provide weekly briefings on Task Force activities for as long as your staff finds the briefings to be useful.

Thank you again for your letter . . .

Susan Hedman

Region 5 Administrator/Great Lakes National Program Manager

U.S. Environmental Protection Agency

77 West Jackson Blvd - 19th Floor

Chicago, Illinois 60604-3590

To: Hedman, Susan[hedman.susan@epa.gov]
From: Kaplan, Robert
Sent: Fri 12/4/2015 11:07:42 PM
Subject: RE: Is this accurate?

Yes. Accurate.

Robert Kaplan

Deputy Regional Administrator

U.S. EPA Region 5

Phone: (312) 886-1499

Cell: (312) 515-9827

Fax: (312) 692-2075

From: Hedman, Susan
Sent: Friday, December 04, 2015 5:05 PM
To: Kaplan, Robert <kaplan.robert@epa.gov>
Subject: Is this accurate?

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Susan Hedman

Region 5 Administrator/Great Lakes National Program Manager

U.S. Environmental Protection Agency

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To: Marquardt, Steve[marquardt.steve@epa.gov]; Baltazar, Debbie[baltazar.debbie@epa.gov]; Hyde, Tinka[hyde.tinka@epa.gov]
Cc: Davis, CatherineM[Davis.CatherineM@epa.gov]; Fortin, Denise[Fortin.Denise@epa.gov]
From: Deamer, Eileen
Sent: Mon 12/7/2015 2:49:21 PM
Subject: Article on loan forgiveness

Loan forgiveness sought for Flint to replace lead pipes

Chad Livengood, Detroit News Lansing Bureau 12:07 a.m. EST December 6, 2015

House of Prayer Missionary Baptist Church members Melvin Gillespie, left, and Robert Burns, right, load water into Flint resident's cars during a bottled water giveaway in Flint in September.(Photo: John M. Galloway / Detroit News)

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The Michigan Department of Environmental Quality is in talks with Flint officials about financing forgivable loans to replace lead-leaching water pipes while U.S. Rep. Dan Kildee is pursuing federal forgiveness for the city's nearly $21 million in past loans for drinking water infrastructure improvements.

Kildee said Friday he wants the U.S. Environment Protection Agency to forgive Flint's debt to a federally-funded clean drinking water loan fund to free up money for the cash-strapped city to invest in replacing aging water lines linked to elevated lead levels in the blood of some Flint children and adults.

Lead leached from Flint's water pipes between April 2014 and October when the city was pumping its drinking water from the corrosive Flint River. In October, after Flint doctors found children exposed to lead poisoning, the city switched its water source back to Detroit's treated Lake Huron water.

"(Flint) could use that money for new improvements that will help offset the damage that was done by this terrible mistake because it did have permanent impact not just on people but on the system itself," Kildee said Friday after a taping of WKAR-TV's "Off The Record."

Kildee, D-Flint, said Flint also could use the debt relief to lower water rates for residents.

"They pay almost the highest amount for the worst water," Kildee said.

Flint's four past loans for drinking water infrastructure improvements come from a state-managed fund at the Department of Environmental Quality.

But the EPA would have to approve forgiving the old loans, DEQ spokesman Brad Wurfel said.

"We can do loan forgiveness at some level on new loans, and we are discussing this possibility with the city of Flint," Wurfel said Friday.

The EPA has already agreed to let the DEQ finance new forgivable loans for Flint to replace private water service lines running up to homes that are old and leaching lead into the city's drinking water, Kildee said.

"They need to move forward on that," Kildee said of DEQ.

DEQ has asked Flint officials for studies and documentation about the city's needs, assessment management and capital improvement plans for its underground water service system, Wurfel said.

Gov. Rick Snyder's administration pledged in October to assist Flint in a long-term replacement of water service lines with lead in the pipes damaged by the corrosive Flint River water.

At Snyder's request, the Legislature quickly appropriated $6 million to cover half of the $12 million cost to reconnect Flint to Detroit's water. The Snyder administration also freed up $1 million to provide free faucet water filters residents to remove lead.

DEQ Director Dan Wyant discussed new loans for replacing water lines that could be forgiven during meetings Thursday and Friday with newly elected Flint Mayor Karen Weaver and other city officials, Wurfel said.

Kildee also said Friday he's pushing for Snyder to establish a health care fund for the long-term needs of as many as 7,000 Flint children who may have been exposed to lead poisoning in the city's water.

The Democratic congressman wants the Republican governor's administration to create a database tracking the health and nutrition of Flint children potentially harmed by lead-tainted water. Such an effort by state government "is not a big lift," Kildee said.

"We ought to be able to do that," Kildee said. "We know who they are."

Snyder spokesman Dave Murray said the governor's Flint water task force is preparing a long-term plan for dealing with the city's water problems.

"We expect the group's report to include a set of recommendations moving forward," Murray said Friday in an email. "State agencies also are continuing with Gov. Snyder's action plan, which includes distributing filters and continuing testing and other steps that will help Flint with its water infrastructure challenges."

Flint residents can get more information about getting their water tested for lead or getting a free water filter online at www.michigan.gov/flintwater or by calling (810) 787-6537.

To: Peterson, John[peterson.john@epa.gov]; Hedman, Susan[hedman.susan@epa.gov]; Kaplan, Robert[kaplan.robert@epa.gov]; Hyde, Tinka[hyde.tinka@epa.gov]
Cc: Kelley, Jeff[kelley.jeff@epa.gov]; Rowan, Anne[rowan.anne@epa.gov]; Beckmann, Ronna Erin[beckmann.ronna@epa.gov]; Harrison, Melissa[Harrison.Melissa@epa.gov]; Abrams, Dan[Abrams.Dan@epa.gov]; Poy, Thomas[poy.thomas@epa.gov]; Singer, Joshua[Singer.Joshua@epa.gov]; Arcaute, Francisco[Arcaute.Francisco@epa.gov]; Cannon, Phillippa[Cannon.Phillippa@epa.gov]; Deamer, Eileen[deamer.eileen@epa.gov]; Fortin, Denise[Fortin.Denise@epa.gov]; Nowotarski, Allison[nowotarski.allison@epa.gov]; Reshkin, Karen[Reshkin.Karen@epa.gov]; Loop, Travis[Loop.Travis@epa.gov]; Purchia, Liz[Purchia.Liz@epa.gov]; Henry, Timothy[henry.timothy@epa.gov]; Lee, Monica[Lee.Monica@epa.gov]; Grantham, Nancy[Grantham.Nancy@epa.gov]; Distefano, Nichole[DiStefano.Nichole@epa.gov]
From: Cassell, Peter
Sent: Mon 12/7/2015 6:27:26 PM
Subject: Flint Water Clips - Dec 7

Crusading Flint doctor says 'we're not done' fighting fallout of lead in water (Flint Journal)

http://www.mlive.com/news/flint/index.ssf/2015/12/crusading_flint_doctor_says_we.html

1 / 16

Dr. Mona Hanna-Attisha is the program director for the pediatric residency at the Hurley Children's Hospital at Hurley Medical Center in Flint, Mich, and is attempting to track blood lead levels in Flint children. Sean Proctor | MLive.com

Sean Proctor | sproctor@mlive.com

Print Email

By Ron Fonger | rfonger1@mlive.com
on December 07, 2015 at 5:00 AM, updated December 07, 2015 at 10:35 AM

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flint water

- Seven things you don't know about Flint's crusading water crisis doctor
- Crusading Flint doctor says 'we're not done' fighting fallout of lead in water
- Water tests conducted at Flint homes by Wayne State University researchers
- Preliminary state data shows drop in rate of elevated lead levels in Flint
- New tests show toxic lead in plumbing at Flint elementary schools

All Stories

FLINT, MI — You may have thought Flint's lead in water crisis was drawing to a close, but the Hurley Medical Center doctor who played a critical role in ending the city's use of the Flint River has other plans.

"I am not going to sit back and just see what happens ... so that in 20 years these Flint kids will (have been) nothing more than statistics on the consequences of lead poisoning," said Dr. Mona Hanna-Attisha.

"We can sit back and do nothing, but we have an incredible opportunity to do something," she said.

The director of Hurley Medical Center's Pediatric Residency Program, whose research first showed rising levels of lead in the blood of Flint children, is expanding her data-driven work and also pushing to create a model public health program here — one aimed at offsetting the damage that's been caused by high levels of lead in water.

A mother of two who learned pediatrics as a medical student in Flint 15 years ago, Hanna-Attisha went public with her research on blood lead levels in infants and children on Sept. 24, a time when city officials were still insisting that the city's drinking water was safe and state government officials initially questioned the validity of her work.

One day after the release of the study, former mayor Dayne Walling, who pushed the ceremonial button to change the city's water source from Detroit to the Flint River, joined in declaring a public health emergency in response to spiking lead in water levels.

Within two weeks of the study's release, Gov. Rick Snyder announced a plan for financing the city's reconnection to the Detroit water system and praised the doctor's work.

Today, Hanna-Attisha is working on two fronts: to further monitor blood lead levels, as well as providing better tracking of victims of lead exposure and pushing for better support services for children who have been exposed to elevated lead levels.

An investigative team is looking for lead in the blood on every baby born at Hurley and tagging the medical records of every child who was exposed to Flint water since April 2014.

With support from the Hurley Foundation, it's also updating and breaking down data on blood lead levels, work that could make it easier to identify which areas of the city have the worst lead problems.

"We are going to assess the heck out of what happened ... We're not done," Hanna-Attisha said. "We failed at preliminary prevention so now we have to move to secondary prevention."

When children's files are tagged, exposure to lead becomes a part of their medical history, prompting doctors to consider lead as a possible factor in health problems and to potentially offer services they otherwise might not such as nutrition counseling.

Good nutrition, including foods rich in iron, calcium and Vitamin C can help protect the body from the effects of lead, according to the U.S. Environmental Protection Agency.

"These patients and their families have been traumatized. They need that extra support, that extra empathy," said Hanna-Attisha, who believes the city can be an ideal place to build a model public health program.

Marc Edwards, the Virginia Tech professor who led independent water testing in Flint, said the doctor has already shown the resolve to achieve her goals.

"Dr. Mona upholds the highest standards of scientific rigor and integrity in analysis of raw data, considering its implications for public health, and forging consensus with all parties for rational decisive interventions," Edwards said in an email to The Flint Journal-MLive.

"Her passion, work ethic and pleasant persistence provide an inspiring example that other young 21st Century public health professionals should emulate. Without the extraordinary efforts of Dr. Mona and her colleagues, Flint's children would undoubtedly still be in harms way — her plans to ameliorate the damage from this tragedy, should be carefully considered and then implemented with some urgency."

Hanna-Attisha said better public education about lead is still needed and residents need to know that Flint's drinking water is still not safe to drink without a filter, even though the city changed its water source last month.

It will take more time to rebuild the protective coating inside lead water pipes, Hanna-Attisha said, and there is the potential for scale and sediment containing lead to break loose and enter the water supply in the future.

Just last month, the U. S. Environmental Protection Agency warned that underground work by utility crews could dislodge lead in scale and sediment in water pipes.

Grant applications are pending to help support the work Hanna-Attisha wants to do here, and state and federal programs need to be fitted to take Flint's lead problem into account.

One example of a change made to address lead exposure in Flint was the federal government's decision to make ready-to-use formula available through the Women Infants and Children program so that mothers don't have to mix powdered formula with water.

Lead is a naturally occurring element found in small amounts in the earth's crust, according to the EPA. The Mayo Clinic says even small amounts of lead can cause serious health problems, and children under the age of 6 are especially vulnerable to lead poisoning, which can severely affect mental and physical development.

Hanna-Attisha said lead poisoning is especially tragic in Flint, where too many children are already exposed to other traumas — such poverty and alcohol or drug abuse in the home — before lead in water was added to the list.

As the number of traumatic events increases, so does the risk of health problems for children, she said.

"We are assessing what happened, but we also want to see how we can mitigate this exposure," the doctor said.

Flint tap water "still not safe" says Virginia Tech researcher (Michigan Radio)

http://michiganradio.org/post/flint-tap-water-still-not-safe-says-virginia-tech-researcher#stream/0

By Steve Carmody • Dec 2, 2015

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A top researcher says it's still too soon to drink Flint's tap water unfiltered.

Dr. Marc Edwards of Virginia Tech University (file photo)

Credit Steve Carmody / Michigan Radio

Virginia Tech University researcher Marc Edwards has been studying Flint's water problems for months. Tests conducted by Edwards' team on water samples from more than 250 Flint homes showed elevated levels of lead.

Edwards has been in Flint this week testing tap water in ten 'sentinel' homes. He says the tests are tracking what's happened in the six weeks since Flint switched back to Detroit water, after 18 months of getting tap water from the corrosive Flint River.

"The average lead has gone down by about 50%. So that's good news," says Edwards.

But Edwards says the bad news is there's still too much lead in the water.

"(The water is) still not safe to drink by any stretch of the imagination," says Edwards.

Edwards predicts Flint's drinking water will continue to improve over the next few weeks. He says people should continue to use water filters for the foreseeable future.

However, Edwards says lead will continue to be an issue in Flint for a long time to come.

Loan forgiveness sought for Flint to replace lead pipes (Detroit News)

Chad Livengood, Detroit News Lansing Bureau 12:07 a.m. EST December 6, 2015

(Photo: John M. Galloway / Detroit News)

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“They need to move forward on that,” Kildee said of DEQ.

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To: Deltoral, Miguel[deltoral.miguel@epa.gov]; Kempic, Jeffrey[Kempic.Jeffrey@epa.gov]; Lytle, Darren[Lytle.Darren@epa.gov]; Poy, Thomas[poy.thomas@epa.gov]; Schock, Michael[Schock.Michael@epa.gov]
Cc: Shaffer, Loretta[Shaffer.Loretta@epa.gov]; Kaplan, Robert[kaplan.robert@epa.gov]
From: Henry, Timothy
Sent: Wed 12/9/2015 8:28:56 PM
Subject: Action requested Flint Corrosion Control Optimization Assessment

Task Force –

Bob has requested that, for the Friday (12/11) call with Flint, its contractor, and MDEQ, we provide him with a bottom line Task Force position on the corrosion control treatment optimization assessment work that must be accomplished before Flint begins to distribute water from the new KWA pipeline to the public. He is looking for a timeframe that they should be planning for where they may need access to both Detroit water (current situation) and KWA water. We have suggested that the KWA water should be run through the Flint plant and the treated water tested for corrosion control treatment optimization for a period of time while the resulting water run to waste. Bob is asking how long they should plan for that to continue.

We should discuss this and arrive at a group position tomorrow. Can we have a call tomorrow at 3PM central to discuss this? I will send out a scheduler message with call in information.

Tim Henry
Deputy Director, Water Division
U.S. EPA (W-15J)
77 W. Jackson Blvd., Chicago, IL 60604-3590
Phone: 312.886.6107 Fax: 312.692.2578

To: Henry, Timothy[henry.timothy@epa.gov]; Deltoral, Miguel[deltoral.miguel@epa.gov]; Kempic, Jeffrey[Kempic.Jeffrey@epa.gov]; Lytle, Darren[Lytle.Darren@epa.gov]; Poy, Thomas[poy.thomas@epa.gov]
Cc: Shaffer, Loretta[Shaffer.Loretta@epa.gov]; Kaplan, Robert[kaplan.robert@epa.gov]
From: Schock, Michael
Sent: Wed 12/9/2015 9:32:32 PM
Subject: RE: Action requested Flint Corrosion Control Optimization Assessment

Tim, et. al.

Darren and I had a conversation with Tom Speth a few minutes ago, he is on detail with OGWDW. I mentioned (I'll take the heat for this suggestion) to him that it would be helpful to have someone with more plant operations experience than me, do at least a walk-through "audit" of the treatment plant, to look for yellow or red flags for potential start-up or operations issues. We thought that there was possibly someone in TSC/OGWDW who could help. Maybe they would spot things like filter media, process instrumentation or controls, etc. that inform on what to monitor closely, and what water quality parameters (inorganic, organic and microbial) might need enhanced monitoring in the system as the plant is brought on line. I am not sure where this will go, but I've made the suggestion in the spirit of getting the most EPA expertise on behalf of the people of Flint. So, don't be surprised. I don't want this to get any more complicated than it has to be, but I'm also very nervous (as is Darren) about the potential things that can go wrong with a conventional treatment plant, aside from the corrosion control. And basic problems with pH, Al residual, organic removal,etc. can all adversely interact with the corrosion control, particularly at the elevated (compared to other systems, but rightfully so) phosphate dosage level.

I can probably make the call at 3, but I believe Darren is busy the whole afternoon. I have essential tasks and meetings both in the 9-10 AM timeframe, and also from noon until 3.

--Mike

From: Henry, Timothy
Sent: Wednesday, December 09, 2015 3:29 PM
To: Deltoral, Miguel <deltoral.miguel@epa.gov>; Kempic, Jeffrey <Kempic.Jeffrey@epa.gov>; Lytle, Darren <Lytle.Darren@epa.gov>; Poy, Thomas <poy.thomas@epa.gov>; Schock, Michael <Schock.Michael@epa.gov>
Cc: Shaffer, Loretta <Shaffer.Loretta@epa.gov>; Kaplan, Robert <kaplan.robert@epa.gov>
Subject: Action requested Flint Corrosion Control Optimization Assessment

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Cc: Shaffer, Loretta[Shaffer.Loretta@epa.gov]; Kaplan, Robert[kaplan.robert@epa.gov]
From: Schock, Michael
Sent: Thur 12/10/2015 1:33:11 PM
Subject: RE: Action requested Flint Corrosion Control Optimization Assessment

Tim;

We are largely in the dark about very important details about the configuration of the Flint plant and startup plans. What coagulant? Is ozone going to be used? What water quality changes would accompany intermittant chlorine addition at the intake for zebra mussel control (impact on pH? TTHMS? Other constituents?)? We don't know anything more about the chlorine residual in the system, what the pH impact is (if any, hopefully none) since the boost in phosphate? In what ways would the new Flint product water (and Genesee county plant in the future) equal or differ from the current Detroit water? As you heard on the call yesterday, DEQ still doesn' t understand the relationship of chloride to corrosion (too busy just attacking Marc Edwards for exposing the problems?), or any other water quality/corrosion inhibition interactions. If the Flint plant has to change coagulants, do they have the proper chemical feed, flocculation and filtration media to accommodate changes in coagulant? I am very uncomfortable continuing to have to make major decisions while being in the dark about capabilities and practice. Changes in plant operation must be tested full scale.

This is also complicated because we don't know of the "track record" of this engineering consultant, since they have no national prominence. Who have they solved problems for? What were the results? Darren and I have our reservations about level of expertise in some areas, but perhaps they have some expertise that we just don't know about.

--Mike

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Cc: Shaffer, Loretta[Shaffer.Loretta@epa.gov]; Kaplan, Robert[kaplan.robert@epa.gov]
From: Deltoral, Miguel
Sent: Thur 12/10/2015 1:41:48 PM
Subject: RE: Action requested Flint Corrosion Control Optimization Assessment
Potential Options for Corrosion Control Treatment Optimization Assessments 12-10-2015.docx

Hi all,

As requested, attached are four potential options for the treatment optimization assessment for task force consideration. If there are any additional options, information or clarifications, please advise asap so that we can get this information out to everyone for discussion.

Miguel A. Del Toral
Regulations Manager
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77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

From: Henry, Timothy
Sent: Wednesday, December 9, 2015 02:28 PM
To: Deltoral, Miguel; Kempic, Jeffrey; Lytle, Darren; Poy, Thomas; Schock, Michael
Cc: Shaffer, Loretta; Kaplan, Robert
Subject: Action requested Flint Corrosion Control Optimization Assessment

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Cc: Shaffer, Loretta[Shaffer.Loretta@epa.gov]; Kaplan, Robert[kaplan.robert@epa.gov]
From: Lytle, Darren
Sent: Thur 12/10/2015 3:10:54 PM
Subject: RE: Action requested Flint Corrosion Control Optimization Assessment

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Phone: (513) 569-7432
Fax: (513) 487-2543
email: lytle.darren@epa.gov

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Sent: Thursday, December 10, 2015 8:42 AM
To: Henry, Timothy <henry.timothy@epa.gov>; Kempic, Jeffrey <Kempic.Jeffrey@epa.gov>; Lytle, Darren <Lytle.Darren@epa.gov>; Poy, Thomas <poy.thomas@epa.gov>; Schock, Michael <Schock.Michael@epa.gov>
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Cc: Shaffer, Loretta[Shaffer.Loretta@epa.gov]; Kaplan, Robert[kaplan.robert@epa.gov]
From: Kempic, Jeffrey
Sent: Thur 12/10/2015 4:18:45 PM
Subject: RE: Action requested Flint Corrosion Control Optimization Assessment

Sorry I was out yesterday -some lingering issues caused by that cold.

Is Option 2 a realistic option? This relates to one of my ongoing issues. We don't know what is going on with Genesee County or the other system that is switching to the KWA pipeline in terms of their treatment processes, timing of switch, and testing prior to making the switch to the KWA source. Option 2 presumes that Genesee County is not switching to the KWA pipeline source on the same timeframe as Flint and will continue to use Detroit water (if true, I assume this is so they can evaluate their treatment plant effectiveness prior to bringing it on-line with KWA water). Do we know that Genesee County will remain on Detroit water when the KWA pipeline comes on-line? If we don't know, we need answers from MDEQ in terms of the timing of Genesee County's switch to KWA water, their anticipated treatment train, and any pre-switch testing to inform our decisions about Flint and its assessment.

Jeff

Jeffrey Kempic
Treatment Technology and Cost Team Leader
Standards and Risk Management Division
Phone: (202) 564-4880

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Sent: Thursday, December 10, 2015 10:11 AM
To: Deltoral, Miguel <deltoral.miguel@epa.gov>; Henry, Timothy <henry.timothy@epa.gov>; Kempic, Jeffrey <Kempic.Jeffrey@epa.gov>; Poy, Thomas <poy.thomas@epa.gov>; Schock, Michael <Schock.Michael@epa.gov>
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Phone: (312) 886-5253

From: Henry, Timothy
Sent: Wednesday, December 9, 2015 02:28 PM
To: Deltoral, Miguel; Kempic, Jeffrey; Lytle, Darren; Poy, Thomas; Schock, Michael
Cc: Shaffer, Loretta; Kaplan, Robert
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Cc: Shaffer, Loretta[Shaffer.Loretta@epa.gov]; Kaplan, Robert[kaplan.robert@epa.gov]
From: Deltoral, Miguel
Sent: Thur 12/10/2015 4:39:41 PM
Subject: RE: Action requested Flint Corrosion Control Optimization Assessment

I am on another call right now 10:30a-11:30a CST. Are you available at 11:30a CT? I can fill you in on yesterday's call.

Miguel A. Del Toral
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From: Kempic, Jeffrey
Sent: Thursday, December 10, 2015 10:18 AM
To: Lytle, Darren; Deltoral, Miguel; Henry, Timothy; Poy, Thomas; Schock, Michael
Cc: Shaffer, Loretta; Kaplan, Robert
Subject: RE: Action requested Flint Corrosion Control Optimization Assessment

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Phone: 312.886.6107 Fax: 312.692.2578

To: Thomas Poy[Poy.Thomas@epa.gov]
From: Henry, Timothy
Sent: Fri 12/11/2015 7:22:27 PM
Subject: FW: Flint Congressional Meetings Scheduled

Can your folks compile?

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Deputy Director, Water Division
U.S. EPA (W-15J)
77 W. Jackson Blvd., Chicago, IL 60604-3590
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From: Hedman, Susan
Sent: Friday, December 11, 2015 12:05 PM
To: Beckmann, Ronna Erin <beckmann.ronna@epa.gov>
Cc: Kaplan, Robert <kaplan.robert@epa.gov>; Hyde, Tinka <hyde.tinka@epa.gov>; Henry, Timothy <henry.timothy@epa.gov>; Fortin, Denise <Fortin.Denise@epa.gov>; Deamer, Eileen <deamer.eileen@epa.gov>; Kelley, Jeff <kelley.jeff@epa.gov>; Rowan, Anne <rowan.anne@epa.gov>
Subject: RE: Flint Congressional Meetings Scheduled

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One additional item I'd like to add to the briefing on Tuesday: a summary of the results from lead testing that has been done by the State and City – both tap water lead levels and blood lead levels. Also, anything we have heard about the testing being done by Hurley Medical Center.

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Subject: Flint Congressional Meetings Scheduled

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Wednesday, December 16

2:30pm – Rep. Lawrence in 1237 Longworth

3:30pm – Sen. Peters in 724 Hart

Thursday, December 17

10:00am – Rep. Kildee in 227 Cannon

Scheduling contacts in each office:

Lawrence – Zach Weber, 202-225-5802, Zach.Weber@mail.house.gov

Peters – Angeli Chawla, 202-224-6221, Angeli_Chawla@peters.senate.gov

Kildee – Nathaniel A. Brunner, 202-225-3611, Nathan.Brunner@mail.house.gov

Ronna Beckmann

Office of the Regional Administrator

U.S. Environmental Protection Agency, Region 5

312-886-0689

beckmann.ronna@epa.gov

To: Porter, Andrea[porter.andrea@epa.gov]; Deltoral, Miguel[deltoral.miguel@epa.gov]
Cc: Bair, Rita[bair.rita@epa.gov]; Damato, Nicholas[damato.nicholas@epa.gov]; Shoven, Heather[shoven.heather@epa.gov]; Crooks, Jennifer[crooks.jennifer@epa.gov]
From: Poy, Thomas
Sent: Fri 12/11/2015 9:20:08 PM
Subject: FW: Flint Congressional Meetings Scheduled

Andrea/Miguel: Can you please pull together a summary of the Flint sampling results (two 6-month rounds, school sampling, any customer-requested sampling that Flint did??) and blood lead level results – we may only have the percentages of EBL rather than lists of individual results.

Thanks.

Tom

Tom Poy

Chief, Ground Water and Drinking Water Branch

USEPA - Region 5

(312) 886-5991

From: Henry, Timothy
Sent: Friday, December 11, 2015 1:22 PM
To: Poy, Thomas <poy.thomas@epa.gov>
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Lawrence – Zach Weber, 202-225-5802, Zach.Weber@mail.house.gov

Peters – Angeli Chawla, 202-224-6221, Angeli_Chawla@peters.senate.gov

Kildee – Nathaniel A. Brunner, 202-225-3611, Nathan.Brunner@mail.house.gov

Ronna Beckmann

Office of the Regional Administrator

U.S. Environmental Protection Agency, Region 5

312-886-0689

beckmann.ronna@epa.gov

To: Poy, Thomas[poy.thomas@epa.gov]; Porter, Andrea[porter.andrea@epa.gov]
Cc: Bair, Rita[bair.rita@epa.gov]; Damato, Nicholas[damato.nicholas@epa.gov]; Shoven, Heather[shoven.heather@epa.gov]; Crooks, Jennifer[crooks.jennifer@epa.gov]
From: Deltoral, Miguel
Sent: Mon 12/14/2015 11:20:35 AM
Subject: RE: Flint Congressional Meetings Scheduled

I will work with Andrea.
Just FYI - We have no resident-requested sample results, except for the ones that Citizen name / Ex. 6 sent me (hers and 3 others). That was on the request list that I sent to the Task Force some time ago and it seems to have been forgotten, or at least I have not heard back on the status of that information request. Was it discussed at all on Friday?

Miguel A. Del Toral
Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

From: Poy, Thomas
Sent: Friday, December 11, 2015 03:20 PM
To: Porter, Andrea; Deltoral, Miguel
Cc: Bair, Rita; Damato, Nicholas; Shoven, Heather; Crooks, Jennifer
Subject: FW: Flint Congressional Meetings Scheduled

Andrea/Miguel: Can you please pull together a summary of the Flint sampling results (two 6-month rounds, school sampling, any customer-requested sampling that Flint did??) and blood lead level results – we may only have the percentages of EBL rather than lists of individual results.

Thanks.

Tom

Tom Poy
Chief, Ground Water and Drinking Water Branch
USEPA - Region 5
(312) 886-5991

From: Henry, Timothy
Sent: Friday, December 11, 2015 1:22 PM
To: Poy, Thomas <poy.thomas@epa.gov>
Subject: FW: Flint Congressional Meetings Scheduled

Can your folks compile?

Tim Henry
Deputy Director, Water Division
U.S. EPA (W-15J)
77 W. Jackson Blvd., Chicago, IL 60604-3590
Phone: 312.886.6107 Fax: 312.692.2578

From: Hedman, Susan
Sent: Friday, December 11, 2015 12:05 PM

To: Beckmann, Ronna Erin <beckmann.ronna@epa.gov<mailto:beckmann.ronna@epa.gov>>
Cc: Kaplan, Robert <kaplan.robert@epa.gov<mailto:kaplan.robert@epa.gov>>; Hyde, Tinka <hyde.tinka@epa.gov<mailto:hyde.tinka@epa.gov>>; Henry, Timothy <henry.timothy@epa.gov<mailto:henry.timothy@epa.gov>>; Fortin, Denise <Fortin.Denise@epa.gov<mailto:Fortin.Denise@epa.gov>>; Deamer, Eileen <deamer.eileen@epa.gov<mailto:deamer.eileen@epa.gov>>; Kelley, Jeff <kelley.jeff@epa.gov<mailto:kelley.jeff@epa.gov>>; Rowan, Anne <rowan.anne@epa.gov<mailto:rowan.anne@epa.gov>>
Subject: RE: Flint Congressional Meetings Scheduled

Thanks very much.

One additional item I'd like to add to the briefing on Tuesday: a summary of the results from lead testing that has been done by the State and City – both tap water lead levels and blood lead levels. Also, anything we have heard about the testing being done by Hurley Medical Center.

From: Beckmann, Ronna Erin
Sent: Friday, December 11, 2015 10:43 AM
To: Hedman, Susan <hedman.susan@epa.gov<mailto:hedman.susan@epa.gov>>
Cc: Kaplan, Robert <kaplan.robert@epa.gov<mailto:kaplan.robert@epa.gov>>; Hyde, Tinka <hyde.tinka@epa.gov<mailto:hyde.tinka@epa.gov>>; Henry, Timothy <henry.timothy@epa.gov<mailto:henry.timothy@epa.gov>>; Fortin, Denise <Fortin.Denise@epa.gov<mailto:Fortin.Denise@epa.gov>>; Deamer, Eileen <deamer.eileen@epa.gov<mailto:deamer.eileen@epa.gov>>; Kelley, Jeff <kelley.jeff@epa.gov<mailto:kelley.jeff@epa.gov>>; Rowan, Anne <rowan.anne@epa.gov<mailto:rowan.anne@epa.gov>>
Subject: Flint Congressional Meetings Scheduled

You're all set. I've shared this info with Peter's scheduler – and will let you know when I've confirmed that he'll be joining you for all the meetings.

Wednesday, December 16
2:30pm – Rep. Lawrence in 1237 Longworth
3:30pm – Sen. Peters in 724 Hart

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From: Deltoral, Miguel
Sent: Mon 12/14/2015 11:29:57 AM
Subject: RE: Flint Congressional Meetings Scheduled

I assume we should include a summary of the school sampling as well?

Miguel A. Del Toral
Regulations Manager
U.S. EPA R5 GWDWB
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Chicago, IL 60604
Phone: (312) 886-5253

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<Fortin.Denise@epa.gov<mailto:Fortin.Denise@epa.gov>>; Deamer, Eileen
<deamer.eileen@epa.gov<mailto:deamer.eileen@epa.gov>>; Kelley, Jeff
<kelley.jeff@epa.gov<mailto:kelley.jeff@epa.gov>>; Rowan, Anne
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Thanks very much.

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<henry.timothy@epa.gov<mailto:henry.timothy@epa.gov>>; Fortin, Denise
<Fortin.Denise@epa.gov<mailto:Fortin.Denise@epa.gov>>; Deamer, Eileen
<deamer.eileen@epa.gov<mailto:deamer.eileen@epa.gov>>; Kelley, Jeff
<kelley.jeff@epa.gov<mailto:kelley.jeff@epa.gov>>; Rowan, Anne
<rowan.anne@epa.gov<mailto:rowan.anne@epa.gov>>
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To: Bosscher, Valerie[bosscher.valerie@epa.gov]; Porter, Andrea[porter.andrea@epa.gov]
Cc: Lytle, Darren[Lytle.Darren@epa.gov]; Schock, Michael[Schock.Michael@epa.gov]
From: Deltoral, Miguel
Sent: Mon 12/14/2015 12:17:56 PM
Subject: RE: Action requested Flint Corrosion Control Optimization Assessment

I am not sure what the actual issues are from ORD with this option, so I don't know what problem(s) we are trying to solve yet.

Darren/Mike - Can you please outline the specific issues you folks have with Option 3 (using a temp reservoir for starting the KWA water assessment).

Miguel A. Del Toral
Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

From: Bosscher, Valerie
Sent: Friday, December 11, 2015 10:53 AM
To: Deltoral, Miguel; Porter, Andrea
Subject: RE: Action requested Flint Corrosion Control Optimization Assessment

Hi Miguel,

Instead of constructing a very large reservoir, have you considered buying/renting a smaller tank (e.g. commercially available 5k gallon poly tank or 20k gallon frac tank) and having daily or weekly water truckloads of Lake Huron water (such as from the Detroit intake)?

http://www.rainforrent.com/Products/Tanks-and-Boxes/Frac-Tanks/?utm_source=bing&utm_medium=cpc&utm_campaign=frac&utm_term=frac%20tank%20rental

http://www.bakercorp.com/en-us/products/tanks/poly-tanks/poly-tanks-overview/

Based on past project experience, these tanks are typically around $1,000/month to rent. If sufficient room is available indoors, I would suggest the poly tank option to avoid heating/recirculation that would be needed for a frac tank [which is the size of a semi truck and would probably not fit indoors].

Let me know if you would like additional information on this idea.

Thanks,
Val

-----Original Message-----
From: Deltoral, Miguel
Sent: Thursday, December 10, 2015 8:18 AM
To: Bosscher, Valerie <bosscher.valerie@epa.gov>; Porter, Andrea <porter.andrea@epa.gov>
Subject: FW: Action requested Flint Corrosion Control Optimization Assessment
Importance: High

fyi

Miguel A. Del Toral
Regulations Manager

U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

From: Deltoral, Miguel
Sent: Thursday, December 10, 2015 07:41 AM
To: Henry, Timothy; Kempic, Jeffrey; Lytle, Darren; Poy, Thomas; Schock, Michael
Cc: Shaffer, Loretta; Kaplan, Robert
Subject: RE: Action requested Flint Corrosion Control Optimization Assessment

Hi all,

As requested, attached are four potential options for the treatment optimization assessment for task force consideration. If there are any additional options, information or clarifications, please advise asap so that we can get this information out to everyone for discussion.

Miguel A. Del Toral
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Phone: (312) 886-5253

From: Henry, Timothy
Sent: Wednesday, December 9, 2015 02:28 PM
To: Deltoral, Miguel; Kempic, Jeffrey; Lytle, Darren; Poy, Thomas; Schock, Michael
Cc: Shaffer, Loretta; Kaplan, Robert
Subject: Action requested Flint Corrosion Control Optimization Assessment

Task Force –

Bob has requested that, for the Friday (12/11) call with Flint, its contractor, and MDEQ, we provide him with a bottom line Task Force position on the corrosion control treatment optimization assessment work that must be accomplished before Flint begins to distribute water from the new KWA pipeline to the public. He is looking for a timeframe that they should be planning for where they may need access to both Detroit water (current situation) and KWA water. We have suggested that the KWA water should be run through the Flint plant and the treated water tested for corrosion control treatment optimization for a period of time while the resulting water run to waste. Bob is asking how long they should plan for that to continue.

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Tim Henry
Deputy Director, Water Division
U.S. EPA (W-15J)
77 W. Jackson Blvd., Chicago, IL 60604-3590
Phone: 312.886.6107 Fax: 312.692.2578

To: Deltoral, Miguel[deltoral.miguel@epa.gov]; Bosscher, Valerie[bosscher.valerie@epa.gov]; Porter, Andrea[porter.andrea@epa.gov]
Cc: Schock, Michael[Schock.Michael@epa.gov]
From: Lytle, Darren
Sent: Mon 12/14/2015 12:35:44 PM
Subject: RE: Action requested Flint Corrosion Control Optimization Assessment

The sticking point is the assessment that includes developing confidence that the plant can be started-up and operated consistently for an extended period of time before the water is permitted to enter the distribution system. Will the plant be able to produce the targeted finished water quality on a consistent basis? Without any experience treating Lake Huron water and considering how treatment of Flint River water went in past, I think this is questionable.

This is a full-scale exercise and I do not think a reservoir option would be practical.

Darren

Darren A. Lytle, Ph.D., P.E.
Branch Chief (Acting)
U.S. Environmental Protection Agency
26 West Martin Luther King Dr.
Cincinnati, Ohio 45268
Phone: (513) 569-7432
Fax: (513) 487-2543
email: lytle.darren@epa.gov

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From: Deltoral, Miguel
Sent: Monday, December 14, 2015 7:18 AM
To: Bosscher, Valerie <bosscher.valerie@epa.gov>; Porter, Andrea <porter.andrea@epa.gov>
Cc: Lytle, Darren <Lytle.Darren@epa.gov>; Schock, Michael <Schock.Michael@epa.gov>
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Cc: Poy, Thomas[poy.thomas@epa.gov]; Damato, Nicholas[damato.nicholas@epa.gov]; Bair, Rita[bair.rita@epa.gov]
From: Schock, Michael
Sent: Mon 12/14/2015 12:49:07 PM
Subject: RE: flint article --> "Flint will pay for independent water tests, added phosphate treatment"

Just reminding everybody that item 5.1 in our proposed research plan covered the detection of lead service lines (since so few of the 40,000 records have any viable materials information on them according to Mike G). Item 5.3 on our plan was set up to determine the fraction of lead coming from the different materials in the system, to enable an assessment of the effectiveness of current and future "corrosion control" treatment effectiveness. The school sampling has proven that lead pipes are not necessarily the only important source of lead contamination.

--Mike

From: Porter, Andrea
Sent: Friday, December 11, 2015 10:11 AM
To: Deltoral, Miguel <deltoral.miguel@epa.gov>; Schock, Michael <Schock.Michael@epa.gov>; Lytle, Darren <Lytle.Darren@epa.gov>; Shoven, Heather <shoven.heather@epa.gov>; Crooks, Jennifer <crooks.jennifer@epa.gov>; Harris, Kimberly <harris.kimberly@epa.gov>; Bosscher, Valerie <bosscher.valerie@epa.gov>
Cc: Poy, Thomas <poy.thomas@epa.gov>; Damato, Nicholas <damato.nicholas@epa.gov>; Bair, Rita <bair.rita@epa.gov>
Subject: flint article --> "Flint will pay for independent water tests, added phosphate treatment"

Hi All,

Here's another article on Flint:

Source = http://www.mlive.com/news/flint/index.ssf/2015/12/flint_will_pay_for_independent.html

“Flint will pay for independent water tests, added phosphate treatment

FLINT, MI -- The city has hired a contractor to do what it did not on its own -- search out and test water in homes that are most likely to have the highest lead levels.

Mayor Karen Weaver and City Administrator Natasha Henderson announced the city will spend up to $75,000 to locate and test for lead in water in at least 150 homes and businesses served by lead service lines, which are most prone to leech lead into drinking water.

Professional Service Industries Inc. will also test water samples from Flint in its own labs, which are certified by the state and federal governments.

Weaver and Henderson also said the city has begun to boost the volume of phosphates in Flint water by adding more of the mineral once water arrives here through the Detroit water system pipeline.

"I'm really happy about today ... really pleased ... This is a move forward for us," Weaver said in a news conference Thursday, Dec. 10. "This is a way to increase public confidence ... We're going above and beyond what's required."

The decision to hire PSI to test water from high-risk homes comes after a Flint Journal-MLive story in November showed Flint officials disregarded federal rules that required them to seek out homes at high risk for elevated lead levels while doing their own water sampling earlier this year.

The city certified to state regulators earlier this year that its water samples came from homes where residents were at the highest risk of lead poisoning.

Records obtained by The Journal, however, showed those claims were false and that water samples were in most cases taken from homes with non-lead service lines or from homes for which the city had no information about the transmission line material.

Flint Utilities Director Mike Glasgow said Thursday that it's possible the city will have to excavate some service lines to be sure of what the lines are made of.

Flint officials have said the city's utility records are in disarray and not easily accessible, stored on about 40,000 hand-written index cards and maps.

"I doubt we will be able to do them all without digging up at least a few lines," Glasgow said.

Glasgow had told the City Council earlier this week about the plan to boost phosphates by adding 2.5 milligrams per liter -- on top of 1 milligram per liter that's added by the Detroit water system.

Weaver said the higher level of phosphates is designed to lower lead levels and to aid in rebuilding a protective coating -- or scale -- that makes pipes less prone to lead leaching.

The city has said the coating in water pipes was damaged during the 17 months that the city used the Flint River as its water source because of how corrosive the river was.

The state Department of Environmental Quality has said it should have required the city to treat the river water to make it less corrosive before Flint was reconnected to the Detroit water system last month.

Henderson said the contract with PSI will cost as little $40,000 and not more than $75,000."

Thanks,

Andrea Porter

Environmental Engineer

Ground Water & Drinking Water Branch

U.S. EPA, Region 5 (WG-15J)

77 W. Jackson Blvd.

Chicago, IL 60604

Phone: 312-886-4427

Fax: 312-697-2656

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Cc: Schock, Michael[Schock.Michael@epa.gov]
From: Deltoral, Miguel
Sent: Mon 12/14/2015 12:56:20 PM
Subject: RE: Action requested Flint Corrosion Control Optimization Assessment

My biggest concern here is that we have insufficient information to evaluate the options I sent out. We do not even know (at least I don't) where the Flint connection to the Genesee/Detroit pipeline will be and whether it will be before or after the shut-off between Detroit and Genesee. If it is after the shut-off, the water will not even be available to Flint once Genesee cuts it off. We need to get some maps from Flint asap on how these interconnections would work before we can decide on what options are actually even possible and for how long.

What do you folks think about a hybrid, whereby the reservoir is used until the KWA source is available at the plant? The advantage is that we can start on that now instead of having to wait until the KWA pipeline is completed. It's not perfect since it would involve adjusting the reservoir water to what would be anticipated to come out of the pipeline and applying various treatment schemes, but it could potentially allow for a shorter evaluation timeframe after the switch to KWA, which could save millions of $$ for Flint.

Miguel A. Del Toral
Regulations Manager
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77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

From: Lytle, Darren
Sent: Monday, December 14, 2015 06:35 AM
To: Deltoral, Miguel; Bosscher, Valerie; Porter, Andrea
Cc: Schock, Michael
Subject: RE: Action requested Flint Corrosion Control Optimization Assessment

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Darren

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Cc: Lytle, Darren <Lytle.Darren@epa.gov>; Schock, Michael <Schock.Michael@epa.gov>
Subject: RE: Action requested Flint Corrosion Control Optimization Assessment

I am not sure what the actual issues are from ORD with this option, so I don't know what problem(s) we are trying to solve yet.

Darren/Mike - Can you please outline the specific issues you folks have with Option 3 (using a temp reservoir for starting the KWA water assessment).

Miguel A. Del Toral
Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

From: Bosscher, Valerie
Sent: Friday, December 11, 2015 10:53 AM
To: Deltoral, Miguel; Porter, Andrea
Subject: RE: Action requested Flint Corrosion Control Optimization Assessment

Hi Miguel,

Instead of constructing a very large reservoir, have you considered buying/renting a smaller tank (e.g. commercially available 5k gallon poly tank or 20k gallon frac tank) and having daily or weekly water truckloads of Lake Huron water (such as from the Detroit intake)?

http://www.rainforrent.com/Products/Tanks-and-Boxes/Frac-Tanks/?utm_source=bing&utm_medium=cpc&utm_campaign=frac&utm_term=frac%20tank%20rental

http://www.bakercorp.com/en-us/products/tanks/poly-tanks/poly-tanks-overview/

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Let me know if you would like additional information on this idea.

Thanks,
Val

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From: Deltoral, Miguel
Sent: Thursday, December 10, 2015 8:18 AM
To: Bosscher, Valerie <bosscher.valerie@epa.gov>; Porter, Andrea <porter.andrea@epa.gov>
Subject: FW: Action requested Flint Corrosion Control Optimization Assessment
Importance: High

fyi

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Regulations Manager
U.S. EPA R5 GWDWB

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Phone: (312) 886-5253

From: Deltoral, Miguel
Sent: Thursday, December 10, 2015 07:41 AM
To: Henry, Timothy; Kempic, Jeffrey; Lytle, Darren; Poy, Thomas; Schock, Michael
Cc: Shaffer, Loretta; Kaplan, Robert
Subject: RE: Action requested Flint Corrosion Control Optimization Assessment

Hi all,

As requested, attached are four potential options for the treatment optimization assessment for task force consideration. If there are any additional options, information or clarifications, please advise asap so that we can get this information out to everyone for discussion.

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Sent: Wednesday, December 9, 2015 02:28 PM
To: Deltoral, Miguel; Kempic, Jeffrey; Lytle, Darren; Poy, Thomas; Schock, Michael
Cc: Shaffer, Loretta; Kaplan, Robert
Subject: Action requested Flint Corrosion Control Optimization Assessment

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We should discuss this and arrive at a group position tomorrow. Can we have a call tomorrow at 3PM central to discuss this? I will send out a scheduler message with call in information.

Tim Henry
Deputy Director, Water Division
U.S. EPA (W-15J)
77 W. Jackson Blvd., Chicago, IL 60604-3590
Phone: 312.886.6107 Fax: 312.692.2578

To: Deltoral, Miguel[deltoral.miguel@epa.gov]; Lytle, Darren[Lytle.Darren@epa.gov]; Bosscher, Valerie[bosscher.valerie@epa.gov]; Porter, Andrea[porter.andrea@epa.gov]
From: Schock, Michael
Sent: Mon 12/14/2015 1:55:12 PM
Subject: RE: Action requested Flint Corrosion Control Optimization Assessment

I've already given up that the pipe rig will be there for anything but stabilization with current water to be then used for future KWA water and beyond evaluations. But I don't know if it will ever get funded. The hybrid option would rely on even more funding from somewhere, though I do agree that it would be a lot less money to even build a small package plant to simulate Flint plant operations with enough volume to feed pipe rigs, than to pay $1M a month for Detroit water. But I don't see funding for that, either, though it may be possible to design something technically feasible.

This whole problem of best practices vs. the weak regulatory requirements is shedding light on another massive aspect of the failure of the LCR. And for that matter, probably other regs, that don't prevent wanton experimentation on the public.

-----Original Message-----
From: Deltoral, Miguel
Sent: Monday, December 14, 2015 7:56 AM
To: Lytle, Darren <Lytle.Darren@epa.gov>; Bosscher, Valerie <bosscher.valerie@epa.gov>; Porter, Andrea <porter.andrea@epa.gov>
Cc: Schock, Michael <Schock.Michael@epa.gov>
Subject: RE: Action requested Flint Corrosion Control Optimization Assessment

My biggest concern here is that we have insufficient information to evaluate the options I sent out. We do not even know (at least I don't) where the Flint connection to the Genesee/Detroit pipeline will be and whether it will be before or after the shut-off between Detroit and Genesee. If it is after the shut-off, the water will not even be available to Flint once Genesee cuts it off. We need to get some maps from Flint asap on how these interconnections would work before we can decide on what options are actually even possible and for how long.

What do you folks think about a hybrid, whereby the reservoir is used until the KWA source is available at the plant? The advantage is that we can start on that now instead of having to wait until the KWA pipeline is completed. It's not perfect since it would involve adjusting the reservoir water to what would be anticipated to come out of the pipeline and applying various treatment schemes, but it could potentially allow for a shorter evaluation timeframe after the switch to KWA, which could save millions of $$ for Flint.

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Phone: (312) 886-5253

From: Lytle, Darren
Sent: Monday, December 14, 2015 06:35 AM
To: Deltoral, Miguel; Bosscher, Valerie; Porter, Andrea
Cc: Schock, Michael
Subject: RE: Action requested Flint Corrosion Control Optimization Assessment

The sticking point is the assessment that includes developing confidence that the plant can be started-up and operated consistently for an extended period of time before the water is permitted to enter the distribution system. Will the plant be able to produce the targeted finished water quality on a consistent basis? Without any experience treating Lake Huron water and considering how treatment of Flint River water went in past, I think this is questionable.

This is a full-scale exercise and I do not think a reservoir option would be practical.

Darren

Darren A. Lytle, Ph.D., P.E.
Branch Chief (Acting)
U.S. Environmental Protection Agency
26 West Martin Luther King Dr.
Cincinnati, Ohio 45268
Phone: (513) 569-7432
Fax: (513) 487-2543
email: lytle.darren@epa.gov

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From: Deltoral, Miguel
Sent: Monday, December 14, 2015 7:18 AM
To: Bosscher, Valerie <bosscher.valerie@epa.gov>; Porter, Andrea <porter.andrea@epa.gov>
Cc: Lytle, Darren <Lytle.Darren@epa.gov>; Schock, Michael <Schock.Michael@epa.gov>
Subject: RE: Action requested Flint Corrosion Control Optimization Assessment

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Subject: FW: Action requested Flint Corrosion Control Optimization Assessment
Importance: High

fyi

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To: Deltoral, Miguel[deltoral.miguel@epa.gov]; Viveiros, Edward[Viveiros.Edward@epa.gov]; Banks, Victoria[Banks.Victoria@epa.gov]; Moriarty, Edward[Moriarty.EdwardJ@epa.gov]; Bosscher, Valerie[bosscher.valerie@epa.gov]; Kempic, Jeffrey[Kempic.Jeffrey@epa.gov]; Lytle, Darren[Lytle.Darren@epa.gov]; Porter, Andrea[porter.andrea@epa.gov]; Shoven, Heather[shoven.heather@epa.gov]; Crooks, Jennifer[crooks.jennifer@epa.gov]; Kuefler, Janet[kuefler.janet@epa.gov]
From: Schock, Michael
Sent: Mon 12/14/2015 2:49:49 PM
Subject: RE: FYI / Flint Journal: More lead in plumbing found at Flint, Michigan, Brownell school, state report says

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I am suspicious that the Detroit water is not really optimized, given the phosphate dosage is only about a third of what the 1995 pilot study tested (and multiple concentrations were not tested), and the determination that the lowered dosage isn't showing higher lead levels for Detroit (and is therefore cost-effective) could easily be explained by a skewed site selection and sampling protocol, if theirs is similar to what has been implemented in Flint.

Does anyone know if there is there a plan or schedule for the completion of faucet/device replacement for the schools? This article doesn't lay it out. And is there a plan to identify the lowest Pb leaching models to be put into the schools? That is important, as "lead free" does not mean absence of lead release.

--Mike

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Sent: Friday, December 11, 2015 9:05 AM
To: Viveiros, Edward <Viveiros.Edward@epa.gov>; Banks, Victoria <Banks.Victoria@epa.gov>; Moriarty, Edward <Moriarty.EdwardJ@epa.gov>; Bosscher, Valerie <bosscher.valerie@epa.gov>; Kempic, Jeffrey <Kempic.Jeffrey@epa.gov>; Schock, Michael <Schock.Michael@epa.gov>; Lytle, Darren <Lytle.Darren@epa.gov>; Porter, Andrea <porter.andrea@epa.gov>; Shoven, Heather <shoven.heather@epa.gov>; Crooks, Jennifer <crooks.jennifer@epa.gov>; Kuefler, Janet <kuefler.janet@epa.gov>
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From: Suero, Maryann
Sent: Friday, December 11, 2015 07:57 AM
To: Klevs, Mardi; Master, Edward; Deltoral, Miguel; Poy, Thomas; Harris, Kimberly

Subject: FYI / Flint Journal: More lead in plumbing found at Flint, Michigan, Brownell school, state report says

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More lead in plumbing found at Flint, Michigan, Brownell school, state report says State testing at another Flint school has identified old faucets and plumbing as potential sources of lead leaching into water.
Flint Journal, Michigan.
http://www.mlive.com/news/flint/index.ssf/2015/12/state_report_identifies_more_l.html

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From: Crooks, Jennifer
Sent: Mon 12/14/2015 3:02:34 PM
Subject: RE: FYI / Flint Journal: More lead in plumbing found at Flint, Michigan, Brownell school, state report says

Site selection of Tier 1 sites in Detroit---another possible action during our audit?

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Sent: Monday, December 14, 2015 8:50 AM
To: Deltoral, Miguel <deltoral.miguel@epa.gov>; Viveiros, Edward <Viveiros.Edward@epa.gov>; Banks, Victoria <Banks.Victoria@epa.gov>; Moriarty, Edward <Moriarty.EdwardJ@epa.gov>; Bosscher, Valerie <bosscher.valerie@epa.gov>; Kempic, Jeffrey <Kempic.Jeffrey@epa.gov>; Lytle, Darren <Lytle.Darren@epa.gov>; Porter, Andrea <porter.andrea@epa.gov>; Shoven, Heather <shoven.heather@epa.gov>; Crooks, Jennifer <crooks.jennifer@epa.gov>; Kuefler, Janet <kuefler.janet@epa.gov>
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To: Crooks, Jennifer[crooks.jennifer@epa.gov]
From: Schock, Michael
Sent: Mon 12/14/2015 3:08:41 PM
Subject: RE: FYI / Flint Journal: More lead in plumbing found at Flint, Michigan, Brownell school, state report says

I would recommend that. I have a gut feeling the issue isn't just Michigan.

It may be complicated/costly to really check, but since the success of the current and future LCR depends on accurate site selection, it needs to be grappled with, sooner or later. Sometimes the seemingly simplest assumptions of a reg turn out to be the critical flaws in practice.

--Mike

-----Original Message-----
From: Crooks, Jennifer
Sent: Monday, December 14, 2015 10:03 AM
To: Schock, Michael <Schock.Michael@epa.gov>; Deltoral, Miguel <deltoral.miguel@epa.gov>; Viveiros, Edward <Viveiros.Edward@epa.gov>; Banks, Victoria <Banks.Victoria@epa.gov>; Moriarty, Edward <Moriarty.EdwardJ@epa.gov>; Bosscher, Valerie <bosscher.valerie@epa.gov>; Kempic, Jeffrey <Kempic.Jeffrey@epa.gov>; Lytle, Darren <Lytle.Darren@epa.gov>; Porter, Andrea <porter.andrea@epa.gov>; Shoven, Heather <shoven.heather@epa.gov>; Kuefler, Janet <kuefler.janet@epa.gov>
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Cc: Kaplan, Robert[kaplan.robert@epa.gov]; Hyde, Tinka[hyde.tinka@epa.gov]; Henry, Timothy[henry.timothy@epa.gov]; Fortin, Denise[Fortin.Denise@epa.gov]; Deamer, Eileen[deamer.eileen@epa.gov]; Kelley, Jeff[kelley.jeff@epa.gov]; Rowan, Anne[rowan.anne@epa.gov]; Williams, Felicia[Williams.Felicia@epa.gov]
From: Hedman, Susan
Sent: Mon 12/14/2015 3:50:19 PM
Subject: Re: Flint Congressional Meetings - Peter Grevatt

Is there a possibility of moving the Lawrence meeting to later in the afternoon at a time when Peter can join me?

Sent from my iPhone

On Dec 14, 2015, at 9:08 AM, Beckmann, Ronna Erin <beckmann.ronna@epa.gov> wrote:

> Good morning,
>
> Peter Grevatt's scheduler confirmed that he will join you for the Sen. Peters and Rep. Kildee meetings.
>
> He won't be attending the Rep. Lawrence meeting, so please let me know if you'd like me find someone to accompany you.
>
> Thanks,
>
> Ronna Beckmann
>
> Office of the Regional Administrator
>
> U.S. Environmental Protection Agency, Region 5
>
> 312-886-0689
>
> beckmann.ronna@epa.gov
>
> **From:** Hedman, Susan
> **Sent:** Friday, December 11, 2015 12:05 PM

To: Beckmann, Ronna Erin <beckmann.ronna@epa.gov>
Cc: Kaplan, Robert <kaplan.robert@epa.gov>; Hyde, Tinka <hyde.tinka@epa.gov>; Henry, Timothy <henry.timothy@epa.gov>; Fortin, Denise <Fortin.Denise@epa.gov>; Deamer, Eileen <deamer.eileen@epa.gov>; Kelley, Jeff <kelley.jeff@epa.gov>; Rowan, Anne <rowan.anne@epa.gov>
Subject: RE: Flint Congressional Meetings Scheduled

Thanks very much.

One additional item I'd like to add to the briefing on Tuesday: a summary of the results from lead testing that has been done by the State and City – both tap water lead levels and blood lead levels. Also, anything we have heard about the testing being done by Hurley Medical Center.

From: Beckmann, Ronna Erin
Sent: Friday, December 11, 2015 10:43 AM
To: Hedman, Susan <hedman.susan@epa.gov>
Cc: Kaplan, Robert <kaplan.robert@epa.gov>; Hyde, Tinka <hyde.tinka@epa.gov>; Henry, Timothy <henry.timothy@epa.gov>; Fortin, Denise <Fortin.Denise@epa.gov>; Deamer, Eileen <deamer.eileen@epa.gov>; Kelley, Jeff <kelley.jeff@epa.gov>; Rowan, Anne <rowan.anne@epa.gov>
Subject: Flint Congressional Meetings Scheduled

You're all set. I've shared this info with Peter's scheduler – and will let you know when I've confirmed that he'll be joining you for all the meetings.

Wednesday, December 16

2:30pm – Rep. Lawrence in 1237 Longworth

3:30pm – Sen. Peters in 724 Hart

Thursday, December 17

10:00am – Rep. Kildee in 227 Cannon

Scheduling contacts in each office:

Lawrence – Zach Weber, 202-225-5802, Zach.Weber@mail.house.gov

Peters – Angeli Chawla, 202-224-6221, Angeli_Chawla@peters.senate.gov

Kildee – Nathaniel A. Brunner, 202-225-3611, Nathan.Brunner@mail.house.gov

Ronna Beckmann

Office of the Regional Administrator

U.S. Environmental Protection Agency, Region 5

312-886-0689

beckmann.ronna@epa.gov

To: Deltoral, Miguel[deltoral.miguel@epa.gov]; Thomas Poy[Poy.Thomas@epa.gov]; Kuefler, Janet[kuefler.janet@epa.gov]; Shoven, Heather[shoven.heather@epa.gov]; Porter, Andrea[porter.andrea@epa.gov]; Bair, Rita[bair.rita@epa.gov]
From: Crooks, Jennifer
Sent: Mon 12/14/2015 4:39:08 PM
Subject: check on Detroit Tier 1 sites?

Mike is recommending we do this, if possible. We can put this on our Wish List.

-----Original Message-----
From: Schock, Michael
Sent: Monday, December 14, 2015 9:09 AM
To: Crooks, Jennifer <crooks.jennifer@epa.gov>
Subject: RE: FYI / Flint Journal: More lead in plumbing found at Flint, Michigan, Brownell school, state report says

I would recommend that. I have a gut feeling the issue isn't just Michigan.

It may be complicated/costly to really check, but since the success of the current and future LCR depends on accurate site selection, it needs to be grappled with, sooner or later. Sometimes the seemingly simplest assumptions of a reg turn out to be the critical flaws in practice.

--Mike

-----Original Message-----
From: Crooks, Jennifer
Sent: Monday, December 14, 2015 10:03 AM
To: Schock, Michael <Schock.Michael@epa.gov>; Deltoral, Miguel <deltoral.miguel@epa.gov>; Viveiros, Edward <Viveiros.Edward@epa.gov>; Banks, Victoria <Banks.Victoria@epa.gov>; Moriarty, Edward <Moriarty.EdwardJ@epa.gov>; Bosscher, Valerie <bosscher.valerie@epa.gov>; Kempic, Jeffrey <Kempic.Jeffrey@epa.gov>; Lytle, Darren <Lytle.Darren@epa.gov>; Porter, Andrea <porter.andrea@epa.gov>; Shoven, Heather <shoven.heather@epa.gov>; Kuefler, Janet <kuefler.janet@epa.gov>
Subject: RE: FYI / Flint Journal: More lead in plumbing found at Flint, Michigan, Brownell school, state report says

Site selection of Tier 1 sites in Detroit---another possible action during our audit?

-----Original Message-----
From: Schock, Michael
Sent: Monday, December 14, 2015 8:50 AM
To: Deltoral, Miguel <deltoral.miguel@epa.gov>; Viveiros, Edward <Viveiros.Edward@epa.gov>; Banks, Victoria <Banks.Victoria@epa.gov>; Moriarty, Edward <Moriarty.EdwardJ@epa.gov>; Bosscher, Valerie <bosscher.valerie@epa.gov>; Kempic, Jeffrey <Kempic.Jeffrey@epa.gov>; Lytle, Darren <Lytle.Darren@epa.gov>; Porter, Andrea <porter.andrea@epa.gov>; Shoven, Heather <shoven.heather@epa.gov>; Crooks, Jennifer <crooks.jennifer@epa.gov>; Kuefler, Janet <kuefler.janet@epa.gov>
Subject: RE: FYI / Flint Journal: More lead in plumbing found at Flint, Michigan, Brownell school, state report says

It is interesting that elevated Pb levels are found even after switching back to the supposedly-"optimized" Detroit water. Hopefully, the additional phosphate added to Flint water starting last week will hasten improvement, but there are national cases where the phosphate does not entirely shut down the galvanic corrosion component of the lead leaching. One of our recommended studies is to continue to look at the different categories of lead sources in residential plumbing fed by Flint water (and relevant also to Genesee County and other water supplies to be impacted by water source and treatment changes), to make sure that they're all covered by the current and future water treatment configurations.

I am suspicious that the Detroit water is not really optimized, given the phosphate dosage is only about a third of what the 1995 pilot study tested (and multiple concentrations were not tested), and the determination that the lowered dosage isn't showing higher lead levels for Detroit (and is therefore cost-effective) could easily be explained by a skewed site selection and sampling protocol, if theirs is similar to what has been implemented in Flint.

Does anyone know if there is there a plan or schedule for the completion of faucet/device replacement for the schools? This article doesn't lay it out. And is there a plan to identify the lowest Pb leaching models to be put into the schools? That is important, as "lead free" does not mean absence of lead release.

--Mike

-----Original Message-----
From: Deltoral, Miguel
Sent: Friday, December 11, 2015 9:05 AM
To: Viveiros, Edward <Viveiros.Edward@epa.gov>; Banks, Victoria <Banks.Victoria@epa.gov>; Moriarty, Edward <Moriarty.EdwardJ@epa.gov>; Bosscher, Valerie <bosscher.valerie@epa.gov>; Kempic, Jeffrey <Kempic.Jeffrey@epa.gov>; Schock, Michael <Schock.Michael@epa.gov>; Lytle, Darren <Lytle.Darren@epa.gov>; Porter, Andrea <porter.andrea@epa.gov>; Shoven, Heather <shoven.heather@epa.gov>; Crooks, Jennifer <crooks.jennifer@epa.gov>; Kuefler, Janet <kuefler.janet@epa.gov>
Subject: FW: FYI / Flint Journal: More lead in plumbing found at Flint, Michigan, Brownell school, state report says

fyi

Miguel A. Del Toral
Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

From: Suero, Maryann
Sent: Friday, December 11, 2015 07:57 AM
To: Klevs, Mardi; Master, Edward; Deltoral, Miguel; Poy, Thomas; Harris, Kimberly
Subject: FYI / Flint Journal: More lead in plumbing found at Flint, Michigan, Brownell school, state report says

Another news article…

More lead in plumbing found at Flint, Michigan, Brownell school, state report says State testing at another Flint school has identified old faucets and plumbing as potential sources of lead leaching into water.
Flint Journal, Michigan.
http://www.mlive.com/news/flint/index.ssf/2015/12/state_report_identifies_more_l.html

To: Bair, Rita[bair.rita@epa.gov]; Harris, Kimberly[harris.kimberly@epa.gov]
Cc: Crooks, Jennifer[crooks.jennifer@epa.gov]
From: Shoven, Heather
Sent: Mon 12/14/2015 6:46:20 PM
Subject: FYI from Jennifer Crooks: MI Dept of Health and Human Services

Hi Rita and Kim – I just noticed that you were not on the distribution list for Jennifer's email below.

From: Crooks, Jennifer
Sent: Tuesday, December 01, 2015 3:01 PM
To: Poy, Thomas <poy.thomas@epa.gov>; Porter, Andrea <porter.andrea@epa.gov>; Deltoral, Miguel <deltoral.miguel@epa.gov>; Shoven, Heather <shoven.heather@epa.gov>; Kuefler, Janet <kuefler.janet@epa.gov>; Damato, Nicholas <damato.nicholas@epa.gov>
Subject: MI Dept of Health and Human Services

As you recall, Tom P and I talked with Richard Benzie and Liane at the end of August about the State doing a voluntary consumer education about lead in drinking water. And Liane said they would pursue this (documented in our meeting notes). I contacted the State—Mike Prysby—at the end of October or early November to ask what the status was of this consumer education piece. I discussed the need for consumer education of lead especially in the very low-income areas of Flint that saw their children's Blood Lead Levels triple, especially for people that don't read newspaper or watch the TV news or have a smartphone. He said that it had not been done, due to competing priorities; e.g. all the FOIAs, citizen and press inquiries. He said he would look into the status of this consumer education. After several weeks of contacting him, I learned that the Michigan Dept of Health and Human Services was the lead on developing consumer education on lead.

Today I talked with Linda Dykema, a toxicologist with HHS. She said that she and her group have been working on a number of education documents. Genesee County Health Dept is helping HHS understand the needs of the citizens of Flint, such as reducing the reading levels of the HHS documents/improving the readability, and discussing with HHS the questions the citizens of Flint want answered.

HHS developed and sent out packets of information to all the schools in Flint to be distributed to every school-age child, to take home to the parents. However, these were not as effective as hoped, due to the difficulty in readability of the information. This information is being re-worked to be written at a 6th-grade level.

They have issued FAQ's, information to parents, pregnant women, and other information on lead in drinking water.

All the documents they have developed for consumer education on lead are on the website:

http://www.michigan.gov/deq/0,4561,7-135-3313_3675_73946---,00.html

Linda did say that these consumer education pieces must be vetted through the DEQ and the Governor's office, so the process is slow.

I talked about the need for people in the low-income neighborhoods with the highest BLLs, to have information mailed to them or direct contact to get the information to EVERYONE. Linda said that Genesee County Health Dept is under resourced—funding and people. But they had a great idea, to get AmeriCorp volunteers to go into the low-income neighborhoods and go door-to-door to provide people information on how to protect themselves and their families from the lead in the drinking water. Linda thinks that this idea is moving forward, but the lack of resources may have slowed the effort. I asked about the Governor's office providing additional funding for this project, but Linda said that the Governor's office provided supplemental funding to DEQ and HHS, but she didn't think Genesee County received any supplemental funding. Linda has a call with Genesee County HD this week, so she will check on the status of this project and get back to me. She said she would see if there was something EPA could assist the CHD with.

Jennifer

To: Crooks, Jennifer[crooks.jennifer@epa.gov]
Cc: Shoven, Heather[shoven.heather@epa.gov]; Deltoral, Miguel[deltoral.miguel@epa.gov]; Bair, Rita[bair.rita@epa.gov]; Porter, Andrea[porter.andrea@epa.gov]; Poy, Thomas[poy.thomas@epa.gov]
From: Harris, Kimberly
Sent: Mon 12/14/2015 6:54:51 PM
Subject: RE: Consumer education

Hi Jen,

I'll try and catch you before you leave but yes, I've been working on health info re: orthophosphate - not for Genesee Cty HD but rather at the request of Tim Henry. Also, Heather asked me to respond to a citizen call (Citizen name / Ex. 6 so I'm preparing something for him today. Turns out ATSDR, USEPA-Cinc., and MDHHS developed an orthophosphate factsheet which is in the MDHHS signoff chain. I have the draft copy…

Since requests are coming in from various sources, I suggest that we cc each other on all Flint-related items to avoid duplication or conflicting info.

Thanks,

Kim

From: Crooks, Jennifer
Sent: Monday, December 14, 2015 12:14 PM
To: Harris, Kimberly <harris.kimberly@epa.gov>
Subject: Consumer education

Hi, Kim—I heard that you have received a request for health effects info from Genesee Cty HD. I also received a request for similar info from MI Dept of Health and Human Services. This is the draft response I've prepared—needed a couple of things from Miguel and haven't touched base with him. Would you be able to send me what you sent to Genesee Cty HD? I hear that the State and the County don't talk ☺.

Jen

Hi, Linda. Thank you for talking with me today. I talked with several of our lead experts here in our office.

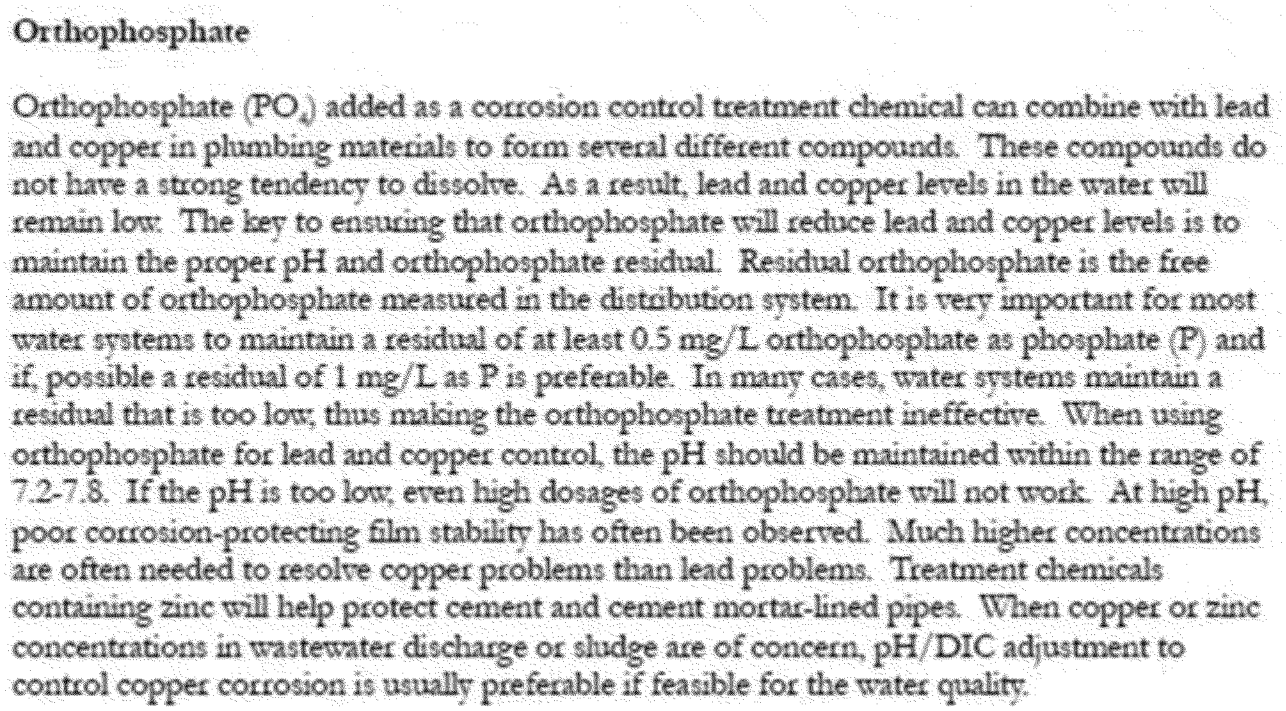
dykemal@michigan.gov

How do phosphates work to reduce lead in drinking water?

Orthophosphate is a chemical that is added to drinking water to control corrosion of water distribution pipes. The Orthophosphate combines with lead and copper in plumbing materials to form a protective coating on the inside of the pipes which will prevent lead from leaching into the drinking water.

intro orthophosphate info

Source: http://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P100999U.txt



Orthophosphate

Orthophosphate (PO$_4$) added as a corrosion control treatment chemical can combine with lead and copper in plumbing materials to form several different compounds. These compounds do not have a strong tendency to dissolve. As a result, lead and copper levels in the water will remain low. The key to ensuring that orthophosphate will reduce lead and copper levels is to maintain the proper pH and orthophosphate residual. Residual orthophosphate is the free amount of orthophosphate measured in the distribution system. It is very important for most water systems to maintain a residual of at least 0.5 mg/L orthophosphate as phosphate (P) and if, possible a residual of 1 mg/L as P is preferable. In many cases, water systems maintain a residual that is too low, thus making the orthophosphate treatment ineffective. When using orthophosphate for lead and copper control, the pH should be maintained within the range of 7.2-7.8. If the pH is too low, even high dosages of orthophosphate will not work. At high pH, poor corrosion-protecting film stability has often been observed. Much higher concentrations are often needed to resolve copper problems than lead problems. Treatment chemicals containing zinc will help protect cement and cement mortar-lined pipes. When copper or zinc concentrations in wastewater discharge or sludge are of concern, pH/DIC adjustment to control copper corrosion is usually preferable if feasible for the water quality.

Does the adding of phosphates have a bad effect on health?

The phosphate that is added to the drinking water is NSF certified, meaning it is not harmful to human health to add to drinking water.

Here is a link explaining the NSF/ANSI 60 Standard:

http://www.nsf.org/services/by-industry/water-wastewater/water-treatment-chemicals/nsf-ansi-standard-60

The standard is used to certify that chemicals added for water treatment meet health effects criteria. It’s one way that you could help explain the safety of using orthophosphate for corrosion control, in terms of human health effects.

Does phosphate reduce the effectiveness of the faucet filter that is removing the lead from the drinking water?

Will the filter get clogged from the addition of phosphates to reduce corrosion in the pipes?

Consumer Actions to Reduce lead in drinking water

http://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=20001R4V.txt

Linda—question: When you talk with Genesee County, I was wondering if the results of recent Blood Lead Levels of 1 and 2 year olds, is showing that the BLLs are going down, since residents are now using filters and Flint changed back to Detroit water.

Also, when Genesee County HD starts its AmeriCorp volunteer door-to-door campaign, I think it would be beneficial to prioritize the low-income areas of Flint first, since they are the areas with the highest Blood Lead Levels and the areas with people that might not have access to electronic news information, such as computers, smartphones, TVs.

Jennifer Kurtz Crooks

Michigan Program Manager

Ground Water and Drinking Water Branch

U.S. EPA Region 5

77 West Jackson Blvd.

Chicago, Illinois 60604

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312.582.5853 (fax)

To: Henry, Timothy[henry.timothy@epa.gov]; MIGUEL DEL TORAL(b) (6) [redacted]; Deltoral, Miguel[deltoral.miguel@epa.gov]; Kempic, Jeffrey[Kempic.Jeffrey@epa.gov]; Poy, Thomas[poy.thomas@epa.gov]
Cc: Kaplan, Robert[kaplan.robert@epa.gov]; Lytle, Darren[Lytle.Darren@epa.gov]
From: Schock, Michael
Sent: Mon 12/14/2015 10:39:57 PM
Subject: Breakdown of research plan studies

When you folks can get past the congressionals and get back to editing the research plan after our call last week, here is my suggestion on the breakdown of the studies:

Essential Corrosion Control Studies (for any system, size can be scaled to fit construction practices and number of connections)

5.1

5.2 (too late for 5.2.1, need to equilibrate pipes to be ready for 5.2.2, plus, systems should *leave pipe rigs in operation in flow-through mode* so that they are ready for any future treatment or source changes, and also to do ongoing periodic verification monitoring that Pb release has not been affected by more subtle background water chemistry changes.

5.3 Absolutely essential to optimize properly

5.7 You have to know what's on the pipes to determine what are permissible corrosion control treatment choices, and there needs to be verification that the mechanisms of protection are either what was expected, or not. This prevents problems like DC. We've been able to give some utilities timely advice as to what NOT to do, through this. Nobody knows what is really the mechanism in Detroit and which will probably be happening in Flint.

Health-related studies

5.6 Fixing wimpy language for LSL threats and both soluble and particulate release and dangers of water quality changes and disturbances, are public health necessities. Better messaging is needed to get customer-side LSLs replaced.

5.4 The amount of this problem will depend on community vacancy rates and actual metal leaching and inhibition mechanisms.

5.5 This is a huge need for evaluation of health threat and impacts.

--Mike

Michael R. Schock

U.S. Environmental Protection Agency

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Phone: 513.569.7412

schock.michael@epa.gov

“Let’s eat grandma!” “Let’s eat, grandma!” Respect grammar; commas save lives!

To: Kaplan, Robert[kaplan.robert@epa.gov]; Nelson, Leverett[nelson.leverett@epa.gov]; Hyde, Tinka[hyde.tinka@epa.gov]
From: Hedman, Susan
Sent: Tue 12/15/2015 1:10:59 AM
Subject: EPA says it won't take quick action on petition targeting Flint water safety

EPA says it won't take quick action on petition targeting Flint water safety

By Ron Fonger | rfonger1@mlive.com The Flint Journal
on December 11, 2015 at 6:05 PM, updated December 11, 2015 at 6:07 PM

FLINT, MI -- The U.S. Environmental Protection Agency won't act immediately on a petition that seeks to involve it more deeply in Flint's water crisis.

EPA Regional Administrator Susan Hedman told the Natural Resources Defense Council in a Dec. 10 letter that regulators will wait to act on the request "until such time as the agency determines that corrosion control treatment is fully optimized for the Flint system."

The NRDC petition, filed on Oct.1 on behalf of several organizations, urges EPA to order Flint to reconnect to the Detroit water system and to require other actions necessary to protect the health of city residents.

Since the filing of the filing of the petition, there have been several developments involving Flint water, including reconnection to Detroit water

and more widespread testing for lead.

"In light of the actions that the state and the city have taken during the past several weeks, EPA could arguably conclude that your petition fails to meet the jurisdictional prerequisites set forth in ... the Safe Drinking Water Act," Hedman's letter says.

Anjali Waikar, staff attorney for the NRDC, said a public health emergency remains in Flint and EPA "hasn't done enough to ensure safe drinking water."

Despite a reconnection to the Detroit water system, a public health emergency remains in place in Flint as the city attempts to rebuild a protective mineral coating in water transmission lines during the next few months.

From April 2014 until October, the city used the Flint River as its source of water but was not required to treat it to make less corrosive, causing lead to increasingly leach into the water supply.

Earlier this week, the city announced it has begun boosting the amount of phosphate to the

Detroit water it is receiving in an effort to better control corrosion and rebuild mineral scale that keeps lead from leaching as quickly.

Susan Hedman

Region 5 Administrator/Great Lakes National Program Manager

U.S. Environmental Protection Agency

77 West Jackson Blvd - 19th Floor

Chicago, Illinois 60604-3590

To: Hedman, Susan[hedman.susan@epa.gov]
Cc: Nelson, Leverett[nelson.leverett@epa.gov]; Hyde, Tinka[hyde.tinka@epa.gov]
From: Kaplan, Robert
Sent: Tue 12/15/2015 3:50:35 AM
Subject: Re: EPA says it won't take quick action on petition targeting Flint water safety

Thanks.

Sent from my iPhone

On Dec 14, 2015, at 7:11 PM, Hedman, Susan <hedman.susan@epa.gov> wrote:

EPA says it won't take quick action on petition targeting Flint water safety

By Ron Fonger | rfonger1@mlive.com The Flint Journal
on December 11, 2015 at 6:05 PM, updated December 11, 2015 at 6:07 PM

FLINT, MI -- The U.S. Environmental Protection Agency won't act immediately on a petition that seeks to involve it more deeply in Flint's water crisis.

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Anjali Waikar, staff attorney for the NRDC, said a public health emergency remains in Flint and EPA "hasn't done enough to ensure safe drinking water."

Despite a reconnection to the Detroit water system, a public health emergency remains in place in Flint as the city attempts to rebuild a protective mineral coating in water transmission lines during the next few months.

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Earlier this week, the city announced it has begun boosting the amount of phosphate to the Detroit water it is receiving in an effort to better control corrosion and rebuild mineral scale that keeps lead from leaching as quickly.

Susan Hedman

Region 5 Administrator/Great Lakes National Program Manager

U.S. Environmental Protection Agency

77 West Jackson Blvd - 19th Floor

Chicago, Illinois 60604-3590

To: Rizzo, George[Rizzo.George@epa.gov]; Schock, Michael[Schock.Michael@epa.gov]
Cc: Lytle, Darren[Lytle.Darren@epa.gov]; Speth, Thomas[Speth.Thomas@epa.gov]; Bosscher, Valerie[bosscher.valerie@epa.gov]; Porter, Andrea[porter.andrea@epa.gov]; Poy, Thomas[poy.thomas@epa.gov]
From: Deltoral, Miguel
Sent: Tue 12/15/2015 10:42:17 AM
Subject: RE: Flint River Study

Thanks for hunting this down!

Unless the media knows something that is not included in this report, they are likely misinterpreting the 'phosphate' listed as orthophosphate. I see nothing in this report that would indicate they considered corrosion control which is pretty stunning. The 'phosphate' listed is very likely just polyphosphate, since phosphate and polyphosphate are often used interchangeably and the use of polyphosphate is referred to by LAN in a more recent document.

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Chicago, IL 60604
Phone: (312) 886-5253

From: Rizzo, George
Sent: Monday, December 14, 2015 01:43 PM
To: Schock, Michael
Cc: Lytle, Darren; Deltoral, Miguel; Speth, Thomas
Subject: RE: Flint River Study

Mike,

Thanks so much for all the documents you sent. I had seen the "City of Flint Water Supply Assessment, February 2013" previously. When I looked at it today, I found that the document I was looking for was listed on page 6 which is the "Analysis of the Flint River as a Permanent Water Supply for the City of Flint, 2011." After some Googling and subscribing to SCRIBD.com, I found the attached documents which are the report and its appendices. Neither document considers corrosion control treatment as a parameter to be addressed, although a cost estimate for phosphate addition is included in Appendix 8. I'm not sure if Flint followed any of the recommendations in this report before switching sources. What I have found interesting is that the "City of Flint Water Supply Assessment, February 2013", which was conducted by the Michigan State Treasurer's Office, recommended that Flint continue buying water from Detroit, but the State Emergency Manager(s) allowed Flint to contract with the Karegnondi Water Authority. Politics anyone?

George

George S. Rizzo
Environmental Scientist
Drinking Water Branch (3WP21)
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1650 Arch Street
Philadelphia, PA 19103-2029
Phone: 215-814-5781
FAX: 215-814-2302

-----Original Message-----

From: Schock, Michael
Sent: Monday, December 14, 2015 12:54 PM
To: Rizzo, George <Rizzo.George@epa.gov>
Cc: Lytle, Darren <Lytle.Darren@epa.gov>; Deltoral, Miguel <deltoral.miguel@epa.gov>; Speth, Thomas <Speth.Thomas@epa.gov>
Subject: RE: Flint River Study

Hi, George;

This is all that I have, and I don't think there ever was a competent, technical study done to focus on the corrosion control impacts. These studies were aimed at water quantity aspects, except the one that looked at THMs. I am thinking that the 2013 Water Supply Assessment document attached may be the study referenced on the flintwaterstudy.org web site. The study was commissioned in 2011 but finished in 2013. No mention of corrosion control for lead, though.

The mistake made to go from Detroit to Flint River water was predictable with the knowledge of even 30-35 years ago. You can't put a water with a pH of 7.5 or so into a system full of lead pipes. End of story. And certainly not put it into brass and soldered copper with a boatload of chloride, on top of the low pH. The central problem is that the LCR framework cannot currently prevent the implementation of knowingly incompetent, stupid technical decisions. States are generally powerless to stop it, even if they know better. And sometimes they either don't know better, or don't care. This situation was both. State guidance is to pre-flush for 3-4 minutes before LCR sampling stagnation (Flint instructions said 5 minutes), 6-8 hours standing with no use from that faucet, then add it to many houses having plastic interior plumbing because either old galvanized pipe failed or copper was stolen during vacant periods. Additionally, there was no verification that sites sampled actually met the targeting criteria of the LCR. This is a clinic on LCR flaws.

The consultants, DEQ and Flint apparently all thought that "lime softening" was sufficient for corrosion control, though they did not take into account that using recarbonation to lower the pH by a couple of units undid any benefit. Plus, quick calculations Darren did from monthly operating data suggested wild swings in pH (though always too low) and carbonate concentration, so that whole process was out of control.

The Veolia report reflects a scary lack of concern about the lead. They suggested saving lime and reducing softening, but focused on TTHMs and the aesthetic aspect of discolored water from iron corrosion and main breaks. Their suggestion was POLYPHOSPHATE addition as a partial solution, absolutely the worst thing they could do for lead on top of the low pH.

--Mike

-----Original Message-----
From: Rizzo, George
Sent: Monday, December 14, 2015 8:46 AM
To: Deltoral, Miguel <deltoral.miguel@epa.gov>
Cc: Schock, Michael <Schock.Michael@epa.gov>; Lytle, Darren <Lytle.Darren@epa.gov>
Subject: RE: Flint River Study

Miguel,

Thanks for letting me know. I hope that a copy shows up.

George

George S. Rizzo

Environmental Scientist
Drinking Water Branch (3WP21)
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Phone: 215-814-5781
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-----Original Message-----
From: Deltoral, Miguel
Sent: Friday, December 11, 2015 8:37 AM
To: Rizzo, George <Rizzo.George@epa.gov>
Cc: Schock, Michael <Schock.Michael@epa.gov>; Lytle, Darren <Lytle.Darren@epa.gov>
Subject: RE: Flint River Study

Hi George,

I read that article but I do not have a copy of the report mentioned. Mike Schock and Darren Lytle have had more contact with the Flint folks, so I'm copying them to see if they have seen it.

Miguel A. Del Toral
Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

From: Rizzo, George
Sent: Thursday, December 10, 2015 01:08 PM
To: Deltoral, Miguel
Subject: Flint River Study

Miguel,

I've been following the Flint lead issue mainly by checking the flintwaterstudy.org web site. In one of the articles posted there that I read last week, which I can't find now, it was mentioned that the City of Flint in 2011 had a contractor prepare a report on what would be needed if they began to use the flint River as a permanent source. It was further stated that the City submitted this report to the Michigan DEQ sometime in 2013. However, it appears that the DEQ did not consider the report when they allowed Flint to switch sources. I'm wondering if you have seen this 2011 report, and if so, could you send me a copy. I'm really curious about the report's recommendations, as a source switch like Flint's is probably a rare occurrence. I think that we might want to clarify what may be needed to approved a source change as part of the LCRLTR and/or LCR guidance. The 2011 report might be helpful in considering what might be needed in the LCR and its guidance.

I know that you're on the Flint work group so there's no rush to send me the report if you have access to it. Thanks.

George

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Phone: 215-814-5781
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To: Poy, Thomas[poy.thomas@epa.gov]
Cc: Bosscher, Valerie[bosscher.valerie@epa.gov]; Porter, Andrea[porter.andrea@epa.gov]
From: Deltoral, Miguel
Sent: Tue 12/15/2015 10:45:50 AM
Subject: FW: Flint River Study
64381765-Analysis-of-the-Flint-River-as-a-Permanent-Water-Supply-for-the-City-of-Flint-July-2011.pdf
64382181-Analysis-of-the-Flint-River-as-a-Permanent-Water-Supply-for-the-City-of-Flint-July-2011-Appendices-1-to-8.pdf

Here are the docs from George.

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From: Rizzo, George
Sent: Monday, December 14, 2015 01:43 PM
To: Schock, Michael
Cc: Lytle, Darren; Deltoral, Miguel; Speth, Thomas
Subject: RE: Flint River Study

Mike,

Thanks so much for all the documents you sent. I had seen the "City of Flint Water Supply Assessment, February 2013" previously. When I looked at it today, I found that the document I was looking for was listed on page 6 which is the "Analysis of the Flint River as a Permanent Water Supply for the City of Flint, 2011." After some Googling and subscribing to SCRIBD.com, I found the attached documents which are the report and its appendices. Neither document considers corrosion control treatment as a parameter to be addressed, although a cost estimate for phosphate addition is included in Appendix 8. I'm not sure if Flint followed any of the recommendations in this report before switching sources. What I have found interesting is that the "City of Flint Water Supply Assessment, February 2013", which was conducted by the Michigan State Treasurer's Office, recommended that Flint continue buying water from Detroit, but the State Emergency Manager(s) allowed Flint to contract with the Karegnondi Water Authority. Politics anyone?

George

George S. Rizzo
Environmental Scientist
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U.S. EPA Region III
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Philadelphia, PA 19103-2029
Phone: 215-814-5781
FAX: 215-814-2302

-----Original Message-----
From: Schock, Michael
Sent: Monday, December 14, 2015 12:54 PM
To: Rizzo, George <Rizzo.George@epa.gov>
Cc: Lytle, Darren <Lytle.Darren@epa.gov>; Deltoral, Miguel <deltoral.miguel@epa.gov>; Speth, Thomas <Speth.Thomas@epa.gov>

Subject: RE: Flint River Study

Hi, George;

This is all that I have, and I don't think there ever was a competent, technical study done to focus on the corrosion control impacts. These studies were aimed at water quantity aspects, except the one that looked at THMs. I am thinking that the 2013 Water Supply Assessment document attached may be the study referenced on the flintwaterstudy.org web site. The study was commissioned in 2011 but finished in 2013. No mention of corrosion control for lead, though.

The mistake made to go from Detroit to Flint River water was predictable with the knowledge of even 30-35 years ago. You can't put a water with a pH of 7.5 or so into a system full of lead pipes. End of story. And certainly not put it into brass and soldered copper with a boatload of chloride, on top of the low pH. The central problem is that the LCR framework cannot currently prevent the implementation of knowingly incompetent, stupid technical decisions. States are generally powerless to stop it, even if they know better. And sometimes they either don't know better, or don't care. This situation was both. State guidance is to pre-flush for 3-4 minutes before LCR sampling stagnation (Flint instructions said 5 minutes), 6-8 hours standing with no use from that faucet, then add it to many houses having plastic interior plumbing because either old galvanized pipe failed or copper was stolen during vacant periods. Additionally, there was no verification that sites sampled actually met the targeting criteria of the LCR. This is a clinic on LCR flaws.

The consultants, DEQ and Flint apparently all thought that "lime softening" was sufficient for corrosion control, though they did not take into account that using recarbonation to lower the pH by a couple of units undid any benefit. Plus, quick calculations Darren did from monthly operating data suggested wild swings in pH (though always too low) and carbonate concentration, so that whole process was out of control.

The Veolia report reflects a scary lack of concern about the lead. They suggested saving lime and reducing softening, but focused on TTHMs and the aesthetic aspect of discolored water from iron corrosion and main breaks. Their suggestion was POLYPHOSPHATE addition as a partial solution, absolutely the worst thing they could do for lead on top of the low pH.

--Mike

-----Original Message-----
From: Rizzo, George
Sent: Monday, December 14, 2015 8:46 AM
To: Deltoral, Miguel <deltoral.miguel@epa.gov>
Cc: Schock, Michael <Schock.Michael@epa.gov>; Lytle, Darren <Lytle.Darren@epa.gov>
Subject: RE: Flint River Study

Miguel,

Thanks for letting me know. I hope that a copy shows up.

George

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-----Original Message-----
From: Deltoral, Miguel
Sent: Friday, December 11, 2015 8:37 AM
To: Rizzo, George <Rizzo.George@epa.gov>
Cc: Schock, Michael <Schock.Michael@epa.gov>; Lytle, Darren <Lytle.Darren@epa.gov>
Subject: RE: Flint River Study

Hi George,

I read that article but I do not have a copy of the report mentioned. Mike Schock and Darren Lytle have had more contact with the Flint folks, so I'm copying them to see if they have seen it.

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From: Rizzo, George
Sent: Thursday, December 10, 2015 01:08 PM
To: Deltoral, Miguel
Subject: Flint River Study

Miguel,

I've been following the Flint lead issue mainly by checking the flintwaterstudy.org web site. In one of the articles posted there that I read last week, which I can't find now, it was mentioned that the City of Flint in 2011 had a contractor prepare a report on what would be needed if they began to use the flint River as a permanent source. It was further stated that the City submitted this report to the Michigan DEQ sometime in 2013. However, it appears that the DEQ did not consider the report when they allowed Flint to switch sources. I'm wondering if you have seen this 2011 report, and if so, could you send me a copy. I'm really curious about the report's recommendations, as a source switch like Flint's is probably a rare occurrence. I think that we might want to clarify what may be needed to approved a source change as part of the LCRLTR and/or LCR guidance. The 2011 report might be helpful in considering what might be needed in the LCR and its guidance.

I know that you're on the Flint work group so there's no rush to send me the report if you have access to it. Thanks.

George

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To: Schock, Michael[Schock.Michael@epa.gov]; Henry, Timothy[henry.timothy@epa.gov]; MIGUEL DEL TORAL(b) (6) [redacted]; Kempic, Jeffrey[Kempic.Jeffrey@epa.gov]; Poy, Thomas[poy.thomas@epa.gov]
Cc: Kaplan, Robert[kaplan.robert@epa.gov]; Lytle, Darren[Lytle.Darren@epa.gov]
From: Deltoral, Miguel
Sent: Tue 12/15/2015 12:17:11 PM
Subject: RE: Breakdown of research plan studies

We are close to it being pointless to extract any lead service lines for use in the pipe rigs, even for the KWA study unless we wait until Spring which will likely result in a longer timeframe Flint will have to be on Detroit water at $1M+ per month. Many folks will be off the second half of next week so by the time the funding comes and lines are excavated, the harder ground will result in more damage to the scales within the pipe. They will likely not resemble what is in the pipes out there. As much as I hate to say it, we wasted too much time on the funding. We may as well save the excavation cost and use new lead pipe.

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From: Schock, Michael
Sent: Monday, December 14, 2015 04:39 PM
To: Henry, Timothy; MIGUEL DEL TORAL; Deltoral, Miguel; Kempic, Jeffrey; Poy, Thomas
Cc: Kaplan, Robert; Lytle, Darren
Subject: Breakdown of research plan studies

When you folks can get past the congressionals and get back to editing the research plan after our call last week, here is my suggestion on the breakdown of the studies:

Essential Corrosion Control Studies (for any system, size can be scaled to fit construction practices and number of connections)

5.1

5.2 (too late for 5.2.1, need to equilibrate pipes to be ready for 5.2.2, plus, systems should leave pipe rigs in operation in flow-through mode so that they are ready for any future treatment or source changes, and also to do ongoing periodic verification monitoring that Pb release has not been affected by more subtle background water chemistry changes.

5.3 Absolutely essential to optimize properly

5.7 You have to know what's on the pipes to determine what are permissible corrosion control treatment choices, and there needs to be verification that the mechanisms of protection are either what was expected, or not. This prevents problems like DC. We've been able to give some utilities timely advice as to what NOT to do, through this. Nobody knows what is really the mechanism in Detroit and which will probably be happening in Flint.

Health-related studies

5.6 Fixing wimpy language for LSL threats and both soluble and particulate release and dangers of water quality changes and disturbances, are public health necessities. Better messaging is needed to get customer-side LSLs replaced.

5.4 The amount of this problem will depend on community vacancy rates and actual metal leaching and inhibition mechanisms.

5.5 This is a huge need for evaluation of health threat and impacts.

--Mike

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“Let’s eat grandma!” “Let’s eat, grandma!” Respect grammar; commas save lives!

To: Harris, Kimberly[harris.kimberly@epa.gov]; Crooks, Jennifer[crooks.jennifer@epa.gov]
Cc: Shoven, Heather[shoven.heather@epa.gov]; Bair, Rita[bair.rita@epa.gov]; Porter, Andrea[porter.andrea@epa.gov]; Poy, Thomas[poy.thomas@epa.gov]
From: Deltoral, Miguel
Sent: Tue 12/15/2015 12:49:32 PM
Subject: RE: Consumer education
image001.jpg

Kim - I think Mike Schock & Darren Lytle were also looking at something on PO4 health effects, so make sure to coordinate with them.

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From: Harris, Kimberly
Sent: Monday, December 14, 2015 12:54 PM
To: Crooks, Jennifer
Cc: Shoven, Heather; Deltoral, Miguel; Bair, Rita; Porter, Andrea; Poy, Thomas
Subject: RE: Consumer education

Hi Jen,

I'll try and catch you before you leave but yes, I've been working on health info re: orthophosphate - not for Genesee Cty HD but rather at the request of Tim Henry. Also, Heather asked me to respond to a citizen call (Arthur Woodson) so I'm preparing something for him today. Turns out ATSDR, USEPA-Cinc., and MDHHS developed an orthophosphate factsheet which is in the MDHHS signoff chain. I have the draft copy…

Since requests are coming in from various sources, I suggest that we cc each other on all Flint-related items to avoid duplication or conflicting info.

Thanks,
Kim

From: Crooks, Jennifer
Sent: Monday, December 14, 2015 12:14 PM
To: Harris, Kimberly <harris.kimberly@epa.gov>
Subject: Consumer education

Hi, Kim—I heard that you have received a request for health effects info from Genesee Cty HD. I also received a request for similar info from MI Dept of Health and Human Services. This is the draft response I've prepared—needed a couple of things from Miguel and haven't touched base with him. Would you be able to send me what you sent to Genesee Cty HD? I hear that the State and the County don't talk ☺.
Jen

Hi, Linda. Thank you for talking with me today. I talked with several of our lead experts here in our office.
dykemal@michigan.gov<mailto:dykemal@michigan.gov>

How do phosphates work to reduce lead in drinking water?
Orthophosphate is a chemical that is added to drinking water to control corrosion of water distribution pipes. The Orthophosphate combines with lead and copper in plumbing materials to form a protective coating on the inside of the pipes which will prevent lead from leaching into the drinking water.

intro orthophosphate info

Source: http://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P100999U.txt

[cid:image001.png@01D12C58.43F3F260]

Does the adding of phosphates have a bad effect on health?

The phosphate that is added to the drinking water is NSF certified, meaning it is not harmful to human health to add to drinking water.

Here is a link explaining the NSF/ANSI 60 Standard:
http://www.nsf.org/services/by-industry/water-wastewater/water-treatment-chemicals/nsf-ansi-standard-60

The standard is used to certify that chemicals added for water treatment meet health effects criteria. It's one way that you could help explain the safety of using orthophosphate for corrosion control, in terms of human health effects.

Does phosphate reduce the effectiveness of the faucet filter that is removing the lead from the drinking water?

Will the filter get clogged from the addition of phosphates to reduce corrosion in the pipes?

Consumer Actions to Reduce lead in drinking water
http://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=20001R4V.txt

Linda—question: When you talk with Genesee County, I was wondering if the results of recent Blood Lead Levels of 1 and 2 year olds, is showing that the BLLs are going down, since residents are now using filters and Flint changed back to Detroit water.

Also, when Genesee County HD starts its AmeriCorp volunteer door-to-door campaign, I think it would be beneficial to prioritize the low-income areas of Flint first, since they are the areas with the highest Blood Lead Levels and the areas with people that might not have access to electronic news information, such as computers, smartphones, TVs.

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Orthophosphate

Orthophosphate (PO_4) added as a corrosion control treatment chemical can combine with lead and copper in plumbing materials to form several different compounds. These compounds do not have a strong tendency to dissolve. As a result, lead and copper levels in the water will remain low. The key to ensuring that orthophosphate will reduce lead and copper levels is to maintain the proper pH and orthophosphate residual. Residual orthophosphate is the free amount of orthophosphate measured in the distribution system. It is very important for most water systems to maintain a residual of at least 0.5 mg/L orthophosphate as phosphate (P) and if, possible a residual of 1 mg/L as P is preferable. In many cases, water systems maintain a residual that is too low, thus making the orthophosphate treatment ineffective. When using orthophosphate for lead and copper control, the pH should be maintained within the range of 7.2-7.8. If the pH is too low, even high dosages of orthophosphate will not work. At high pH, poor corrosion-protecting film stability has often been observed. Much higher concentrations are often needed to resolve copper problems than lead problems. Treatment chemicals containing zinc will help protect cement and cement mortar-lined pipes. When copper or zinc concentrations in wastewater discharge or sludge are of concern, pH/DIC adjustment to control copper corrosion is usually preferable if feasible for the water quality.

To: Hedman, Susan[hedman.susan@epa.gov]; Kaplan, Robert[kaplan.robert@epa.gov]; Hyde, Tinka[hyde.tinka@epa.gov]
Cc: Rowan, Anne[rowan.anne@epa.gov]; Cassell, Peter[cassell.peter@epa.gov]; Beckmann, Ronna Erin[beckmann.ronna@epa.gov]; Fortin, Denise[Fortin.Denise@epa.gov]; Deamer, Eileen[deamer.eileen@epa.gov]; Harrison, Melissa[Harrison.Melissa@epa.gov]; Abrams, Dan[Abrams.Dan@epa.gov]; Grantham, Nancy[Grantham.Nancy@epa.gov]
From: Kelley, Jeff
Sent: Tue 12/15/2015 1:51:53 PM
Subject: Flint water clips for Dec. 15

- □□□□□□□□ In Flint, Mich., there's so much lead in children's blood that a state of emergency is declared (Washington Post)

- □□□□□□□□ Mayor Karen Weaver declares water crisis state of emergency in Flint (Flint Journal)

- □□□□□□□□ This mom helped uncover what was really going on with Flint's water (part one of the Michigan Radio documentary Not Safe to Drink)

- □□□□□□□□ Flint Mayor Declares State of Emergency Over Water Problems (Associated Press)

- □□□□□□□□ FEMA sends 28,000 liters of bottled water to Flint amid lead troubles (Flint Journal)

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https://www.washingtonpost.com/news/morning-mix/wp/2015/12/15/toxic-water-soaring-lead-levels-in-childrens-blood-create-state-of-emergency-in-flint-mich/

In Flint, Mich., there's so much lead in children's blood that a state of emergency is declared

By Yanan Wang December 15 at 4:31 AM

Flint, Mich., resident Gladyes Williamson cries out through her tears, overwhelmed with frustration over the water drawn from the Flint River. (Jake May /Flint Journal-MLive.com via AP)

For months, worried parents in Flint, Mich., arrived at their pediatricians' offices in droves. Holding a toddler by the hand or an infant in their arms, they all have the same question: Are their children being poisoned?

To find out, all it takes is a prick of the finger, a small letting of blood. If tests come back positive, the potentially severe consequences are far more difficult to discern.

That's how lead works. It leaves its mark quietly, with a virtually invisible trail. But years later, when a child shows signs of a learning disability or behavioral issues, lead's prior presence in the bloodstream suddenly becomes inescapable.

According to the World Health Organization, "lead affects children's brain development resulting in reduced intelligence quotient (IQ), behavioral changes such as shortening of attention span and increased antisocial behavior, and reduced educational attainment. Lead exposure also causes anemia, hypertension, renal impairment, immunotoxicity and toxicity to the reproductive organs. The neurological and behavioral effects of lead are believed to be irreversible."

The Hurley Medical Center, in Flint, released a study in September that confirmed what many Flint parents had feared for over a year: The proportion of infants and children with above-average levels of lead in their blood has nearly doubled since the city switched from the Detroit water system to using the Flint River as its water source, in 2014.

The crisis reached a nadir Monday night, when Flint Mayor Karen Weaver declared a state of emergency.

"The City of Flint has experienced a Manmade disaster," Weaver said in a declaratory statement.

The mayor — elected after her predecessor, Dayne Walling, experienced fallout from his administration's handling of the water problems — said in the statement that she was seeking support from the federal government to deal with the "irreversible" effects of lead exposure on the city's children. Weaver thinks that these health consequences will lead to a greater need for special education and mental health services, as well as developments in the juvenile justice system.

"Do we meet the criteria [for a disaster area]? I don't know," she told Michigan Live. But Weaver doesn't think the city can receive the help it needs without alerting federal officials to the urgency of the matter.

To those living in Flint, the announcement may feel as if it has been a long time coming.

Almost immediately after the city started drawing from the Flint River in April 2014, residents began complaining about the water, which they said was cloudy in appearance and emitted a foul odor.

Since then, complications from the water coming from the Flint River have only piled up. Although city and state officials initially denied that the water was unsafe, the state issued a notice informing Flint residents that their water contained unlawful levels of trihalomethanes, a chlorine byproduct linked to cancer and other diseases.

Protesters marched to City Hall in the fierce Michigan cold, calling for officials to reconnect Flint's water to the Detroit system. The use of the Flint River was supposed to be temporary, set to end in 2016 after a pipeline to Lake Huron's Karegnondi Water Authority is finished.

A petition lobbying for the ending the city's Flint River water supply garnered 26,000 signatures.

Through continued demonstrations by Flint residents and mounting scientific evidence of the water's toxins, city and state officials offered various solutions — from asking residents to boil their water to providing them with water filters — in an attempt to work around the need to reconnect to the Detroit system.

That call was finally made by Gov. Rick Snyder (R) on Oct. 8. He announced that he had a plan for coming up with the $12 million to switch Flint back to the Detroit system. On Oct. 16, water started flowing again from Detroit to Flint.

This, too, was accompanied by the sense that it had come too late, particularly for the parents of children who may have been permanently affected.

These parents and other Flint residents filed a class-action federal lawsuit against Snyder, the state, the city and 13 other public officials in November for the damages they have suffered as a result of the lead-tainted water. The suit, which claims to represent “tens of thousands of residents,” alleges that the city and state officials “deliberately deprived” them of their 14th Amendment rights by replacing formerly safe drinking water with a cheaper alternative that was known to be highly toxic.

“For more than 18 months, state and local government officials ignored irrefutable evidence that the water pumped from the Flint River exposed [residents] to extreme toxicity,” the complaint reads. “The deliberately false denials about the safety of the Flint River water was as deadly as it was arrogant.”

Calling officials’ conduct “so egregious and so outrageous that it shocks the conscience,” the complaint cites the specific experiences of a few plaintiffs and their families, all of whom allege they have been challenged by similar health ailments since high levels of lead and copper entered their bloodstreams.

These conditions include skin lesions, hair loss, chemical-induced hypertension, vision loss and depression. Of the four families described in the complaint, two had ceased to drink Flint water after a certain point — and used it only for washing and cooking — but still said they were exposed to many of the same ill effects.

As the Detroit Free Press reported in October, avoiding Flint water became a way of life for the city’s residents.

Those who could afford it opted for bottled water, buying it by the gallons. Those who couldn't spare the money drank it straight from the tap all the same, knowing that they would be paying for it later. When it came to bathing, some slowly filled bathtubs with pots of boiled water for their children.

LeeAnn Walters, a Flint resident and mother of 4-year-old twins, took every precaution after blood tests revealed that the level of lead in one of her sons had soared after the switch to Flint River.

“I was hysterical,” Walters told the Free Press. “I cried when they gave me my first lead report.”

She had feared lead was the problem when her whole family developed rashes and her son stopped gaining weight.

Now, Walters said, when her children experience problems as they grow up, she will always wonder whether things would have been different — if their lives would have been better — if it weren't for the water.

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http://www.mlive.com/news/flint/index.ssf/2015/12/mayor_karen_weaver_declares_st.html

Mayor Karen Weaver declares water crisis state of emergency in Flint

By Ron Fonger | rfonger1@mlive.com The Flint Journal on December 14, 2015 at 9:37 PM, updated December 15, 2015 at 7:39 AM

FLINT, MI -- Mayor Karen Weaver has declared a state of emergency in Flint, saying the city needs federal help to deal with its lead in water crisis.

"I am requesting that all things be done necessary to address this state of emergency declaration, effective immediately," Weaver told the City Council today, Dec. 14.

The new mayor asked that the Genesee County Board of Commissioners call a special meeting to take action to support her declaration, that it be forwarded to Gov. Rick Snyder, and potentially President Obama.

The end result of the resolution is not known, but Weaver said the city can't expect further help from the federal government without it.

"Do we meet the criteria (for a disaster area)? I don't know," Weaver said. "I'm going to ask and let them tell us no."

Flint is in a public health emergency, declared by Genesee County, because of rising levels of lead in water and in the blood of children after the city changed its water source to the Flint River from April 2014 until October.

The county declaration came after a Hurley Medical Center doctor's study showed the percentage of Flint infants and children with above-average lead levels nearly doubled citywide, and nearly tripled among children in "high risk" areas of lead exposure.

City officials have also said the use of corrosive Flint River water also damaged Flint's water infrastructure after state regulators never required the river water be treated to make it less corrosive.

Council members were divided in their opinion about what the declaration will mean.

"What this does is help position us as a community to show ... that we need resources in our community," said Councilman Scott Kincaid. "(It allows for us) to apply for state and federal funds. We have to prove ... that we need resources."

Councilman Josh Freeman said he doesn't want residents to expect immediate help with the city's water infrastructure, including lead service lines, because of the declaration.

"We need to find a way to actually fix the problem," Freeman said. "This declaration does not (fix the problem)."

Weaver's resolution says the damage done to Flint children because of lead exposure is irreversible, creating the need for increased spending on special education and mental health services and increased stress on the juvenile justice system.

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http://michiganradio.org/post/mom-helped-uncover-what-was-really-going-flint-s-water

This mom helped uncover what was really going on with Flint's water (part one of the Michigan Radio documentary Not Safe to Drink)

Lindsey Smith, Michigan Radio • 17 hours ago

Up until October, the Walters family lived in a yellow two-story home on the south side of Flint. A couple of red maple trees shade the tiny front yard.

Walters heads to the back of the house, in a small room off of the kitchen, where the family keeps its stockpile of bottled water.

“This is our water stash. Once a week we go and we fill 40 gallons of water, so we have water to drink with, to cook with, and to bathe Gavin and Garrett in,” says Lee Anne Walters.

Walters won’t let her kids drink any water from her faucet. She won’t even let her four-year-old boys, Gavin and Garrett, bathe in anything but bottled water, so preparing for bath time is quite the chore.

Walters takes jugs of water she buys at the store, dumps them in large pots, and heats the water on her stove. Once it boils, she dumps the water in the bathtub. Then she adds three or four gallons of cool water to sort of get the bath at the right temperature.

Over several months, Walters says she’s gotten pretty efficient at this routine. She’s got bath prep down to about 45 minutes.

“And then in between, because we only do the bathing thing once a week now – because, one, it’s expensive, and two, the expense of all this on top of the water bills? We do baby wipe baths in between,” says Walters.

Walters scrubs the boys down with baby wipes almost every day. Luckily, her husband can shower at work. Her two oldest kids – they're teenagers – usually shower over at grandma’s house outside of town.

There’s a lot of people in Flint who knew something was wrong with the water, but this family’s story, particularly Walters' role as a worried mother, changed everything about how the water crisis in Flint was handled.

Something’s in the swimming pool

People in Flint started complaining about their tap water early in the summer of 2014 – not long after the city stopped pumping its drinking water from Detroit.

Instead, Flint started pumping it from the Flint River. Back then, Lee Anne Walters didn't think it was that big of a deal.

They had just bought their house. Someone had stripped all the plumbing from it, so they had to redo the house with new plumbing, and they installed a whole house filter.

Every drop of water that comes into her home goes through this filter.

But a few weeks after the city's switch to water from the Flint River, Walters noticed something was weird.

She had just set up the swimming pool in the side yard for the summer.

“Gavin started breaking out every time he'd get in the pool,” says Walters.

The rash was bad enough that Walters took him to the doctor.

“And the doctors kept telling us it was contact dermatitis.” She says they told her that “he's coming into contact with something that he's allergic to.”

Later, Walters says her doctors suggested it was eczema. They gave her a cortisone cream to rub on Gavin's rash, but by July 2014, it wasn't just Gavin. His twin brother Garrett got the rash too.

“And we took them in and they told us it was scabies, so we treated them with a pesticide,” says Walters.

Tiny mites cause scabies, and the common treatment is a chemical that’s also in some pesticides. It’s even in some mosquito nets and flea collars.

Walters rubbed the prescription cream on her twin boys from the neck down.

“I spent a ton of money because all the laundry that we had, all the bedding that we had, we took it to a laundromat,” she says.

Walters was relieved when the boys’ rash went away, but that feeling didn’t last long.

Walters remembers the day the rash came back, because she had a bunch of people over to celebrate her daughter’s high school graduation.

“And all the people that were here swimming and drinking the water, all of them broke out,” she says.

She scheduled another doctor's appointment for her four-year-olds. She got the same diagnosis, but Walters really had some doubts about the scabies diagnosis, especially after the party.

“The third time they tried to convince us that it was scabies, I said, ‘nun-uh, no.’ The cream wasn’t working on Gavin - period. He had that rash for more than a month straight.”

Walters wasn’t standing for it anymore, so she took Gavin to a dermatologist down in Brighton. They scraped in between Gavin’s little toes, and put it under the microscope.

“And she verified by doing the skin scrapes that there was no scabies. There was no live anything – no dead anything – no eggs, so no scabies,” she says.

She still didn’t know what caused the rash, but Walters noticed something. Gavin’s rash flared up every time he swam in the pool, and every time he took a bath.

Something clicked.

It became clear to her right then that Gavin’s rash was caused by something in the tap water.

The city of Flint learns about Walters' problem

Eight months after Flint started pumping its drinking water from the Flint River, Lee Anne Walters stopped letting her kids drink it – everyone from the four-year-old twins, Garrett and Gavin – to her teenagers, JD and Kaylie.

“We quit drinking the water in December, when my 14-year-old got sick and it started coming through our filter and out the kitchen sink brown,” she says.

That was December 2014.

Walters says the water had this orangeish-brown tinge that would not go away, even when she put a fresh cartridge in the water filter, and at this point she was putting a fresh cartridge in the water filter at least a couple times a month.

Back when Flint was buying Detroit water, she only replaced it a couple times a year, so she called the city out to come take a look.

The city sent Mike Glasgow, Flint's Utilities Administrator. He's a Flint native and he's spent the bulk of his career working for the city.

"I remember this fairly well," says Glasgow. "A complaint had come through from her about discolored water – orange water."

Glasgow says complaints like Walters' were common around this time, but there's a reason this one stood out.

"After the first day there, I said, 'well, there's a few ways we go about cleaning this up. We can flush hydrants. I'll have people from our service center get out and check the area – see if anything's out of the ordinary. I'll be back a week later as a follow-up and usually we can clear something up in that amount of time,'" he said.

A week later, Glasgow went back to Walters' house. Her tap water looked exactly the same. It still had this orange tinge.

"And I just happened to have some lead and copper sample bottles with me, and since her water was still discolored, I started to worry more about corrosion," he says.

People like Glasgow, those who help operate water plants in older cities like Flint, they worry about corrosion.

It can be a sign that a city isn't treating its water properly.

Water that's treated correctly – that has the right chemical balance – it will actually coat the inside of old pipes. That coating helps keep metals, like lead, copper, and iron from showing up in people's tap water.

An urgent voicemail. A mother's panic.

Glasgow ran a test on Walters' water.

"About a week later I got the results and it was pretty high for lead, so I called her right away to let her know," say Glasgow.

The results were alarming enough that Glasgow called Walters right away, but he couldn't reach her that afternoon.

He left her a voicemail.

Walters vividly remembers the message.

She recounted it for me:

"Hi Lee Anne, it's Mike from the Water Department. I just wanted to call and let you know we got your test back. Please, whatever you do, don't let your kids drink the water. Don't make their juice with it. And please just give me a phone call back as soon as possible."

Walters tossed and turned all night, worrying.

How bad could the water be?

By the time Walters did get ahold of Mike Glasgow the next day, she was kind of panicked.

“He's like, ‘your number's at 104,’ and I'm like, ‘OK, well what is it supposed to be?’ He's like, ‘not over 15.’ And I’m like, ‘wait, what?’”

I just want to make sure you really get these numbers they’re talking about. I mean, there’s no level of lead exposure that is considered safe, but any amount of lead in water above 15 parts per billion is a problem.

At that level, cities are supposed to at least warn you about how bad your lead levels are.

The lead level in the water at the Walters’ place was seven times higher than that.

But at that moment, hearing that number – 104 parts per billion – Walters remembers she didn’t know what to make of it.

“OK, what does this mean? He's like, ‘we don't know. We’ve never seen a number like this before in the city.’ He’s like, ‘it’s the highest anyone’s ever seen.’”

Glasgow was adamant no one drink the water. Don’t use it to cook with. Don’t brush your teeth with it. If you’re going to take a shower, wash dishes, or even do a load of laundry, let the water run for 10 or 15 minutes first.

Flushing beforehand helps lower lead levels, he said.

A week later, Glasgow came back to do a follow-up test.

“And that one came back at 397, and it was like, ‘whoa. OK. Well, here's an even higher number. What the hell?’ And then it was, ‘OK, well now you've got to start flushing your water for 25 minutes before you use it for anything,” says Glasgow.

After that test, Glasgow decided to keep a close eye on the water at the Walters’ place. He came out almost every week.

“And they were seeing it consistently brown every week,” says Walters. “They didn’t have any answers for me.”

You can see iron in water.

It’s what gave Walters’ tap water that awful orange tinge, but you can’t see the lead in water. It’s odorless, tasteless, and much more dangerous to your health.

With numbers like that, Lee Anne Walters did what probably any mother would do. She took her kids to the doctor to get tested for lead.

When the tests came back, the diagnosis wasn’t good for Gavin. The doctors said he had lead poisoning.

“After the fact, knowing I was giving this to my kids makes me sick, because we should be able to trust the fact that we’re paying for this service,” she says. “And we should be able to trust the fact that it’s not going to harm our kids.”

Tomorrow, in part two of our series, we'll hear how Lee Anne Walters contacts the EPA, and red flags start to go up. Mike Glasgow's fear about corrosion turns out to be well founded.

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http://abcnews.go.com/US/wireStory/flint-mayor-declares-state-emergency-water-problems-35772738

Flint Mayor Declares State of Emergency Over Water Problems

By THE ASSOCIATED PRESS

FLINT, Mich. — Dec 15, 2015, 7:54 AM ET

Flint's mayor has declared a state of emergency due to problems with the city's water system caused by using water from the Flint River, saying the city needs more federal help.

Karen Weaver announced the declaration Monday night and said the move intends to help raise awareness of continuing problems. She said damage to children caused by lead exposure is irreversible and that the city will need to spend more on special education and mental health services as a result.

"I am requesting that all things be done necessary to address this state of emergency declaration, effective immediately," Weaver told City Council.

Exposure to lead can cause behavior problems and learning disabilities in young children.

Genesee County earlier declared a public health emergency. Officials have told Flint residents not to drink unfiltered tap water.

Flint switched from Detroit's water system last year to Flint River water in a cost-cutting move while under state emergency financial management. The Flint River was supposed to be an interim source until the city could join a new system getting water from Lake Huron.

But residents complained about the taste, smell and appearance of the water. Officials maintained the water met safety standards, but children were found to have elevated levels of lead in their blood and it was determined that corrosive river water was drawing lead from aging pipes.

Flint returned to Detroit's system in October.

Weaver was elected in November, unseating the incumbent mayor who led the city during the public health emergency and blamed state and federal agencies for the city's water problems. Weaver had promised while campaigning to issue an emergency declaration.

City Council members were divided about what the declaration will mean, The Flint Journal reported. Councilman Scott Kincaid said it's needed to seek more aid, noting that "We have to prove ... that we need resources."

Councilman Josh Freeman said he doesn't want residents to expect immediate help with the city's water infrastructure, including lead service lines, because of the declaration. He said the declaration doesn't fix the problem.

"We need to find a way to actually fix the problem," Freeman said.

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http://www.mlive.com/news/flint/index.ssf/2015/12/fema_sends_thousands_of_cases.html

FEMA sends 28,000 liters of bottled water to Flint amid lead troubles

By Ron Fonger | rfonger1@mlive.com on December 14, 2015 at 4:24 PM, updated December 14, 2015 at 8:50 PM

FLINT, MI — The federal government is helping to replenish the bottled water supply in Flint.

Two trucks delivered about 28,000 liters of water from the Federal Emergency Management Agency to the Food Bank of Eastern Michigan on Monday, Dec. 14. The water will be donated to "partner agencies" in the city of Flint that will distribute the water to residents.

"I don't think any (previous water donations) have been quite this large," said Kelly Belcher, marketing manager for the Food Bank.

Cassie Ringsdorf, a FEMA spokeswoman, said the agency maintains commodity stockpiles at warehouses across the country and makes them available.

"These commodities are available for use, within hours, should an incident occur that requires support from FEMA," Ringsdorf said in an email to The Flint Journal.

"As a part of our normal commodities management process, FEMA periodically offers commodities nearing the end of their shelf-life to eligible non-profits for donation. These donations are not done, 'on-request,' but are a part of our normal strategy to maintain our stockpiles for use in emergencies," the statement said.

A news release from the Food Bank credited Michigan State Police Lt. Billie Jo Roach with having identified the availability of the water from FEMA.

Flint remains in a public health emergency, and officials have said residents should not drink unfiltered tap water because of rising lead levels while the city used the Flint River as its water source from April 2014 until October 2015.

Earlier this month, Virginia Tech professor Marc Edwards said even though the city no longer uses the river as a water source, water remains unsafe to drink unfiltered in some areas of the city.

Roach is the MSP Emergency Management and Homeland Security Division District 3 coordinator.

The Journal could not immediately reach a representative of the MSP Emergency Management and Homeland Security Division for further comment.

FEMA said the Food Bank claimed two truckloads of water and agreed to pay all transportation costs associated with the donation.

Belcher said the United Way of Genesee County paid that expense for the Food Bank.

The Food Bank's partner agencies that will receive the FEMA water include soup kitchens, homeless shelters and food pantries, the organization said in its news release.

Jeff Kelley
Director, Office of External Communications

U.S. EPA Region 5
ph: 312-353-1159

To: Grevatt, Peter[Grevatt.Peter@epa.gov]
From: Hedman, Susan
Sent: Tue 12/15/2015 2:08:38 PM
Subject: Fwd: Flint water clips for Dec. 15

FYI

Sent from my iPhone

Begin forwarded message:

From: "Kelley, Jeff" <kelley.jeff@epa.gov>
Date: December 15, 2015 at 7:51:53 AM CST
To: "Hedman, Susan" <hedman.susan@epa.gov>, "Kaplan, Robert" <kaplan.robert@epa.gov>, "Hyde, Tinka" <hyde.tinka@epa.gov>
Cc: "Rowan, Anne" <rowan.anne@epa.gov>, "Cassell, Peter" <cassell.peter@epa.gov>, "Beckmann, Ronna Erin" <beckmann.ronna@epa.gov>, "Fortin, Denise" <Fortin.Denise@epa.gov>, "Deamer, Eileen" <deamer.eileen@epa.gov>, "Harrison, Melissa" <Harrison.Melissa@epa.gov>, "Abrams, Dan" <Abrams.Dan@epa.gov>, "Grantham, Nancy" <Grantham.Nancy@epa.gov>
Subject: Flint water clips for Dec. 15

•□□□□□□□□ In Flint, Mich., there's so much lead in children's blood that a state of emergency is declared (Washington Post)

•□□□□□□□□ Mayor Karen Weaver declares water crisis state of emergency in Flint (Flint Journal)

•□□□□□□□□ This mom helped uncover what was really going on with Flint's water (part one of the Michigan Radio documentary Not Safe to Drink)

•□□□□□□□□ Flint Mayor Declares State of Emergency Over Water Problems (Associated Press)

•□□□□□□□□ FEMA sends 28,000 liters of bottled water to Flint amid lead troubles (Flint Journal)

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https://www.washingtonpost.com/news/morning-mix/wp/2015/12/15/toxic-water-soaring-lead-levels-in-childrens-blood-create-state-of-emergency-in-flint-mich/

In Flint, Mich., there's so much lead in children's blood that a state of emergency is declared

By Yanan Wang December 15 at 4:31 AM

Flint, Mich., resident Gladyes Williamson cries out through her tears, overwhelmed with frustration over the water drawn from the Flint River. (Jake May /Flint Journal-MLive.com via AP)

For months, worried parents in Flint, Mich., arrived at their pediatricians' offices in droves. Holding a toddler by the hand or an infant in their arms, they all have the same question: Are their children being poisoned?

To find out, all it takes is a prick of the finger, a small letting of blood. If tests come back positive, the potentially severe consequences are far more difficult to discern.

That's how lead works. It leaves its mark quietly, with a virtually invisible trail. But years later, when a child shows signs of a learning disability or behavioral issues, lead's prior presence in the bloodstream suddenly becomes inescapable.

According to the World Health Organization, "lead affects children's brain development resulting in reduced intelligence quotient (IQ), behavioral changes such as shortening of attention span and increased antisocial behavior, and reduced educational attainment. Lead exposure also causes anemia, hypertension, renal impairment, immunotoxicity and toxicity to the reproductive organs. The neurological and behavioral effects of lead are believed to be irreversible."

The Hurley Medical Center, in Flint, released a study in September that confirmed what many Flint parents had feared for over a year: The proportion of infants and children with above-average levels of lead in their blood has nearly doubled since the city switched from the Detroit water system to using the Flint River as its water source, in 2014.

The crisis reached a nadir Monday night, when Flint Mayor Karen Weaver declared a state of emergency.

“The City of Flint has experienced a Manmade disaster,” Weaver said in a declaratory statement.

The mayor — elected after her predecessor, Dayne Walling, experienced fallout from his administration’s handling of the water problems — said in the statement that she was seeking support from the federal government to deal with the “irreversible” effects of lead exposure on the city’s children. Weaver thinks that these health consequences will lead to a greater need for special education and mental health services, as well as developments in the juvenile justice system.

“Do we meet the criteria [for a disaster area]? I don’t know,” she told Michigan Live. But Weaver doesn’t think the city can receive the help it needs without alerting federal officials to the urgency of the matter.

To those living in Flint, the announcement may feel as if it has been a long time coming.

Almost immediately after the city started drawing from the Flint River in April 2014, residents began complaining about the water, which they said was cloudy in appearance and emitted a foul odor.

Since then, complications from the water coming from the Flint River have only piled up. Although city and state officials initially denied that the water was unsafe, the state issued a notice informing Flint residents that their water contained unlawful levels of trihalomethanes, a chlorine byproduct linked to cancer and other diseases.

Protesters marched to City Hall in the fierce Michigan cold, calling for officials to reconnect Flint's water to the Detroit system. The use of the Flint River was supposed to be temporary, set to end in 2016 after a pipeline to Lake Huron's Karegnondi Water Authority is finished.

A petition lobbying for the ending the city's Flint River water supply garnered 26,000 signatures.

Through continued demonstrations by Flint residents and mounting scientific evidence of the water's toxins, city and state officials offered various solutions — from asking residents to boil their water to providing them with water filters — in an attempt to work around the need to reconnect to the Detroit system.

That call was finally made by Gov. Rick Snyder (R) on Oct. 8. He announced that he had a plan for coming up with the $12 million to switch Flint back to the Detroit system. On Oct. 16, water started flowing again from Detroit to Flint.

This, too, was accompanied by the sense that it had come too late, particularly for the parents of children who may have been permanently affected.

These parents and other Flint residents filed a class-action federal lawsuit against Snyder, the state, the city and 13 other public officials in November for the damages they have suffered as a result of the lead-tainted water. The suit, which claims to represent "tens of thousands of residents," alleges that the city and state officials "deliberately deprived" them of their 14th Amendment rights by replacing formerly safe drinking water with a cheaper alternative that was known to be highly toxic.

"For more than 18 months, state and local government officials ignored irrefutable evidence that the water pumped from the Flint River exposed [residents] to extreme toxicity," the complaint reads. "The deliberately false denials about the safety of the Flint River water was as deadly as it was arrogant."

Calling officials' conduct "so egregious and so outrageous that it shocks the conscience," the complaint cites the specific experiences of a few plaintiffs and their families, all of whom allege they have been challenged by similar health ailments since high levels of lead and copper entered their bloodstreams.

These conditions include skin lesions, hair loss, chemical-induced hypertension, vision loss and depression. Of the four families described in the complaint, two had ceased to drink Flint water after a certain point — and used it only for washing and cooking — but still said they were exposed to many of the same ill effects.

As the Detroit Free Press reported in October, avoiding Flint water became a way of life for the city's residents.

Those who could afford it opted for bottled water, buying it by the gallons. Those who couldn't spare the money drank it straight from the tap all the same, knowing that they would be paying for it later. When it came to bathing, some slowly filled bathtubs with pots of boiled water for their children.

LeeAnn Walters, a Flint resident and mother of 4-year-old twins, took every precaution after blood tests revealed that the level of lead in one of her sons had soared after the switch to Flint River.

"I was hysterical," Walters told the Free Press. "I cried when they gave me my first lead report."

She had feared lead was the problem when her whole family developed rashes and her son stopped gaining weight.

Now, Walters said, when her children experience problems as they grow up, she will always wonder whether things would have been different — if their lives would have been better — if it weren't for the water.

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http://www.mlive.com/news/flint/index.ssf/2015/12/mayor_karen_weaver_declares_st.html

Mayor Karen Weaver declares water crisis state of emergency in Flint

By Ron Fonger | rfonger1@mlive.com The Flint Journal on December 14, 2015 at 9:37 PM, updated December 15, 2015 at 7:39 AM

FLINT, MI -- Mayor Karen Weaver has declared a state of emergency in Flint, saying the city needs federal help to deal with its lead in water crisis.

"I am requesting that all things be done necessary to address this state of emergency declaration, effective immediately," Weaver told the City Council today, Dec. 14.

The new mayor asked that the Genesee County Board of Commissioners call a special meeting to take action to support her declaration, that it be forwarded to Gov. Rick Snyder, and potentially President Obama.

The end result of the resolution is not known, but Weaver said the city can't expect further help from the federal government without it.

"Do we meet the criteria (for a disaster area)? I don't know," Weaver said. "I'm going to ask and let them tell us no."

Flint is in a public health emergency, declared by Genesee County, because of rising levels of lead in water and in the blood of children after the city changed its water source to the Flint River from April 2014 until October.

The county declaration came after a Hurley Medical Center doctor's study showed the percentage of Flint infants and children with above-average lead levels nearly doubled citywide, and nearly tripled among children in "high risk" areas of lead exposure.

City officials have also said the use of corrosive Flint River water also damaged Flint's water infrastructure after state regulators never required the river water be treated to make it less corrosive.

Council members were divided in their opinion about what the declaration will mean.

"What this does is help position us as a community to show ... that we need resources in our community," said Councilman Scott Kincaid. "(It allows for us) to apply for state and federal funds. We have to prove ... that we need resources."

Councilman Josh Freeman said he doesn't want residents to expect immediate help with the city's water infrastructure, including lead service lines, because of the declaration.

"We need to find a way to actually fix the problem," Freeman said. "This declaration does not (fix the problem)."

Weaver's resolution says the damage done to Flint children because of lead exposure is irreversible, creating the need for increased spending on special education and mental health services and increased stress on the juvenile justice system.

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http://michiganradio.org/post/mom-helped-uncover-what-was-really-going-flint-s-water

This mom helped uncover what was really going on with Flint's water (part one of the Michigan Radio documentary Not Safe to Drink)

Lindsey Smith, Michigan Radio • 17 hours ago

Up until October, the Walters family lived in a yellow two-story home on the south side of Flint. A couple of red maple trees shade the tiny front yard.

Walters heads to the back of the house, in a small room off of the kitchen, where the family keeps its stockpile of bottled water.

"This is our water stash. Once a week we go and we fill 40 gallons of water, so we have water to drink with, to cook with, and to bathe Gavin and Garrett in," says Lee Anne Walters.

Walters won't let her kids drink any water from her faucet. She won't even let her four-year-old boys, Gavin and Garrett, bathe in anything but bottled water, so preparing for bath time is quite the chore.

Walters takes jugs of water she buys at the store, dumps them in large pots, and heats the water on her stove. Once it boils, she dumps the water in the bathtub. Then she adds three or four gallons of cool water to sort of get the bath at the right temperature.

Over several months, Walters says she's gotten pretty efficient at this routine. She's got bath prep down to about 45 minutes.

“And then in between, because we only do the bathing thing once a week now – because, one, it’s expensive, and two, the expense of all this on top of the water bills? We do baby wipe baths in between,” says Walters.

Walters scrubs the boys down with baby wipes almost every day. Luckily, her husband can shower at work. Her two oldest kids – they're teenagers – usually shower over at grandma’s house outside of town.

There’s a lot of people in Flint who knew something was wrong with the water, but this family’s story, particularly Walters' role as a worried mother, changed everything about how the water crisis in Flint was handled.

Something’s in the swimming pool

People in Flint started complaining about their tap water early in the summer of 2014 – not long after the city stopped pumping its drinking water from Detroit.

Instead, Flint started pumping it from the Flint River. Back then, Lee Anne Walters didn’t think it was that big of a deal.

They had just bought their house. Someone had stripped all the plumbing from it, so they had to redo the house with new plumbing, and they installed a whole house filter.

Every drop of water that comes into her home goes through this filter.

But a few weeks after the city’s switch to water from the Flint River, Walters noticed something was weird.

She had just set up the swimming pool in the side yard for the summer.

“Gavin started breaking out every time he’d get in the pool,” says Walters.

The rash was bad enough that Walters took him to the doctor.

“And the doctors kept telling us it was contact dermatitis.” She says they told her that “he’s coming into contact with something that he’s allergic to.”

Later, Walters says her doctors suggested it was eczema. They gave her a cortisone cream to rub on Gavin’s rash, but by July 2014, it wasn’t just Gavin. His twin brother Garrett got the rash too.

“And we took them in and they told us it was scabies, so we treated them with a pesticide,” says Walters.

Tiny mites cause scabies, and the common treatment is a chemical that’s also in some pesticides. It’s even in some mosquito nets and flea collars.

Walters rubbed the prescription cream on her twin boys from the neck down.

“I spent a ton of money because all the laundry that we had, all the bedding that we had, we took it to a laundromat,” she says.

Walters was relieved when the boys’ rash went away, but that feeling didn’t last long.

Walters remembers the day the rash came back, because she had a bunch of people over to celebrate her daughter's high school graduation.

"And all the people that were here swimming and drinking the water, all of them broke out," she says.

She scheduled another doctor's appointment for her four-year-olds. She got the same diagnosis, but Walters really had some doubts about the scabies diagnosis, especially after the party.

"The third time they tried to convince us that it was scabies, I said, 'nun-uh, no.' The cream wasn't working on Gavin - period. He had that rash for more than a month straight."

Walters wasn't standing for it anymore, so she took Gavin to a dermatologist down in Brighton. They scraped in between Gavin's little toes, and put it under the microscope.

"And she verified by doing the skin scrapes that there was no scabies. There was no live anything – no dead anything – no eggs, so no scabies," she says.

She still didn't know what caused the rash, but Walters noticed something. Gavin's rash flared up every time he swam in the pool, and every time he took a bath.

Something clicked.

It became clear to her right then that Gavin's rash was caused by something in the tap water.

The city of Flint learns about Walters' problem

Eight months after Flint started pumping its drinking water from the Flint River, Lee Anne Walters stopped letting her kids drink it – everyone from the four-year-old twins, Garrett and Gavin – to her teenagers, JD and Kaylie.

“We quit drinking the water in December, when my 14-year-old got sick and it started coming through our filter and out the kitchen sink brown,” she says.

That was December 2014.

Walters says the water had this orangeish-brown tinge that would not go away, even when she put a fresh cartridge in the water filter, and at this point she was putting a fresh cartridge in the water filter at least a couple times a month.

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“I remember this fairly well,” says Glasgow. “A complaint had come through from her about discolored water – orange water.”

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“After the first day there, I said, ‘well, there’s a few ways we go about cleaning this up. We can flush hydrants. I’ll have people from our service center get out and check the area – see if anything’s out of the ordinary. I’ll be back a week later as a follow-up and usually we can clear something up in that amount of time,’” he said.

A week later, Glasgow went back to Walters’ house. Her tap water looked exactly the same. It still had this orange tinge.

“And I just happened to have some lead and copper sample bottles with me, and since her water was still discolored, I started to worry more about corrosion,” he says.

People like Glasgow, those who help operate water plants in older cities like Flint, they worry about corrosion.

It can be a sign that a city isn’t treating its water properly.

Water that’s treated correctly – that has the right chemical balance – it will actually coat the inside of old pipes. That coating helps keep metals, like lead, copper, and iron from showing up in people’s tap water.

An urgent voicemail. A mother’s panic.

Glasgow ran a test on Walters’ water.

“About a week later I got the results and it was pretty high for lead, so I called her right away to let her know,” say Glasgow.

The results were alarming enough that Glasgow called Walters right away, but he couldn't reach her that afternoon.

He left her a voicemail.

Walters vividly remembers the message.

She recounted it for me:

"Hi Lee Anne, it's Mike from the Water Department. I just wanted to call and let you know we got your test back. Please, whatever you do, don't let your kids drink the water. Don't make their juice with it. And please just give me a phone call back as soon as possible."

Walters tossed and turned all night, worrying.

How bad could the water be?

By the time Walters did get ahold of Mike Glasgow the next day, she was kind of panicked.

"He's like, 'your number's at 104,' and I'm like, 'OK, well what is it supposed to be?' He's like, 'not over 15.' And I'm like, 'wait, what?'"

I just want to make sure you really get these numbers they're talking about. I mean, there's no level of lead exposure that is considered safe, but any amount of lead in water above 15 parts per billion is a problem.

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But at that moment, hearing that number – 104 parts per billion – Walters remembers she didn't know what to make of it.

"OK, what does this mean? He's like, 'we don't know. We've never seen a number like this before in the city.' He's like, 'it's the highest anyone's ever seen.'"

Glasgow was adamant no one drink the water. Don't use it to cook with. Don't brush your teeth with it. If you're going to take a shower, wash dishes, or even do a load of laundry, let the water run for 10 or 15 minutes first.

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"And they were seeing it consistently brown every week," says Walters. "They didn't have any answers for me."

You can see iron in water.

It's what gave Walters' tap water that awful orange tinge, but you can't see the lead in water. It's odorless, tasteless, and much more dangerous to your health.

With numbers like that, Lee Anne Walters did what probably any mother would do. She took her kids to the doctor to get tested for lead.

When the tests came back, the diagnosis wasn't good for Gavin. The doctors said he had lead poisoning.

"After the fact, knowing I was giving this to my kids makes me sick, because we should be able to trust the fact that we're paying for this service," she says. "And we should be able to trust the fact that it's not going to harm our kids."

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Genesee County earlier declared a public health emergency. Officials have told Flint residents not to drink unfiltered tap water.

Flint switched from Detroit's water system last year to Flint River water in a cost-cutting move while under state emergency financial management. The Flint River was supposed to be an interim source until the city could join a new system getting water from Lake Huron.

But residents complained about the taste, smell and appearance of the water. Officials maintained the water met safety standards, but children were found to have elevated levels of lead in their blood and it was determined that corrosive river water was drawing lead from aging pipes.

Flint returned to Detroit's system in October.

Weaver was elected in November, unseating the incumbent mayor who led the city during the public health emergency and blamed state and federal agencies for the city's water problems. Weaver had promised while campaigning to issue an emergency declaration.

City Council members were divided about what the declaration will mean, The Flint Journal reported. Councilman Scott Kincaid said it's needed to seek more aid, noting that "We have to prove ... that we need resources."

Councilman Josh Freeman said he doesn't want residents to expect immediate help with the city's water infrastructure, including lead service lines, because of the declaration. He said the declaration doesn't fix the problem.

"We need to find a way to actually fix the problem," Freeman said.

---

http://www.mlive.com/news/flint/index.ssf/2015/12/fema_sends_thousands_of_cases.html

FEMA sends 28,000 liters of bottled water to Flint amid lead troubles

By Ron Fonger | rfonger1@mlive.com on December 14, 2015 at 4:24 PM, updated December 14, 2015 at 8:50 PM

FLINT, MI — The federal government is helping to replenish the bottled water supply in Flint.

Two trucks delivered about 28,000 liters of water from the Federal Emergency Management Agency to the Food Bank of Eastern Michigan on Monday, Dec. 14. The water will be donated to "partner agencies" in the city of Flint that will distribute the water to residents.

"I don't think any (previous water donations) have been quite this large," said Kelly Belcher, marketing manager for the Food Bank.

Cassie Ringsdorf, a FEMA spokeswoman, said the agency maintains commodity stockpiles at warehouses across the country and makes them available.

"These commodities are available for use, within hours, should an incident occur that requires support from FEMA," Ringsdorf said in an email to The Flint Journal.

"As a part of our normal commodities management process, FEMA periodically offers commodities nearing the end of their shelf-life to eligible non-profits for donation. These donations are not done, 'on-request,' but are a part of our normal strategy to maintain our stockpiles for use in emergencies," the statement said.

A news release from the Food Bank credited Michigan State Police Lt. Billie Jo Roach with having identified the availability of the water from FEMA.

Flint remains in a public health emergency, and officials have said residents should not drink unfiltered tap water because of rising lead levels while the city used the Flint River as its water source from April 2014 until October 2015.

Earlier this month, Virginia Tech professor Marc Edwards said even though the city no longer uses the river as a water source, water remains unsafe to drink unfiltered in some areas of the city.

Roach is the MSP Emergency Management and Homeland Security Division District 3 coordinator.

The Journal could not immediately reach a representative of the MSP Emergency Management and Homeland Security Division for further comment.

FEMA said the Food Bank claimed two truckloads of water and agreed to pay all transportation costs associated with the donation.

Belcher said the United Way of Genesee County paid that expense for the Food Bank.

The Food Bank's partner agencies that will receive the FEMA water include soup kitchens, homeless shelters and food pantries, the organization said in its news release.

---
Jeff Kelley
Director, Office of External Communications
U.S. EPA Region 5
ph: 312-353-1159

To: Henry, Timothy[henry.timothy@epa.gov]; Poy, Thomas[poy.thomas@epa.gov]
From: Hyde, Tinka
Sent: Tue 12/15/2015 2:55:13 PM
Subject: FW: EPA says it won't take quick action on petition targeting Flint water safety

From: Hedman, Susan
Sent: Monday, December 14, 2015 7:11 PM
To: Kaplan, Robert; Nelson, Leverett; Hyde, Tinka
Subject: EPA says it won't take quick action on petition targeting Flint water safety

EPA says it won't take quick action on petition targeting Flint water safety

By Ron Fonger | rfonger1@mlive.com The Flint Journal
on December 11, 2015 at 6:05 PM, updated December 11, 2015 at 6:07 PM

FLINT, MI -- The U.S. Environmental Protection Agency won't act immediately on a petition that seeks to involve it more deeply in Flint's water crisis.

EPA Regional Administrator Susan Hedman told the Natural Resources Defense Council in a Dec. 10 letter that regulators will wait to act on the request "until such time as the agency determines that corrosion control treatment is fully optimized for the Flint system."

The NRDC petition, filed on Oct.1 on behalf of several organizations, urges EPA to order Flint to reconnect to the Detroit water system and to require other actions necessary to protect the health of city residents.

Since the filing of the filing of the petition, there have been several developments involving Flint water, including reconnection to Detroit water

and more widespread testing for lead.

"In light of the actions that the state and the city have taken during the past several weeks, EPA could arguably conclude that your petition fails to meet the jurisdictional prerequisites set forth in ... the Safe Drinking Water Act," Hedman's letter says.

Anjali Waikar, staff attorney for the NRDC, said a public health emergency remains in Flint and EPA "hasn't done enough to ensure safe drinking water."

Despite a reconnection to the Detroit water system, a public health emergency remains in place in Flint as the city attempts to rebuild a protective mineral coating in water transmission lines during the next few months.

From April 2014 until October, the city used the Flint River as its source of water but was not required to treat it to make less corrosive, causing lead to increasingly leach into the water supply.

Earlier this week, the city announced it has begun boosting the amount of phosphate to the Detroit water it is receiving in an effort to better control corrosion and rebuild mineral scale that keeps lead from leaching as quickly.

Susan Hedman

Region 5 Administrator/Great Lakes National Program Manager

U.S. Environmental Protection Agency

77 West Jackson Blvd - 19th Floor

Chicago, Illinois 60604-3590

To: Deltoral, Miguel[deltoral.miguel@epa.gov]; Kaplan, Robert[kaplan.robert@epa.gov]; Henry, Timothy[henry.timothy@epa.gov]; Poy, Thomas[poy.thomas@epa.gov]; Schock, Michael[Schock.Michael@epa.gov]; Lytle, Darren[Lytle.Darren@epa.gov]
From: Kempic, Jeffrey
Sent: Tue 12/15/2015 3:02:08 PM
Subject: RE: FYI / Flint Journal: FEMA sends 28,000 liters of bottled water to Flint amid lead troubles

This Washington Post article may explain why FEMA is involved. The Flint Mayor declared a state of emergency last night:

https://www.washingtonpost.com/news/morning-mix/wp/2015/12/15/toxic-water-soaring-lead-levels-in-childrens-blood-create-state-of-emergency-in-flint-mich/?hpid=hp_rhp-top-table-main_michigan-820am%3Ahomepage%2Fstory

Jeff

From: Deltoral, Miguel
Sent: Tuesday, December 15, 2015 9:46 AM
To: Kaplan, Robert <kaplan.robert@epa.gov>; Henry, Timothy <henry.timothy@epa.gov>; Poy, Thomas <poy.thomas@epa.gov>; Schock, Michael <Schock.Michael@epa.gov>; Lytle, Darren <Lytle.Darren@epa.gov>; Kempic, Jeffrey <Kempic.Jeffrey@epa.gov>
Subject: FW: FYI / Flint Journal: FEMA sends 28,000 liters of bottled water to Flint amid lead troubles

"A news release from the Food Bank credited Michigan State Police Lt. Billie Jo Roach with having identified the availability of the water from FEMA."

Miguel A. Del Toral

Regulations Manager

Ground Water and Drinking Water Branch

77 West Jackson Blvd (WG-15J)

Chicago, IL 60604

Phone: (312) 886-5253

From: Suero, Maryann
Sent: Tuesday, December 15, 2015 8:25 AM
To: Klevs, Mardi <klevs.mardi@epa.gov>; Master, Edward <master.edward@epa.gov>; Poy, Thomas <poy.thomas@epa.gov>; Deltoral, Miguel <deltoral.miguel@epa.gov>
Subject: FYI / Flint Journal: FEMA sends 28,000 liters of bottled water to Flint amid lead troubles

FEMA sends 28,000 liters of bottled water to Flint amid lead troubles

The federal government is helping to replenish the bottled water supply in Flint.

Flint Journal, Michigan

http://www.mlive.com/news/flint/index.ssf/2015/12/fema_sends_thousands_of_cases.html#incart_targ

To: Beckmann, Ronna Erin[beckmann.ronna@epa.gov]
Cc: Fortin, Denise[Fortin.Denise@epa.gov]; Deamer, Eileen[deamer.eileen@epa.gov]
From: Hedman, Susan
Sent: Tue 12/15/2015 3:45:01 PM
Subject: Re: Flint Congressional Meetings - Peter Grevatt

Thanks -- Peter and I have exchanged e-mails about this and I have asked Tiffany to coordinate logistics with Cathy Davis. I will also be talking with Peter this afternoon.

Sent from my iPhone

On Dec 15, 2015, at 8:53 AM, Beckmann, Ronna Erin <beckmann.ronna@epa.gov> wrote:

> Peter recommends that Eric Burneson and Tiffany Cooper attend the meeting with Cong. Lawrence. Eric is the Director of the Standards and Risk Management Division and Tiffany is in the IO of OGWDW (she's been at the last couple of meetings with Jordan).
>
> Is this okay?
>
> Thanks,
>
> Ronna Beckmann
> Office of the Regional Administrator
> U.S. Environmental Protection Agency
> Region 5
>
> On Dec 14, 2015, at 9:50 AM, Hedman, Susan <hedman.susan@epa.gov> wrote:
>
>> Is there a possibility of moving the Lawrence meeting to later in the afternoon at a time when Peter can join me?
>>
>> Sent from my iPhone
>>
>> On Dec 14, 2015, at 9:08 AM, Beckmann, Ronna Erin <beckmann.ronna@epa.gov> wrote:
>>
>>> Good morning,
>>>
>>> Peter Grevatt's scheduler confirmed that he will join you for the Sen. Peters and Rep. Kildee meetings.

He won't be attending the Rep. Lawrence meeting, so please let me know if you'd like me find someone to accompany you.

Thanks,

Ronna Beckmann

Office of the Regional Administrator

U.S. Environmental Protection Agency, Region 5

312-886-0689

beckmann.ronna@epa.gov

From: Hedman, Susan
Sent: Friday, December 11, 2015 12:05 PM
To: Beckmann, Ronna Erin <beckmann.ronna@epa.gov>
Cc: Kaplan, Robert <kaplan.robert@epa.gov>; Hyde, Tinka <hyde.tinka@epa.gov>; Henry, Timothy <henry.timothy@epa.gov>; Fortin, Denise <Fortin.Denise@epa.gov>; Deamer, Eileen <deamer.eileen@epa.gov>; Kelley, Jeff <kelley.jeff@epa.gov>; Rowan, Anne <rowan.anne@epa.gov>
Subject: RE: Flint Congressional Meetings Scheduled

Thanks very much.

One additional item I'd like to add to the briefing on Tuesday: a summary of the results from lead testing that has been done by the State and City – both tap water lead levels and blood lead levels. Also, anything we have heard about the testing being done by Hurley Medical Center.

From: Beckmann, Ronna Erin
Sent: Friday, December 11, 2015 10:43 AM
To: Hedman, Susan <hedman.susan@epa.gov>

Cc: Kaplan, Robert <kaplan.robert@epa.gov>; Hyde, Tinka <hyde.tinka@epa.gov>; Henry, Timothy <henry.timothy@epa.gov>; Fortin, Denise <Fortin.Denise@epa.gov>; Deamer, Eileen <deamer.eileen@epa.gov>; Kelley, Jeff <kelley.jeff@epa.gov>; Rowan, Anne <rowan.anne@epa.gov>
Subject: Flint Congressional Meetings Scheduled

You're all set. I've shared this info with Peter's scheduler – and will let you know when I've confirmed that he'll be joining you for all the meetings.

Wednesday, December 16

2:30pm – Rep. Lawrence in 1237 Longworth

3:30pm – Sen. Peters in 724 Hart

Thursday, December 17

10:00am – Rep. Kildee in 227 Cannon

Scheduling contacts in each office:

Lawrence – Zach Weber, 202-225-5802, Zach.Weber@mail.house.gov

Peters – Angeli Chawla, 202-224-6221, Angeli_Chawla@peters.senate.gov

Kildee – Nathaniel A. Brunner, 202-225-3611, Nathan.Brunner@mail.house.gov

Ronna Beckmann

Office of the Regional Administrator

U.S. Environmental Protection Agency, Region 5

312-886-0689

beckmann.ronna@epa.gov

To: Deltoral, Miguel[deltoral.miguel@epa.gov]; Poy, Thomas[poy.thomas@epa.gov]
Cc: Porter, Andrea[porter.andrea@epa.gov]
From: Bosscher, Valerie
Sent: Tue 12/15/2015 3:59:04 PM
Subject: RE: Flint River Study

FYI, In case you don't already have this document:

Preliminary Engineering Report: Lake Huron Water Supply, Karegnondi Water Authority. September 2009. Prepared by AECOM, Jones & Henry Engineers LTD, Lockwood Andrews and Newnam Inc, O'Malia Consulting, ROWE Professional Services Company, and Wade Trim Inc. on behalf of City of Flint, Genessee County, Lapeer County, and Sanilac County. ftp://cityofswartzcreek.org/2010%20Full%20Council%20Packets/2010-May-24%20Mtg,%20Budget%20-%20Karegnondi%20Report/May%2024%20Mtg,%20Karegnondi%20Water%20Line%20Engineering%20Study.pdf

Note: Appendix 9 (p338-357 of the pdf) includes a detailed description of the Flint WTP and recommendations for modifications after the proposed change to Lake Huron water. The future recommendations include (see "9.3.6 - Corrosion Control and Sequestering Agent") phosphoric acid at 1-2 mg/L in the treated Lake Huron water.

Thanks,
Val

-----Original Message-----
From: Deltoral, Miguel
Sent: Tuesday, December 15, 2015 4:46 AM
To: Poy, Thomas <poy.thomas@epa.gov>
Cc: Bosscher, Valerie <bosscher.valerie@epa.gov>; Porter, Andrea <porter.andrea@epa.gov>
Subject: FW: Flint River Study

Here are the docs from George.

Miguel A. Del Toral
Regulations Manager
U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

From: Rizzo, George
Sent: Monday, December 14, 2015 01:43 PM
To: Schock, Michael
Cc: Lytle, Darren; Deltoral, Miguel; Speth, Thomas
Subject: RE: Flint River Study

Mike,

Thanks so much for all the documents you sent. I had seen the "City of Flint Water Supply Assessment, February 2013" previously. When I looked at it today, I found that the document I was looking for was listed on page 6 which is the "Analysis of the Flint River as a Permanent Water Supply for the City of Flint, 2011." After some Googling and subscribing to SCRIBD.com, I found the attached documents which are the report and its appendices. Neither document considers corrosion control treatment as a parameter to be addressed, although a cost estimate for phosphate addition is included in Appendix 8. I'm not sure if Flint followed any of the recommendations in this report before switching sources. What I have found interesting is that the "City of Flint Water Supply Assessment, February 2013", which was conducted by the Michigan State Treasurer's Office, recommended that Flint continue buying water from Detroit, but the State Emergency Manager(s) allowed Flint to contract with the Karegnondi Water Authority. Politics anyone?

George

George S. Rizzo
Environmental Scientist
Drinking Water Branch (3WP21)
U.S. EPA Region III
1650 Arch Street
Philadelphia, PA 19103-2029
Phone: 215-814-5781
FAX: 215-814-2302

-----Original Message-----
From: Schock, Michael
Sent: Monday, December 14, 2015 12:54 PM
To: Rizzo, George <Rizzo.George@epa.gov>
Cc: Lytle, Darren <Lytle.Darren@epa.gov>; Deltoral, Miguel <deltoral.miguel@epa.gov>; Speth, Thomas <Speth.Thomas@epa.gov>
Subject: RE: Flint River Study

Hi, George;

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--Mike

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From: Rizzo, George
Sent: Monday, December 14, 2015 8:46 AM
To: Deltoral, Miguel <deltoral.miguel@epa.gov>
Cc: Schock, Michael <Schock.Michael@epa.gov>; Lytle, Darren <Lytle.Darren@epa.gov>
Subject: RE: Flint River Study

Miguel,

Thanks for letting me know. I hope that a copy shows up.

George

George S. Rizzo
Environmental Scientist
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1650 Arch Street
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From: Deltoral, Miguel
Sent: Friday, December 11, 2015 8:37 AM
To: Rizzo, George <Rizzo.George@epa.gov>
Cc: Schock, Michael <Schock.Michael@epa.gov>; Lytle, Darren <Lytle.Darren@epa.gov>
Subject: RE: Flint River Study

Hi George,

I read that article but I do not have a copy of the report mentioned. Mike Schock and Darren Lytle have had more contact with the Flint folks, so I'm copying them to see if they have seen it.

Miguel A. Del Toral
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U.S. EPA R5 GWDWB
77 West Jackson Blvd, (WG-15J)
Chicago, IL 60604
Phone: (312) 886-5253

From: Rizzo, George
Sent: Thursday, December 10, 2015 01:08 PM
To: Deltoral, Miguel
Subject: Flint River Study

Miguel,

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I know that you're on the Flint work group so there's no rush to send me the report if you have access to it. Thanks.

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FAX: 215-814-2302

To: Crooks, Jennifer[crooks.jennifer@epa.gov]
From: Bosscher, Valerie
Sent: Tue 12/15/2015 4:03:48 PM
Subject: FW: Flint River Study
64382181-Analysis-of-the-Flint-River-as-a-Permanent-Water-Supply-for-the....pdf
64381765-Analysis-of-the-Flint-River-as-a-Permanent-Water-Supply-for-the....pdf

As we discussed, FYI. See link below and the attached 2011 report (which R3 found per below).

From: Bosscher, Valerie
Sent: Tuesday, December 15, 2015 9:59 AM
To: Deltoral, Miguel <deltoral.miguel@epa.gov>; Poy, Thomas <poy.thomas@epa.gov>
Cc: Porter, Andrea <porter.andrea@epa.gov>
Subject: RE: Flint River Study

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Preliminary Engineering Report: Lake Huron Water Supply, Karegnondi Water Authority. September 2009. Prepared by AECOM, Jones & Henry Engineers LTD, Lockwood Andrews and Newnam Inc, O'Malia Consulting, ROWE Professional Services Company, and Wade Trim Inc. on behalf of City of Flint, Genessee County, Lapeer County, and Sanilac County. ftp://cityofswartzcreek.org/2010%20Full%20Council%20Packets/2010-May-24%20Mtg,%20Budget%20-%20Karegnondi%20Report/May%2024%20Mtg,%20Karegnondi%20Water%20Line%20Engineering%20Study.pdf

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77 West Jackson Blvd, (WG-15J)

Chicago, IL 60604
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From: Rizzo, George
Sent: Monday, December 14, 2015 01:43 PM
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Cc: Lytle, Darren; Deltoral, Miguel; Speth, Thomas
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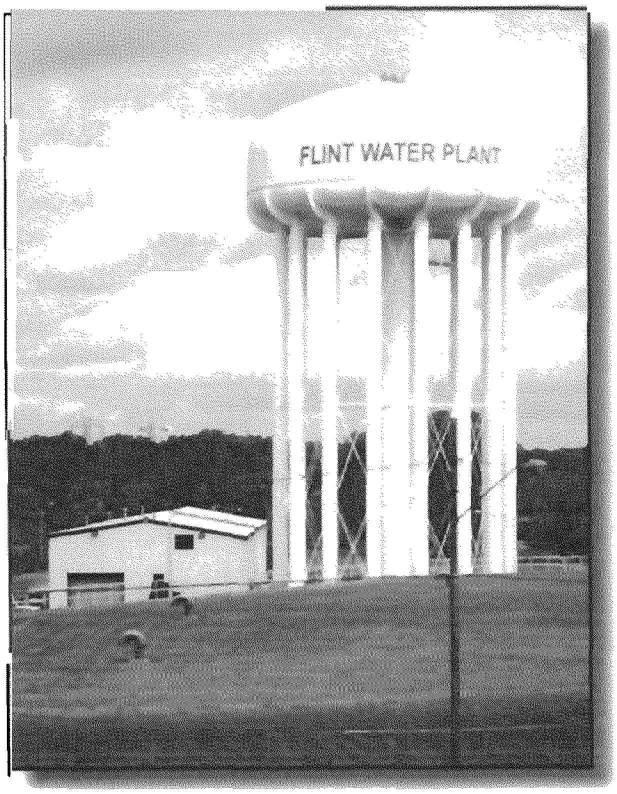
July 2011

Analysis of the Flint River as a Permanent Water Supply for the City of Flint

Prepared for:
Dayne Walling, Mayor, City of Flint



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I. Purpose

This study evaluates the feasibility of utilizing the City of Flint's Water Treatment Plant (WTP) and Flint River as the primary water supply for the City of Flint. The study evaluates whether the Flint River is an adequate source of water for the City of Flint and identifies upgrades needed to reliably supply water on a continuous basis.

II. History

The City of Flint's WTP was constructed in 1917 and supplied water to city customers for drinking and industrial uses. Records indicate that Flint supplied approximately 16 mgd in 1940 and that by the mid-1950s water use had increased to about 45 mgd. This significant increase coincided with increases in automobile production and population in the area. The Holloway Reservoir was constructed in 1954 to increase water supply capacity to meet the growing demand. Because of continued concerns regarding the adequacy of the Flint River for meeting the future water supply needs of the area, the city evaluated alternatives for a new water supply and ultimately contracted with the City of Detroit in 1967 for water supply. Detroit continues to supply water to Flint and its customers today. Detroit supplies finished water to the city via a single transmission pipeline. For reliability, the city's WTP has been maintained as a backup water supply in the event of a disruption to the single supply pipeline.

Because of recent concerns with the cost and reliability of the existing water supplies, the City of Flint, Genesee County, Lapeer County, the City of Lapeer, and Sanilac County are evaluating alternatives for their long-term water supply. The most recent study (Preliminary Engineering Report, Lake Huron Supply, Karegnondi Water Authority; September 2009) focused on two primary alternatives: Alternative 1 – continued supply by Detroit, and Alternative 2 – development of a new Lake Huron water supply. This study evaluates a third alternative. Alternative 3 provides for utilizing the existing City of Flint WTP to treat water from the Flint River. Alternative 3 assumes that water will be supplied only to customers within the city.

To evaluate the feasibility of Alternative 3, the river and WTP will be examined to determine their ability to supply water in sufficient quantity meeting current and anticipated regulations. There have been many new rules and regulations for treatment of surface water since 1967 when Flint's WTP was last used as a primary water supply.

III. Regulatory Requirements for Quantity of Source Water

Regulations require that the quantity of water at the source shall:

- Be adequate to meet the maximum projected water demand of the service area as shown by calculations based on a one in fifty year drought or the extreme drought of record, and should include consideration of multiple year droughts. Requirements for flows downstream of the intake shall comply with requirements of the appropriate reviewing authority.
- Provide reasonable surplus for anticipated growth.
- Be adequate to compensate for all losses such as silting, evaporation, seepage, etc.
- Be adequate to provide ample water for other legal users of the source.

IV. Demands

The alternative of utilizing the city's WTP and Flint River as a water supply will be evaluated on the basis of supplying water to Flint's direct customers only. Although Flint currently supplies water to GCDC-WWS, for this analysis it is assumed that GCDC-WWS receives its primary water supply by another source. Table 1 summarizes the city's current and projected demands for direct customers of the city. Projections have been provided by city representatives.

Table 1: City Customer Demand Summary

	2010	2035
Average Day Demand (ADD)	14.0 mgd	15.0 mgd
Maximum Day Demand (MDD)	17.5 mgd	18.0 mgd

Actual water requirements will be greater than the amount of water provided to customers. About ten percent additional water must be added for treatment processes and system operation. Water for fire-fighting is not included in customer demands and must be added to the quantity of water needed.

Surface water sources must be adequate to supply water through a drought period. Although the MDD is projected to be 18 mgd, the sustained maximum demand over a longer period will be less than the MDD. Analysis of records of water use indicates that the 30-day sustained maximum demand is about 80% of the MDD. Table 2 summarizes the source water requirements to supply the city's future needs.

Table 2: Source Water Requirements

Future Maximum Day Demand (Customers)		18.0 mgd
Future Maximum Day Demand (WTP Backwash / Process Water)		2.0 mgd
Subtotal (Future Maximum Day Demand)		20.0 mgd
Sustained (30 day) Future Maximum Day Demand	(80% of MDD)	16.0 mgd
Replenish Water from Fire Fighting		0.7 mgd
Future Maximum Day Demand (Source Water)		16.7 mgd

V. Drought Flows

USGS records indicate that the most severe drought in Michigan occurred between 1930 and 1937, and that the low stream flows experienced during this period have a recurrence interval of 50 to 70 years. River flow records which include the drought of the 1930s will be used to evaluate the adequacy of the river as a permanent water source.

VI. Reservoir Losses

Both the Holloway Dam and Mott Dam were constructed since the drought period of the 1930s. If used to simulate the "design drought conditions", the records of flow on the Flint River from the 1930's should be adjusted for potential impact from the addition of these two dams and resulting reservoirs.

A. Evaporation

If the two reservoirs had existed during the drought period, the flows in the river would have been a little less because of the volume of water which would have been lost to evaporation from these two bodies of water.

B. Sedimentation

The July 2001 Flint River Assessment completed by the MDNR indicates that sedimentation occurs in the Holloway Reservoir at an accelerated rate, but does not provide specific volumes. Sedimentation reduces the storage volume of reservoirs. No investigation to determine the amount of sedimentation has been completed in the Holloway Reservoir since its construction, but the storage volume of the reservoir has certainly decreased since its construction.

Mott Dam maintains a fixed water level, so storage for water supply is not available. Therefore, sedimentation in Mott Lake is not a concern with respect to water supply.

C. Seepage

The land adjacent to both the Holloway Reservoir and Mott Lake has a relatively high groundwater table. Any loss of water by seepage from the bottom of the reservoirs seems likely to flow back to the river downstream of the respective dams, resulting in little or no impact to the quantity of water available for water supply or flow augmentation. Loss from the reservoirs by seepage is not considered a significant factor.

VII. Other Water Uses

Since 1967 when Detroit began supplying water to Flint, the Holloway Reservoir has been utilized as a backup water source, source of flow augmentation for the river, and for recreational purposes. Although the city maintains control over the dam and water levels; the city has leased their surrounding lands to the Genesee County Parks and Recreation Commission (GCPRC) for park, recreational, and conservation purposes. In 1987, the city and GCPRC adopted the Holloway Reservoir Management Plan (HRMP) which defined how water levels in the reservoir were to be maintained to achieve the goals above. The HRMP establishes a summer water level of 755 and a winter level of 751. Discharge from the reservoir is to be maintained above 65 cfs except when the level is less than 751; outflow from the reservoir is not to exceed inflow to the reservoir. A copy of the HRMP is included in Appendix 1.

Flow augmentation for the city's WWTP discharge is another consideration. The city's NPDES permit for their WWTP indicates that a Flint River drought flow of 85 cfs was used to determine the permitted limits for WWTP effluent. It appears that the HRMP requirement to maintain a 65 cfs minimum at the Holloway Reservoir was established to provide adequate flow in the river at the city's WWTP outfall. An excerpt of the city's WWTP NPDES permit is included Appendix 2.

The existing water supply contract between the city and Genesee County Drain Commissioner Division of Water and Waste Services (GCDC-WWS) provides that both the city and GCDC-WWS supply the other up to 8 mgd of finished water in the event of an emergency or supply disruption. For this analysis, it is assumed that the Flint WTP and river must be able to supply 8 mgd to GCDC-

WWS in the event of an emergency in addition to the quantity consumed by the city's water customers. The need to provide backup to GCDC-WWS is assumed to be limited to a period of two weeks. Over a 14 day period, 125 million gallons of water should be reserved to meet the commitment for an emergency supply.

VIII. Analysis of Adequacy of Flint River

A detailed analysis of the adequacy of the Flint River as a water supply source is included in Appendix 3. This section provides an overview.

In 1977 when the HRMP was executed, water was not withdrawn from the Flint River for water supply. In 1977 without any withdrawal for water supply, the HRMP provided for a minimum discharge of 65 cfs from the Holloway Reservoir, to provide for a river flow of 85 cfs at the city's WWTP. If water is withdrawn from the river for water supply, the minimum flow from the reservoir must be increased by the rate of WTP withdrawal if the 85 cfs base flow is to be maintained at the city's WWTP. With Flint's future sustained demand estimated to be 16.7 mgd (26 cfs), a minimum flow of 91 cfs (65 cfs + 26 cfs) will be needed from the Holloway Reservoir to maintain the 85 cfs base flow at the WWTP.

The United States Geological Survey (USGS) in a 1963 report Water Resources of the Flint Area Michigan examined the Flint River as a water supply for Flint. Using river flow records between 1930 and 1952, the USGS report includes a Draft-Storage curve for the Holloway Reservoir. If a minimum discharge of 91 cfs is to be maintained during a drought period, 6.2 billion gallons water would need to be withdrawn from the reservoir to supplement natural river flow.

In addition to the 6.2 billion gallons of storage to maintain the existing rates of flow in the river plus water supply, additional storage is required to provide GCDC-WWS an emergency supply and to make up for reservoir losses. The following table summarizes the total storage needed.

Table 3: Storage Requirements

Storage to meet sustained demand and WWTP flow	6.20	billion gallons
Storage to provide backup supply to GCDC-WWS	0.11	billion gallons
Storage to make up loss by evaporation	0.90	billion gallons
Storage lost by siltation	0.64	billion gallons (assumed)
Storage to provide loss by seepage	0.00	billion gallons
Storage Needed to Supplement River Flow	7.85	billion gallons

To provide 7.85 billion gallons of storage, the Holloway Reservoir operating level must be raised by at least three feet to 758 feet. Although possible, there are many challenges associated with operating the Holloway Reservoir at the 758 feet level.

- The existing drum gates used to control reservoir level are designed for adjustment over a four feet range (751 feet to 755 feet). The design of the dam is such that the existing gates cannot simply be replaced with larger ones to increase the upper level to 758 feet. The dam spillway will likely need to be reworked to accommodate the larger drum gates. Drawings showing the details of the dam are included in Appendix 4.

- Although operation at the 758 water level provides five feet of freeboard to the top of the dam, the watershed contributing to the reservoir is quite large and has resulted in quick increases in the reservoir level during extreme rain events. The reduction in freeboard will result in a reduced safety factor for managing flood events.
- Seepage through the earthen dam embankment will increase as a result of the increased hydraulic pressure with the higher water level. Increased seepage through the dam's embankment will reduce the strength and integrity of the embankment and is likely to increase maintenance needs.
- The 758 feet water level is based on an assumption regarding the loss of the reservoir volume by siltation. The depth of siltation should be measured to better determine the quantity of siltation and its impact on storage and reservoir level.
- Recreational activities, the fishery, and adjacent properties will be impacted by use of the reservoir for water supply. Normal water levels will be increased by three feet and during dry periods, the water levels may vary by several feet. During an extreme drought period, water levels may be as much as 11 feet below normal levels.
- If the 85 cfs drought flow at the city's WWTP cannot be achieved, a new NPDES permit with stricter discharge limits may issued by the MDEQ. This could result in higher WWTP costs for the city.

Analysis shows that without modification, the Holloway Reservoir can support a sustained maximum day demand of 11.6 mgd for water supply through a drought period.

IX. Dams

If the Flint River is to be used as water supply, existing dams will continue to be critical for management of the flows in the river and water supply. Following is a summary of the dams on and adjacent to the river.

Table 4: Summary of Dams

Facility	Construction Completed	Catchment Area (sq. mi.)	Surface Area (Acres)	Storage (Acre-Feet)	Ownership	Hazard Classification	Condition
Holloway Dam	1954	523	1,973	17,678	Flint	High	Good
Mott Dam	1972	612	684	0	GCPRC		Good
Kearsley Dam	1929	115	175	2,000	Flint	Significant	Satisfactory
Utah Dam	1928	729		0	Flint	Low	Poor
Hamilton Dam		748	17		Flint	High	Poor
Thread Creek Dam	1973	63	80	320	Flint	Significant	Poor

A. Holloway Dam

The Holloway Dam was last inspected in 2008 and was reported to be in good condition. A copy of the 2008 Dam Safety Report is included in Appendix 5. Other than routine maintenance, the following upgrades / modifications are recommended to provide a water supply of up to 11.6 mgd:

- Replacement of drum gate bearings
- Installation of river flow gage on North Branch of Flint River
- Improved instrumentation to measure and monitor gate positions and water surface level

If the river is to be used as a water supply of greater capacity than 11.6 mgd, additional modifications are required at the Holloway Dam to allow for operation at an increased water level. These improvements will include replacement of gates with larger ones and reworking of the dam spillway to accommodate the larger gates. The existing embankment should be armored to strengthen the dam's embankment and protect against erosion from wave action. A budget of $2.57 million is established for the upgrades to the Holloway Dam to provide adequate capacity for the projected future demands.

B. Mott Dam

The Mott Dam is under the jurisdiction of the GCPRC. The reservoir level is maintained by a fixed weir so the reservoir volume is not available for storage. The dam has been reported to be in good condition.

C. Utah Dam

Utah Dam is inoperable and in poor condition. A copy of the 2008 Dam Safety Report is included in Appendix 6. Recent studies and evaluations conclude that the dam is of little benefit and should be removed. The 2010 Hamilton Dam Modifications and Riverfront Restoration PER provides a budget of $1.9 M for removal of the Utah Dam, including replacement with a pedestrian bridge, construction of a boat launch, and local storm sewer upgrades.

D. Hamilton Dam

The Hamilton Dam is in poor condition and considered unstable. A copy of the 2008 Dam Safety Report is provided in Appendix 7. The dam has been the subject of extensive study and recommended for removal and replacement. The 2010 Hamilton Dam Modifications and Riverfront Restoration PER provides a budget of $7.1 M for the removal and replacement of the dam, including ancillary upgrades to adjacent portions of the river.

The new Hamilton Dam is proposed at a lower elevation than the existing dam to reduce potential for flooding. A reduced water level upstream of the dam will reduce the water pool depth at the WTP intake, unless the Utah Dam is replaced or another dam is added. Testing of pumps at the WTP was completed to determine the impact of a reduced water depth at the WTP intake. Allowing for two feet of loss through the WTP intake screens after operation, reduction of the height of the Hamilton Dam by 1.5 feet or more will impact WTP's ability to draw water from the river.

E. Kearsley Dam

The Kearsley Dam is reported in satisfactory condition. Although the dam is located downstream of the city's WTP, water from the dam and Kearsley Lake supplements the river flow in advance of the Hamilton Dam, therefore contributing to the impoundment from which the WTP draws water. Water from the Kearsley Creek also serves to augment river flow at the city's WWTP located further downstream.

The storage volume of Kearsley Lake is relatively minor in relation to the storage deficit from Section VIII. Supplemental flows to the river from the Kearsley Creek are included in the USGS records included in this analysis

The dam is an important component of the city's water supply system because of its potential contribution to the WTP intake. Although currently in satisfactory condition, there will be ongoing maintenance needs to be addressed.

F. Thread Lake Dam

The Thread Lake Dam is reported to be in poor condition. Flow from the Thread Creek supplements the river flow prior to the city's WWTP. The storage provided by Thread Lake is negligible and flow from Thread Creek is included in the USGS records of river flow used for this analysis.

The Thread Lake Dam remains a facility of the city which because of its poor condition needs to be addressed. However, since the dam appears to be of little benefit to the water supply considered in this analysis, a budget for upgrades or removal has not been included in the costs for water supply.

X. Source Water Quality

Since the Flint WTP is the backup water supply in the event of a disruption to the supply from Detroit, raw water at the WTP intake is regularly sampled and analyzed. Available records provide a good understanding of the characteristics of the raw water and ranges of variances, and will be helpful to design water treatment processes and estimate operating costs.

Preliminary analysis indicates that water from the river can be treated to meet current regulations; however, additional treatment will be required than for Lake Huron water. This results in higher operating costs than the alternative of a new Lake Huron supply.

Although water from the river can be treated to meet regulatory requirements, aesthetics of the finished water will be different than that from Lake Huron. As an example, the temperature of water supplied to customers during the summer will be warmer than the present Lake Huron supply, because of the increased summer temperature in the relatively shallow river.

A detailed investigation of potential sources of contamination has not been completed. The MDEQ has reported that the Richfield Landfill is considering an application for an NPDES permit to allow for discharge of stormwater and/or treated leachate to the Holloway Reservoir. If an NPDES permit is issued, there may be an impact on the quality of source water.

If used for water supply, a source water protection management plan should be developed to study the watershed, identify potential sources of contamination, and enact safeguards to prevent or control future threats.

XI. Water Treatment

For comparison with other alternatives, it is assumed that the Flint WTP will treat water from the river to provide a finished water of similar quality to the other alternatives being considered (continued Detroit supply and new Lake Huron supply).

A review of the city's WTP has been completed (Technical Memorandum, Cost of Service Study, Flint Water Treatment Plant prepared by Lockwood, Andrews, and Newnam (LAN), dated June 2011) to evaluate its ability to treat water from the river on a continuous basis to meet current and anticipated regulations and produce high quality finished water. Details regarding this review and analysis are provided in Appendix 8.

Although the WTP has been maintained and operated as a backup water supply, there have been numerous changes in regulations and standards since the WTP last supplied water on a continuous basis. Although equipment and systems at the WTP have been used sparingly, some existing equipment and systems require replacement from deterioration or obsolescence to provide reliability for continuous operation.

Following is a summary of upgrades needed.

A. Lime Sludge Disposal

Prior to supply of water by DWSD, the city's WTP disposed of lime sludge from water treatment operations at the Bray Road disposal site. The city is working with the MDEQ to address concerns at the Bray Road site; for this study it has been assumed that new sludge handling and disposal provisions will be utilized. Lime residual handling and disposal facilities have an estimated project cost of $15.1 million. No costs have been included for remediation of the Bray Road site.

B. Soda Ash Feed System

Records of analyses of the source water indicate non-carbonate hardness. To remove the non-carbonate hardness and provide softening, soda ash should be added during treatment. The addition of a soda ash feed system has an estimated project budget of $0.5 million.

C. Chemical Storage

Bulk chemical storage of at least 30 days is needed if the plant operates on a continuous basis. New storage tanks for liquid carbon dioxide, liquid oxygen, and liquid nitrogen will be needed. The project budget for chemical storage is $2.1 million.

D. Electrical and SCADA

The power requirements of equipment at the WTP exceed the capacity of the substation which supplies the plant. Backup power generators at the WTP are not currently operable. Upgrades are recommended to power feeders for several of the existing systems. New SCADA is recommended to provide control and monitoring of operations at the WTP. The project budget for these upgrades is $8.1 million.

E. Post Chlorination and Zebra Mussel Control

Zebra mussels are an invasive shell fish which have been introduced to the Great Lakes basin, including the Flint River. Zebra mussels can obstruct pipes and water intake screens. A sodium permanganate feed system is proposed for zebra mussel control. The project budget is $0.3 million.

F. Security Issues

Additional security measures to guard against malevolent threats or terrorism which target the new water source will be required. A project budget for this is $0.3 million.

G. Pumping System Improvements (Low and High Service Pumps in PS No. 4)

The pumps are in poor condition and their capacity is not consistent with the projected demands of the city. The pumps should be replaced with new, more efficient pumps. The project budget for these is $7.8 million.

H. Filter Transfer Station to Dort Reservoir and UV Inactivation

Recent USEPA regulations require additional treatment or enhancement of existing treatment processes for microbial contaminates such as giardia, cryptosporidium, viruses, and bacteria. It is anticipated that enhanced contact time and ultraviolet light deactivation will be required to comply with these new standards. A project budget of $7.0 million is established for compliance with the new surface water treatment rules.

I. Emergency Interconnect

The GCDC-WWS and City of Flint have a mutual aid agreement providing for each to provide the other up to 8 mgd of water as a back-up supply in the event of an emergency with either system's supply. A pumping station and piping interconnect is needed to effectively complete this exchange. The project budget for these upgrades is $8.6 million.

The total of all WTP upgrades above is $49.9 million.

In addition to upgrades to the treatment plant, there will be increased operating costs associated with the continuous operation of the WTP. For comparison with other alternatives for a long-term water supply, only the additional operational costs have been determined.

- Labor – Full scale operation of the WTP and dams on a continuous basis will require additional staffing. It is estimated that labor costs will increase by $2,034,000 per year.
- Chemicals – The cost of chemicals used for water treatment are estimated at $423 per million gallons of water produced.
- Residual Disposal – Disposal costs for lime sludge is estimated to be $453,000 annually.

- Power – Increased power costs are estimated to be $104 per million gallons of water produced.
- Ozone – Ozone treatment will be needed to meet new treatment standards. A budget of $208,000 is assumed.
- Maintenance – Maintenance costs are assumed to be 20% of the O&M budget. Maintenance costs of the WTP and other facilities are expected to be relatively high because of the age of the facilities.

XII. Cost Summary

Upgrades to dams and the WTP will be needed for the Flint River to reliably supply drinking water on a continuous basis to Flint's customers. The cost of these upgrades is presented in the following table. Costs have been adjusted to an ENR Construction Cost Index of 8688 to allow for comparison with the 2009 Study. It has been assumed that design/construction commenced in 2010, to allow for comparison with the alternatives in the 2009 study.

Table 5: Project Costs

WTP Upgrades	$49,888,000
Hamilton Dam Replacement	$7,100,000
Holloway Dam /Reservoir Upgrades	$2,570,000
Utah Dam Removal	$1,900,000
Total Capital Cost	**$61,458,000**

Costs shown are based on upgrades to existing facilities to supply the projected future maximum day demand of 18.0 mgd. These upgrades are based on the assumption that the HRMP is modified to allow for operation over a greater range of water levels. Other options for supplying the projected maximum day demand will result in higher costs.

Operating costs in the initial year of operation are estimated to increase $7 million above current operating costs. Operating costs are projected to increase annually because of inflation and projected growth in demand over the study period.

Figure 1 shows the cost of water for Alternative 3, utilizing the existing WTP and Flint River for water supply. The cost of water is comprised of three components: continued purchase of water from Detroit during construction, debt for construction of facility upgrades, and ongoing operating costs.

Figure 1: Cost of Water Using Flint River as Source

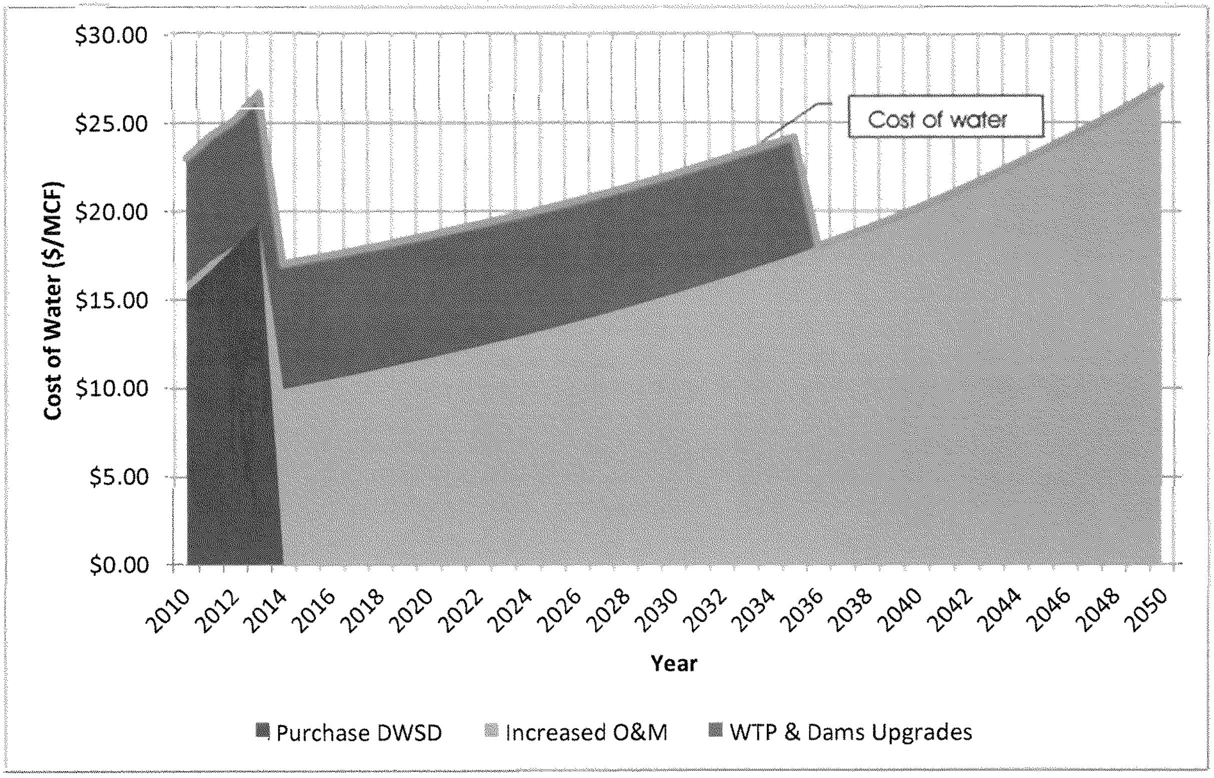
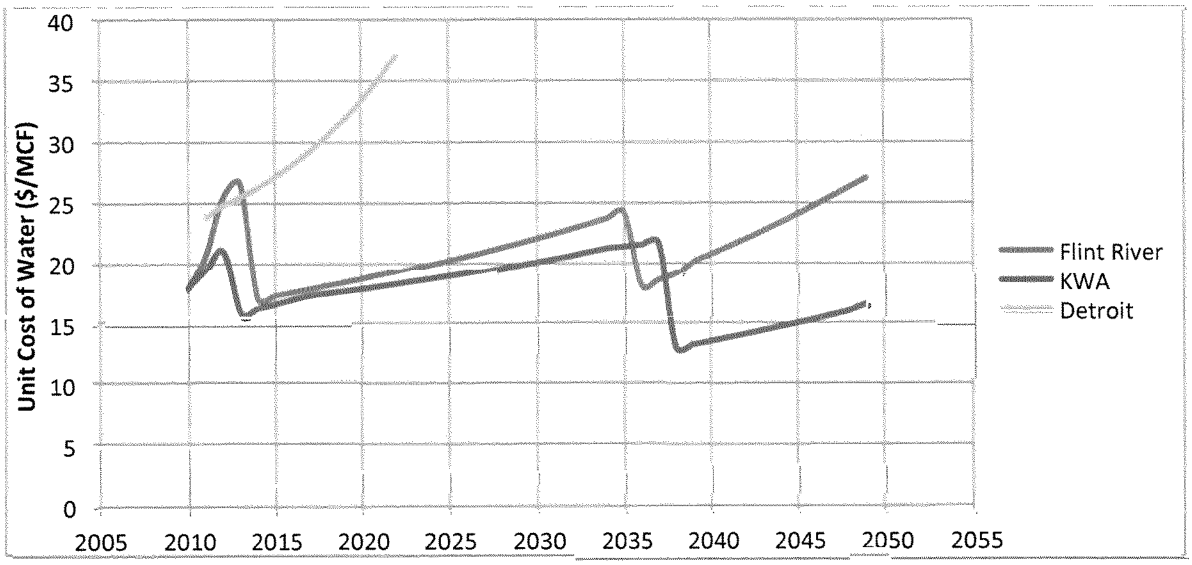


Figure 2 compares the cost of water for all three alternatives. Continued Supply by the City of Detroit results in a higher cost for water supply than the other two alternatives. The city's costs for The KWA-New Lake Huron Supply have been based upon the terms of the current KWA Raw Water Supply Contract, and the assumption that the city purchases 18 mgd capacity in the KWA system. The KWA alternative is projected to result in the lowest cost for water.

Figure 2: Comparison of Alternatives



XIII. Implementation

Planning, design, construction, and start-up will require 52 to 60 months for completion. Additional time may be required to address ancillary issues such as modifications to agreements, permits, and "non-construction related" environmental issues.

XIV. Intangibles

In addition to the upgrades identified for the dams and WTP, other issues will potentially need to be addressed if the Flint River is to be used as a water supply. Examples of these include:

- Environmental impact of work on dams or removal of sediment from the river or reservoirs
- Impact of construction and reservoir operation on the fishery
- Impact to recreational users and land owners adjacent to the Holloway Reservoir
- Potential upgrades to the city's WWTP if river flows are reduced and stricter effluent limits are included in future NPDES permits
- Impacts of the replacement of the Hamilton Dam at a lower level for improved flood control may impact the ability for the WTP to draw water from the river
- Results of a Source Water Protection Plan which may identify potential threats of contamination or other impacts to the water supply

XV. Summary

Analysis indicates that the cost of supplying water from the Flint River on a continuous basis will be greater than the proposed KWA Raw Water Supply Contract, but less than continued supplied from Detroit. Additionally, if the Flint River is to be used for a water supply for city customers, there will need to be some modifications to existing facilities, operating agreements, and permits. Upgrades will be required at the city's dams and the water treatment plant to reliably supply water to the city on a continuous basis. To meet the future maximum day demand of 18 mgd projected by city staff, one or more of the following will be required.

- Modify the Holloway Dam and Reservoir to provide additional storage
- Modify the HRMP to provide for more variance in water levels and/or modify limits on minimum discharge
- Modify the WWTP NPDES permit based on reduced flows in the river and provide resulting upgrades to WWTP for higher treatment
- Provide other raw water storage reservoirs

Addressing the preceding items is likely to require a great deal of time and effort because of the impacts on many other parties. Without making the modifications above, the river is limited to supplying a maximum day demand of about 11.6 mgd.

Appendices

1. Holloway Reservoir Management Plan
2. Excerpt of Flint WWTP NPDES permit
3. Analysis of Adequacy of Flint River as a Water Supply
4. Holloway Dam Drawings
5. 2008 Holloway Dam Safety Report
6. 2008 Utah Dam Safety Report
7. 2008 Hamilton Dam Safety Report
8. Cost of Service Study – Flint Water Treatment Plant

Appendix 1 - Holloway Reservoir Management Plan

March 13, 1987

TO: Members of the Ad Hoc Committee to Work With City of Flint Officials on Management of the Holloway Reservoir

FROM: Kenneth J. Smithee, Director
Genesee County Parks & Recreation Commission

SUBJECT: Action of the Parks & Recreation Commission

CITIZEN REPRESENTATIVES:

GERALD H. RIDEOUT
PRESIDENT
ARCHIE HALFORD, JR.
VICE PRESIDENT
CHARLES E. OLIVER, JR.
SECRETARY
JAMES S. SHEAFFER

GENESEE COUNTY BOARD OF COMMISSIONERS

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EX OFFICIO MEMBERS:

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CHAIRMAN, GENESEE COUNTY METROPOLITAN PLANNING COMMISSION
RAYMOND M. NEWMAN
CHAIRMAN, GENESEE COUNTY BOARD OF ROAD COMMISSIONERS
ANTHONY RAGNONE
GENESEE COUNTY DRAIN COMMISSIONER

KENNETH J. SMITHEE
DIRECTOR

Please be advised that the recommendations as outlined on Attachment A were approved by the Genesee County Parks & Recreation Commission meeting in formal session on March 12, 1987.

On behalf of the Commission, I would like to extend our personal thanks to each of you for the assistance which you rendered which led to the agreement between the Parks & Recreation Commission and the City of Flint and will provide protection for recreational users of the Holloway Reservoir, adjacent property owners and also help protect the fish and other aquatic life.

Thanks again.

Sincerely,

Kenneth J. Smithee
Director

KJS:jp
Attachment

G-5055 BRANCH ROAD FLINT, MICHIGAN 48506 PHONE (313) 736-7100
AFFILIATED WITH
MICHIGAN RECREATION AND PARK ASSOCIATION NATIONAL RECREATION AND PARK ASSOCIATION

AGENDA ITEM: (5). i.

R-22

PRESENTED: 3/9/87

ADOPTED: 3/9/87

By the Mayor:

WHEREAS, the City of Flint in adopting ordinance 2208 granted to the Genesee County Parks and Recreation Commission the right to establish and operate park and recreational facilities and conservations programs on property owned by the City of Flint in the Holloway Reservoir area; reserving unto itself the power to control and regulate the dams and water levels of the Holloway Reservoir, and

WHEREAS, it is in the interests of the City and the Genesee County Parks and Recreation Commission to establish a Management Plan which optimizes the summer recreational programs available to the public while preserving downstream usages of the Flint River, and which will assist the City in implementing the provisions of ordinance 2208.

NOW, THEREFORE, BE IT RESOLVED, that the City of Flint adopts the attached Holloway Reservoir Management Plan.

APPROVED AS TO FORM:

Chief Legal Officer

R990

COUNCIL MARCH 9, 1987

HOLLOWAY RESERVOIR MANAGEMENT PLAN

GENERAL OBJECTIVE:

To operate Holloway Dam in a manner that optimizes summer recreation on the Holloway Reservoir while preserving downstream usages of the waters of the Flint River and assuring availability of a back-up water supply for Flint.

GENERAL OPERATING PROCEDURE:

Spring Fill - The City of Flint shall operate the dam with the intention of capturing a sufficient quantity of spring run-off to maintain the reservoir at a minimum elevation of 755 feet no later than May 1 of each year.

Summer Operation - The City of Flint shall maintain a minimum outflow of 65 cfs until the level of the reservoir falls to an elevation of 752.7 feet. At any time that the level reaches elevation 752.7 feet the city shall operate the dam such that the outflow does not exceed inflow, on any given day, provided, however, that the city shall not be obligated to make more than one adjustment to flow during any given day.

Winter Drawdown - The City of Flint shall operate the dam to gradually drawdown the reservoir during the first two weeks of November to an elevation of 751 feet in order to prevent structural damage to the dam from freezing.

Notification - The City of Flint shall provide prior notification to the Genesee County Parks and Recreation Commission before making a change in dam operations which result in significant drawdown.

Maintenance and Construction - Routine maintenance shall be scheduled to avoid conflicts with major events and peak usage periods on the reservoir. A minimum of 30 days notification shall precede all maintenance and construction involving significant drawdown. The Genesee County Parks and Recreation Commission shall promptly receive copies of all dam maintenance permit applications made by the City of Flint to the Michigan Department of Natural Resources.

Gauging of Water Flow into Reservoir - The City of Flint shall be a cooperator with the U.S.G.S. and State of Michigan to establish a stream gauge on the north branch of the Flint River upstream of the Holloway Reservoir and be a cooperator on the annual maintenance and operation of the existing gauge on the south branch of the Flint River and the new gauge on the north branch of the Flint River.

EMERGENCIES:

In emergency situations affecting public health, safety and welfare the City of Flint shall operate the Holloway dam in a manner to protect the public health, safety and welfare. This shall be done even though recreational users and others may be temporarily inconvenienced. Situations which shall be identified as emergencies shall include but not be limited to the following: flood conditions, interruption of the City of Flint's public water supply, and event(s) which threatens the structural integrity of the dam, and acts of God. However, low flow augmentation for sewage treatment shall not be considered as an emergency.

MONITORING:

The City of Flint in cooperation with the Genesee County Parks and Recreation Commission will assure conformance with the Holloway Reservoir Management Guidelines. A standing oversight committee shall be created to provide monitoring of the reservoir management and facilitate exchange of timely information regarding the Holloway dam and reservoir. The committee shall be composed of two members from both the City of Flint and the Genesee County Parks and Recreation Commission and shall meet in April and November of each year. The Genesee County Parks and Recreation Commission shall provide the City of Flint with a schedule for summer events on Holloway Reservoir at the April meeting of the Oversight Committee.

PERIOD AND EXECUTION OF AGREEMENT:

The Holloway Reservoir Management Plan shall be in full force and effect when officially adopted by the Flint City Council and the Genesee County Parks and Recreation Commission and shall remain so until altered by mutual agreement.

MANAGEMENT PLAN STATUS:

This management plan establishes targets for optimal operation of the Holloway Dam and Reservoir but does not replace the terms and conditions of Flint City Ordinance No. 2208.

p:DAM(a)

Appendix 2 - Excerpt of Flint WWTP NPDES permit

PART I

Section A. Limitations and Monitoring Requirements

1. Final Effluent Limitations, Monitoring Point 001A

During the period beginning on the effective date of this permit and lasting until the expiration date of this permit, the permittee is authorized to discharge treated municipal wastewater from Monitoring Point 001A through Outfall 001. Outfall 001 discharges to the Flint River. Such discharge shall be limited and monitored by the permittee as specified below.

	Maximum Limits for Quantity or Loading				Maximum Limits for Quality or Concentration					
Parameter	**Monthly**	**7-Day**	**Daily**	**Units**	**Monthly**	**7-Day**	**Daily**	**Units**	**Frequency of Analysis**	**Sample Type**
Flow	(report)	---	(report)	MGD	---	---	---	---	Daily	Report Total *Daily Flow*
Carbonaceous Biochemical Oxygen Demand ($CBOD_5$)										
4/1-4/30	6,672	10,000	---	lbs/day	16	---	24	mg/l	Daily	24-Hr Composite
5/1-10/31	2,920	3,750	---	lbs/day	7	---	9	mg/l	Daily	24-Hr Composite
11/1-11/30	4,590	6,672	---	lbs/day	11	---	16	mg/l	Daily	24-Hr Composite
12/1-3/31	5,420	8,340	---	lbs/day	13	---	20	mg/l	Daily	24-Hr Composite
Total Suspended Solids										
5/1-10/31	8,340	12,500	---	lbs/day	20	30	---	mg/l	Daily	24-Hr Composite
11/1-/4/30	12,500	18,800	---	lbs/day	30	45	---	mg/l	Daily	24-Hr Composite
Ammonia Nitrogen (as N)										
4/1-4/30	2,920	4,170	---	lbs/day	7.0	---	10.0	mg/l	Daily	24-Hr Composite
5/1-10/31	667	1,460	---	lbs/day	1.6	---	3.5	mg/l	Daily	24-Hr Composite
11/1-11/30	2,080	2,920	---	lbs/day	5.0	---	7.0	mg/l	Daily	24-Hr Composite
12/1-3/31	2,500	3,128	---	lbs/day	6.0	---	7.5	mg/l	Daily	24-Hr Composite
Total Phosphorus (as P)	417	---	---	lbs/day	1.0	---	---	mg/l	Daily	24-Hr Composite
Fecal Coliform Bacteria	---	---	---	---	200	400	---	cts/100 ml	Daily	Grab
Total Residual Chlorine	---	---	---	---	---	---	0.038	mg/l	Daily	Grab
Total Mercury										
Through 12/31/2008	---	---	---	lbs/day	(report)	---	---	ng/l	Quarterly	Grab
Beginning 1/1/2009	0.0042	---	---	lbs/day	10	---	---	ng/l	Quarterly	Grab
Acute Toxicity										
Through 12/31/2008	---	---	---	---	---	---	(report)	TU_A	Quarterly	24-Hr Composite
Beginning 1/1/2009	---	---	---	---	---	---	1.0	TU_A	Quarterly	24-Hr Composite
Chronic Toxicity										
Through 12/31/2008	---	---	---	---	(report)	---	---	TU_C	Quarterly	24-Hr Composite
Beginning 1/1/2009	---	---	---	---	1.5	---	---	TU_C	Quarterly	24-Hr Composite
					Minimum Daily		**Maximum Daily**			
pH	---	---	---	---	6.5	---	9.0	S.U.	Daily	Grab

The following design flow was used in determining the above limitations, but is not to be considered a limitation or actual capacity: A rated design capacity of 50 MGD and the 1988 Water Resources Commission directive to use a 95 percent exceedance (Flint River drought) flow of 85 cfs (Holloway Reservoir Management Plan) for limit calculations.

Appendix 3 - Analysis of Adequacy of Flint River as a Water Supply

Technical Memorandum
Analysis of Adequacy of Flint River as Water Supply

1.0 Quantity of Water Required

Recommended Standards for Water Works, 2003 Edition indicates that the quantity of surface water at the source shall:

- Be adequate to meet the maximum projected water demand of the service area as shown by calculations based on a one in fifty year drought or the extreme drought of record, and should include consideration of multiple year droughts. Requirements for flows downstream of the intake shall comply with requirements of the appropriate reviewing authority.
- Provide reasonable surplus for anticipated growth
- Be adequate to compensate for all losses such as silting, evaporation, seepage, etc.
- Be adequate to provide ample water for other legal users of the source.

2.0 Demand Summary

City staff has indicated the future maximum day demand of the city is 18 mgd.

In addition to the water used by customers, some water will be required for water treatment processes and filter backwash. An allowance for WTP Backwash and Process water of 2 mgd is assumed.

Water used for fire-fighting is not included in customer demand or sales. An allowance 0.7mgd for replenishing water used for fire-fighting is assumed.

The maximum day demand represents the quantity of water which must be supplied on the particular day that the highest use (demand) occurs. Treatment and pumping must be designed to deliver the maximum day demand. During peak periods, storage from the Holloway Reservoir can be utilized to supplement the natural river flow. For analysis of the river as a source, the maximum month will be used as the demand.

A review of the city's water demands and precipitation records suggest that maximum month demand is about 80% of the maximum day demand.

The maximum sustained demand to be withdrawn from the river is computed in the following table:

Table 1: City of Flint Design Demand Summary

Future Maximum Day Demand (Customers)		18.0 mgd
Future Maximum Day Demand (WTP Backwash / Process Water)		2.0 mgd
Subtotal (Future Maximum Day Demand)		20.0 mgd
Sustained (30 day) Future Maximum Day Demand	(80% of MDD)	16.0 mgd
Replenish Water from Fire Fighting		0.7 mgd
Future Maximum Day Demand (Source Water)		16.7 mgd

3.0 Additional Demands and Requirements

In addition to the demands from Section 2, the following demands must be accounted for:

3.1 Mutual Aid

The City and GCDC-WWS have a mutual aid agreement to supply each other water in the event of a disruption in supply or other emergency. The agreement provides that the city will supply GCDC-WWS up to 8 mgd.

For this analysis, it is assumed that an emergency will be corrected within 14 days. The volume of water that may be required is therefore: 14 days * 8,000,000 gal/day = 112,000,000 gal. This volume will be reserved from the reservoir volume.

3.2 Evaporation

Both the Holloway and Mott dams have been constructed since the drought period of the 1930's, which is being used as the base river flow for analysis. Evaporation from the Holloway Reservoir and Mott Lake will reduce the amount of available from the river. The NWS publishes an atlas which shows evaporation rates. Evaporation is primarily a factor during the "growing season"; the atlas shows that about 24" of water is lost via evaporation from open water surfaces in Genesee County over the May through October period. Loss by evaporation will be offset by the addition of rainfall directly upon the water surface. Since the analysis is based upon drought conditions, the low rainfall having a recurrence rate of 100 years will be used. During the May through October period, 11.5 inches of rain is estimated during the 1 in 100 dry year. The net loss by evaporation is therefore 12.5 inches.

The following table summarizes the loss by evaporation, over the six month period from May through October.

Table 2: Reservoir Evaporation Loss

Reservoir	Surface Area (Acres)	Evaporation (inches)	Precipitation (inches)	Net Loss by Evaporation (Gallons)
Holloway Reservoir	1,973	24	11.5	669,646,065
Mott Lake	684	24	11.5	232,153,020
Total				901,799,085

3.3 Siltation

The July 2001 Flint River Assessment completed by the MDNR indicates that sedimentation occurs in the Holloway Reservoir at an accelerated rate, but does not provide quantities. Measurements of the silt accumulation in the reservoir have not been completed. Accumulations of several feet have occurred in other reservoirs. Sedimentation of an average of 1 foot across the Holloway Reservoir will result in the loss of 643,000,000 gallons of storage, or about ten percent of the total volume available.

Mott Lake is not used as a water storage reservoir. Its level is controlled by a fixed weir. Although siltation likely occurs in Mott Lake too, it has no impact on storage for water supply.

3.4 Seepage

Seepage is not believed to have a significant impact on the availability of water at the WTP. Seepage through the embankments of either the Holloway or Mott dams or through the bottom of the reservoirs seems likely to migrate back to the Flint River, although perhaps downstream of the reservoirs, prior to the WTP.

3.5 Flint WWTP

The City's WWTP discharges treated wastewater to the Flint River. The NPDES permit issued to the WWTP has established limits for the treated effluent, based on a drought flow in the river of at least 85 cfs.

3.6 Holloway Reservoir Management Plan

In 1977 the City and Genesee County executed the Holloway Reservoir Management Plan (HRMP) which established parameters for the operation of the dam and reservoir. In 1977, water was no longer withdrawn from the river for water supply and the HRMP appears to have been developed to address four primary issues:

- Availability to utilize the reservoir for water supply as a backup or alternative supply
- Provide for physical maintenance of the dam
- Provide for the recreational use of the reservoir
- Provide flow augmentation to Flint WWTP

The HRMP establishes a summer operating level of 755 and a winter level 751. The summer level maximizes the volume of water available during the dry period in the event that the river is to be used as a water supply. The higher level also supports recreational activities on the reservoir. The 751 winter level provides protection against damage from freezing during the winter. The HRMP establishes a minimum discharge of 65 cfs from the dam, presumably to provide a minimum flow of 85 cfs in the river at the WWTP.

4.0 Analysis

It is assumed that the demands and other requirements identified above are to be maintained in the event that water is withdrawn from the Flint River for water supply. In 1963, USGS published Water Resources Flint Area Michigan, which includes an analysis of the river as a water supply. This publication includes design information regarding the Holloway Reservoir and its operation for water supply.

In 1977 when the HRMP was executed, water was not withdrawn from the river for water supply. If the HRMP required a minimum discharge of 65 cfs at the Holloway Dam to provide for adequate flow in the river at the WWTP, the minimum discharge from the Holloway Dam should be increased by the amount of water withdrawn for water supply if the current river flow at the WWTP is to be maintained.

65 cfs + 16.7 mgd (25.8 cfs) = 90.8 cfs (58.7 mgd)

Figure 1 shows the sustained discharge which can be maintained from the Holloway Reservoir during a drought period. This graph is based on USGS records of flow in the river between 1930 and 1952. This period includes the drought period of 1930 to 1937, which is USGS considers the most severe drought in Michigan history, having a recurrence period of 1 every 50 to 70 years. This period was prior to the construction of Holloway Dam, so river records reflect the natural flow of the river without impact by dam operations.

Figure 1: Draft-Storage Curve, Flint River near Otisville (excerpt from USGS Water Resources Flint Area Michigan)

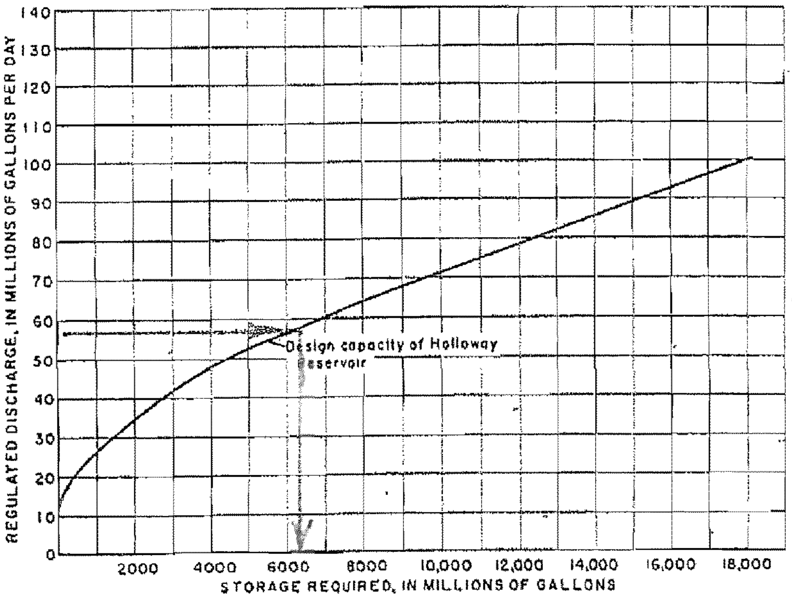


Figure 1 indicates that about 6.2 billion gallons of storage is needed to maintain a sustained discharge of 58.6 mgd from the reservoir to provide the minimum river flow of 85 cfs at the WWTP.

In addition to the 6.2 billion gallons of storage, additional storage is required to provide GCDC-WWS an emergency supply and to make up for reservoir loss by evaporation.

Table 3: Storage Requirements to Maintain Current Conditions plus Water Supply

Storage to meet sustained demand and WWTP flow:	6.20	billion gallons
Storage to provide backup supply to GCDC-WWS:	0.11	billion gallons
Storage to make up loss by evaporation:	0.90	billion gallons
Storage lost by siltation:	0.64	billion gallons (assumed)
Storage to provide loss by seepage:	0.00	billion gallons (assumed)
Storage Needed to Supplement River Flow:	7.85	billion gallons

For this analysis, it is assumed that storage is available from the Holloway Reservoir to supplement the natural river flow.

- The Holloway Reservoir was designed to provide storage for water supply in the 1950's
- The Mott Dam is a fixed weir, so storage is not available. The dam is owned by the Genesee county Parks Department and provides recreational benefit.
- The Hamilton Dam impoundment is limited to the river channel; storage volume is negligible.
- The Utah Dam is inoperable.

- The Kearsley Dam is not directly located on the Flint River, but on the Kearsley Creek just prior to its confluence with the Flint River. The Kearsley Creek discharges to the Flint River downstream of the City's WTP so storage from the river is not available for water supply; however, discharge from the Kearsley dam can be used to supplement downstream river flows, including the flow in the river at the WWTP. The Kearsley Reservoir can provide a maximum of 650 million gallons of storage.
- The Thread Lake Dam is not located on the Flint River, but the Thread Creek discharges into the Swartz Creek which discharges into the Flint River just west of the downtown area. The Thread Lake dam provides a maximum storage volume of 100 million gallons of storage. Discharge from the Thread Lake dam could be used to supplement downstream river flows, but not for water supply.
- For this analysis, storage from neither the Kearsley Reservoir nor Thread Lake is included. Both dams were constructed prior the Holloway Reservoir and discharges from the Kearsley Dam and Thread Lake Dam are assumed to be included in the analysis presented in the USGS publication.

Following is a capacity curve for the Holloway Reservoir, from the USGS Water Resources Flint Area.

Figure 2: Holloway Reservoir Storage Capacity (excerpt from USGS Water Resources Flint Area Michigan)

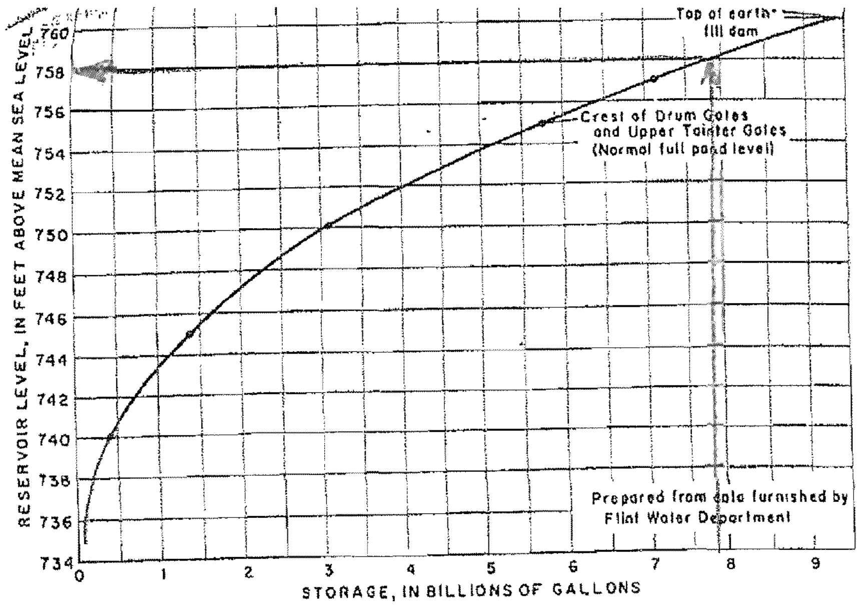


Figure 2 indicates that a Holloway Reservoir level of 758.0 feet provides storage of 7.85 billion gallons.

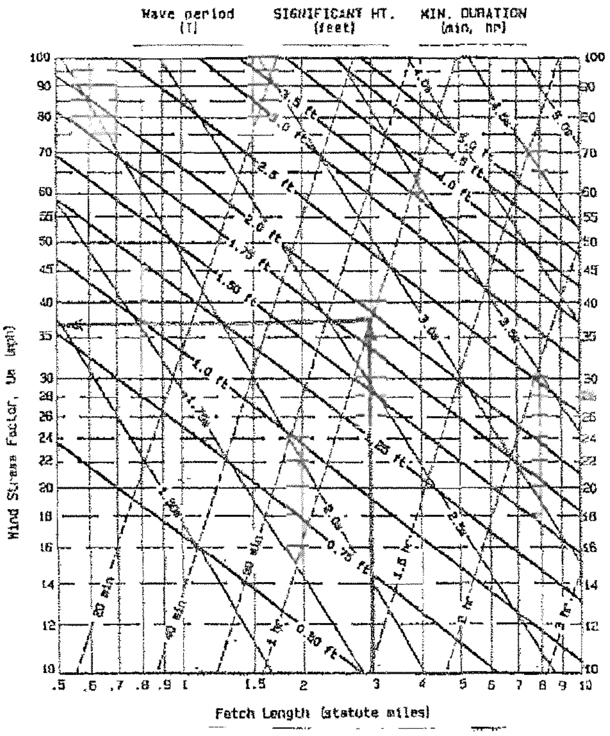
Review of design drawings of the Holloway Dam indicates that the dam was designed to use drum gates to maintain the normal water level(s) of the reservoir. The drum gates can rotate to allow for reservoir levels ranging from a low level of 751 feet to a high level of 755 feet. If the reservoir is to be maintained at a higher level than the current summer level of 755 feet, modifications will be required to the drum gates.

According to the original dam design drawings, the dam embankment was constructed to elevation 763 feet (however, the USGS reports shows the top elevation as 760 feet). If the reservoir level is raised to 758 feet, only about five feet of freeboard will be provided to guard against overtopping. There are three concerns regarding increasing the reservoir level from 755 to 758 feet.

The increased hydraulic pressure resulting from the higher water level on one side of the dam will result in increased seepage through the embankment, and a reduction in its integrity.

The reservoir has a fetch of about three miles east from the dam. Figure 3 shows that a 37 mph wind sustained for one hour duration from the east can result in waves capable of two feet. The original design drawings show rip-rap armoring on the reservoir side of the dam embankment to an elevation of 757 feet. Rip-rap armoring should be extended to at least two feet higher than the 758 feet level to protect against wave action.

Figure 3: Predicted Wave Action – Holloway Reservoir



The reservoir is tributary to a large watershed. There have been rapid increases in river flow (and reservoir level) soon after intense rain events in the watershed. A rain storm in June 1996 resulted in a 1.62 foot increase in the water level of the reservoir resulting in the opening of dam gates and discharge of 7,740 cfs. Reducing the freeboard also reduces the volume available for flood management.

5.0 Quantity of Water Supply Available

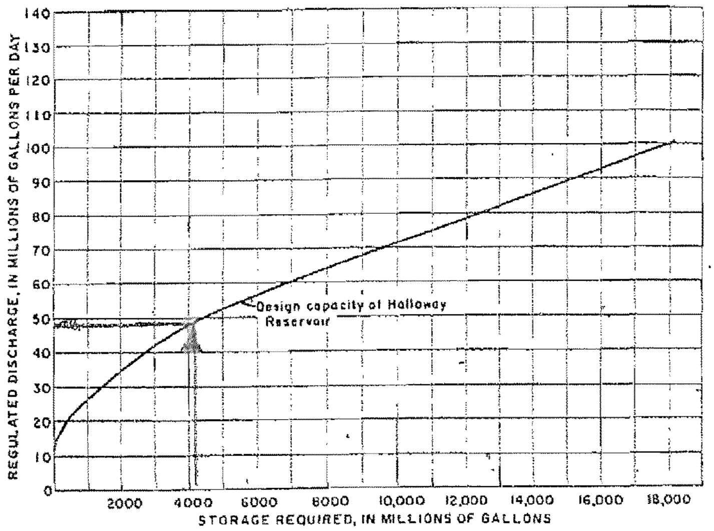
Analysis has shown that without modifications to facilities and/or permits and agreements, the river cannot supply the future maximum demand of the city.

Table 4: Storage Available for Water Supply

Original Storage Volume of Holloway Reservoir (elevation 755')	5.76	billion gallons
Storage lost by Sedimentation (assumed)	0.64	billion gallons
Storage to make up for Evaporation	0.9	billion gallons
Storage to provide backup supply for GCDC-WWS	0.11	billion gallons
Storage available to supplement river flow	4.11	billion gallons

The following figure shows that 4.11 billion gallons of storage can sustain a supplemental flow of 48 mgd.

Figure 4 – Sustained Discharge Available from Holloway Reservoir



A minimum discharge of 48 cfs from the Holloway Reservoir can support a sustained water withdrawal of about 11 mgd and maintain 85 cfs at the WWTP, as shown in the following table.

Table 5 – Maximum Sustained WTP Withdrawal Available

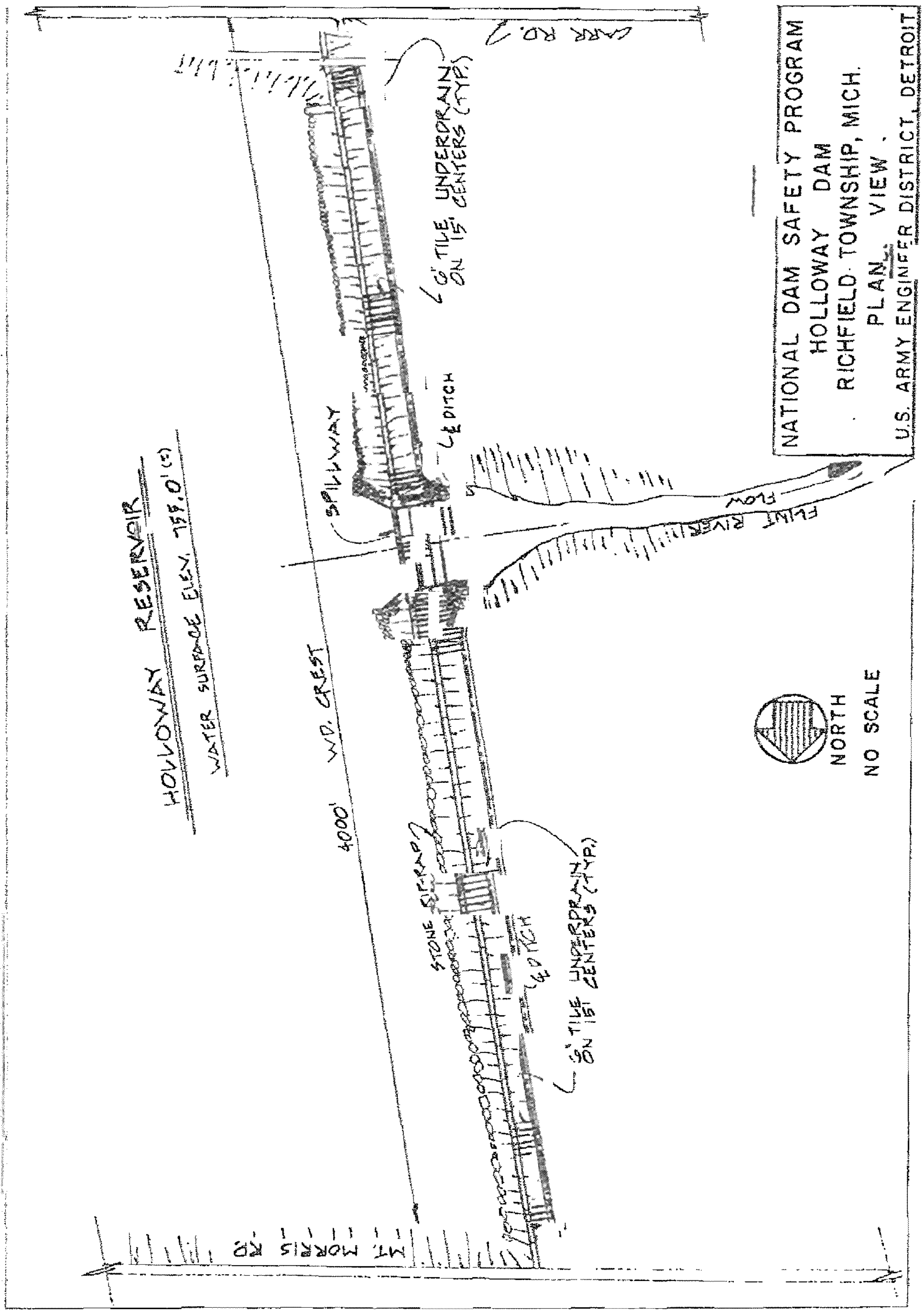
	1978 - Holloway Reservoir Management Plan	Future
Minimum Reservoir Discharge	65 cfs	48 cfs
River Inflow	20 cfs	20 cfs
WTP Withdrawal	0 cfs	17 cfs (10.99 Mgd)
River Flow at WWTP	85 cfs	85 cfs

A sustained water withdrawal of 11 mgd will support a maximum day demand of 11.6 mgd, as shown in the following table.

Table 6 – Available WTP Maximum Day Demand

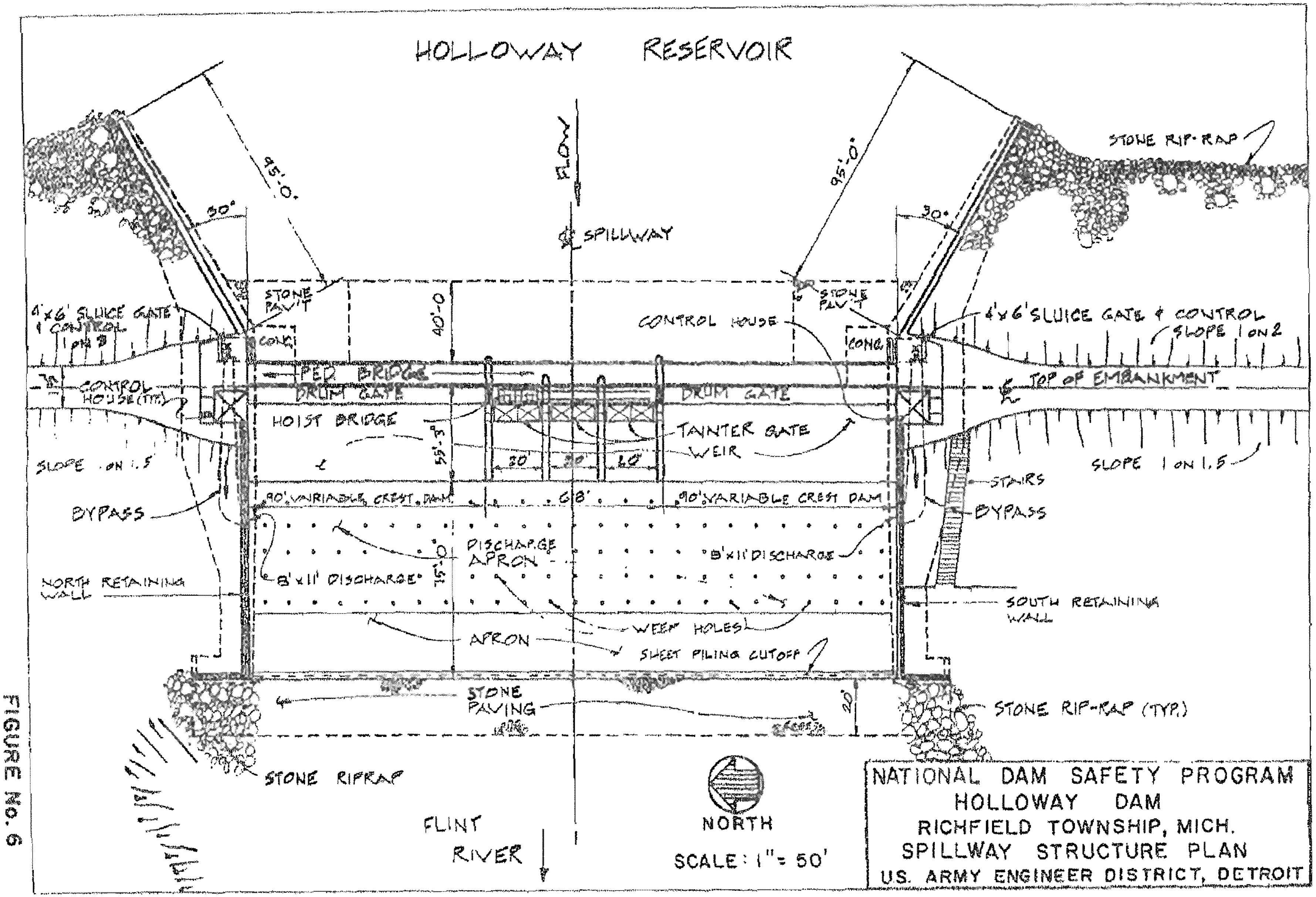
Sustained Withdrawal Available		11.0 mgd
Water to replenish fire fighting		0.7 mgd
Sustained (30 day) Future Maximum Day Demand Available		10.3 mgd
Future Maximum Day Demand Available	(Multiply by 125%)	12.9 mgd
Water available for WTP Backwash/Process		1.3 mgd
Water available for customer Max Day Demand		11.6 mgd

Appendix 4 - Holloway Dam Drawings



NATIONAL DAM SAFETY PROGRAM
HOLLOWAY DAM
RICHFIELD TOWNSHIP, MICH.
PLAN VIEW
U.S. ARMY ENGINEER DISTRICT, DETROIT

FIGURE No.5



NATIONAL DAM SAFETY PROGRAM
HOLLOWAY DAM
RICHFIELD TOWNSHIP, MICH.
SPILLWAY STRUCTURE PLAN
U.S. ARMY ENGINEER DISTRICT, DETROIT

FIGURE No. 6

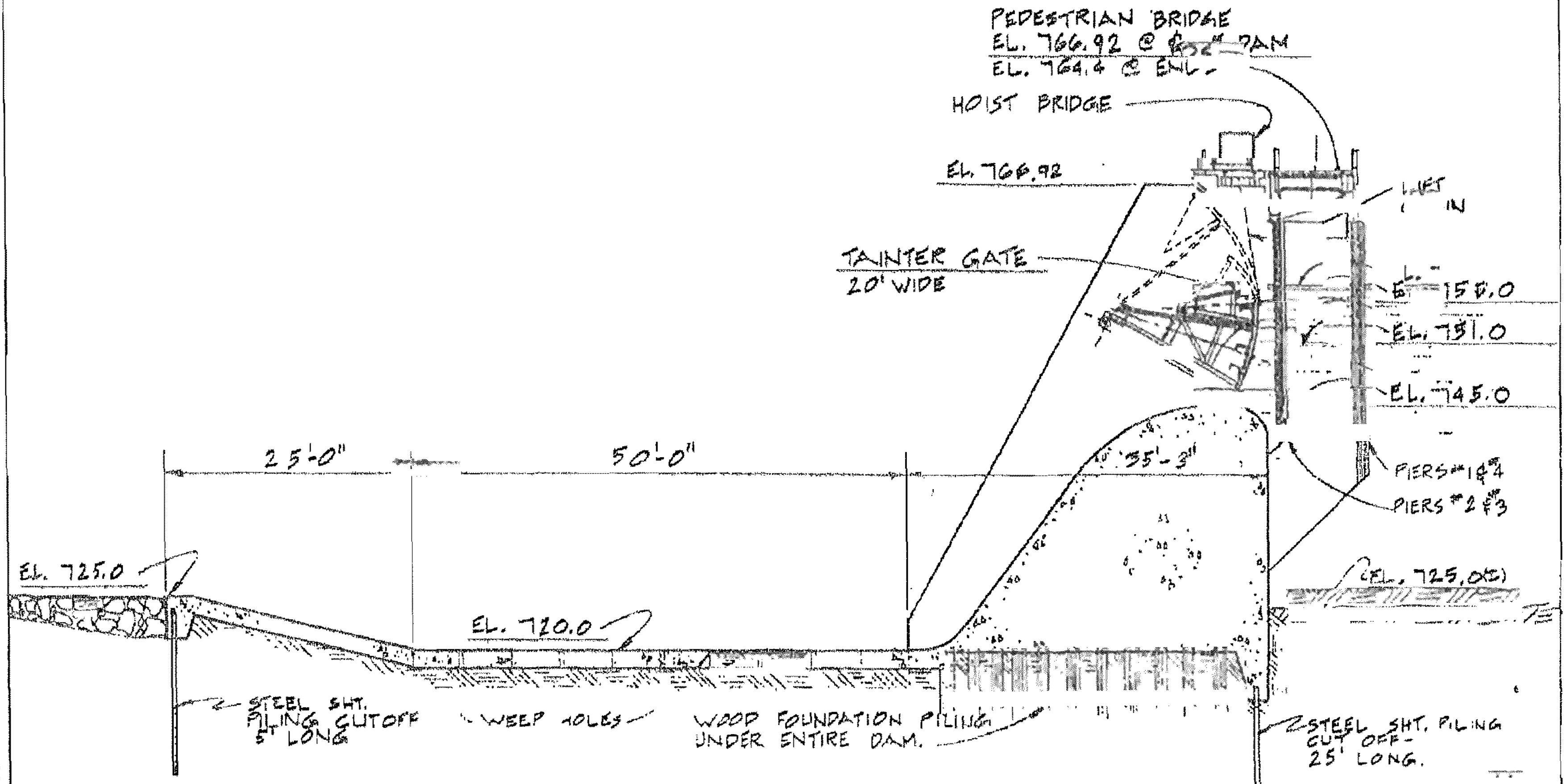
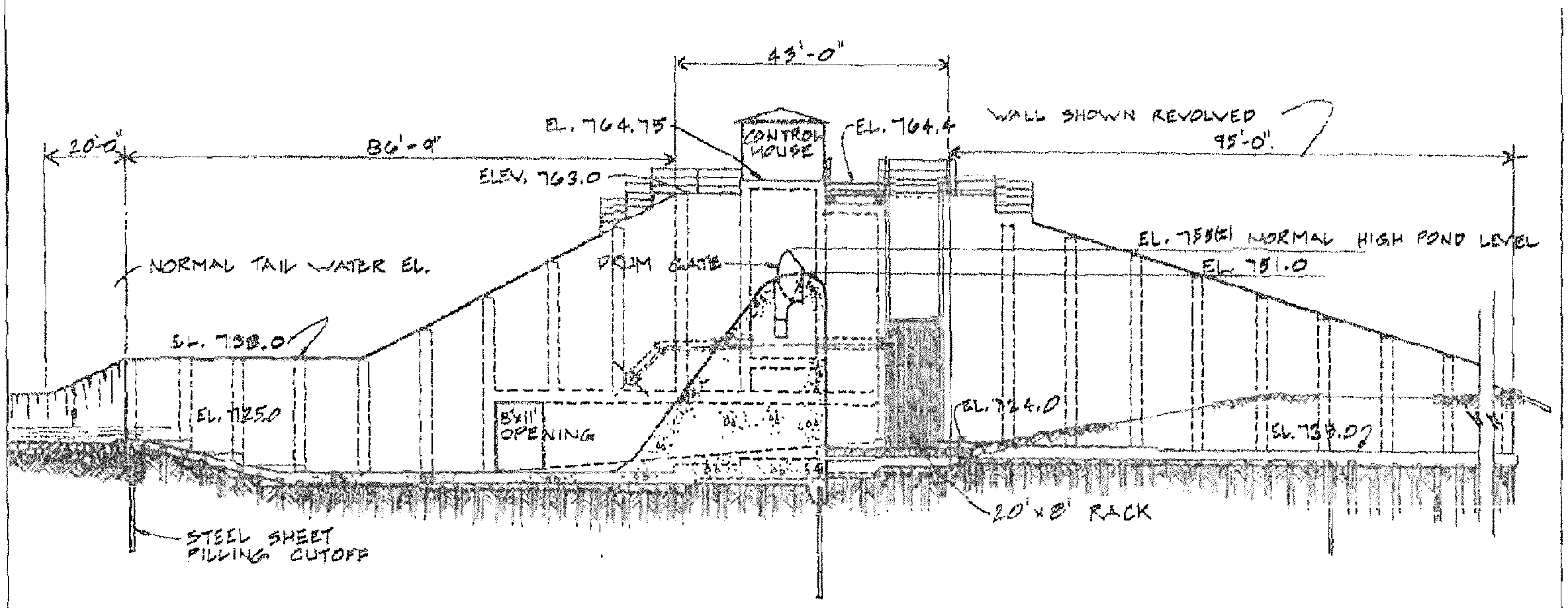


FIGURE No. 7

SPILLWAY & TAINTER GATE PROFILE

SCALE: 1/16" = 1'-0"

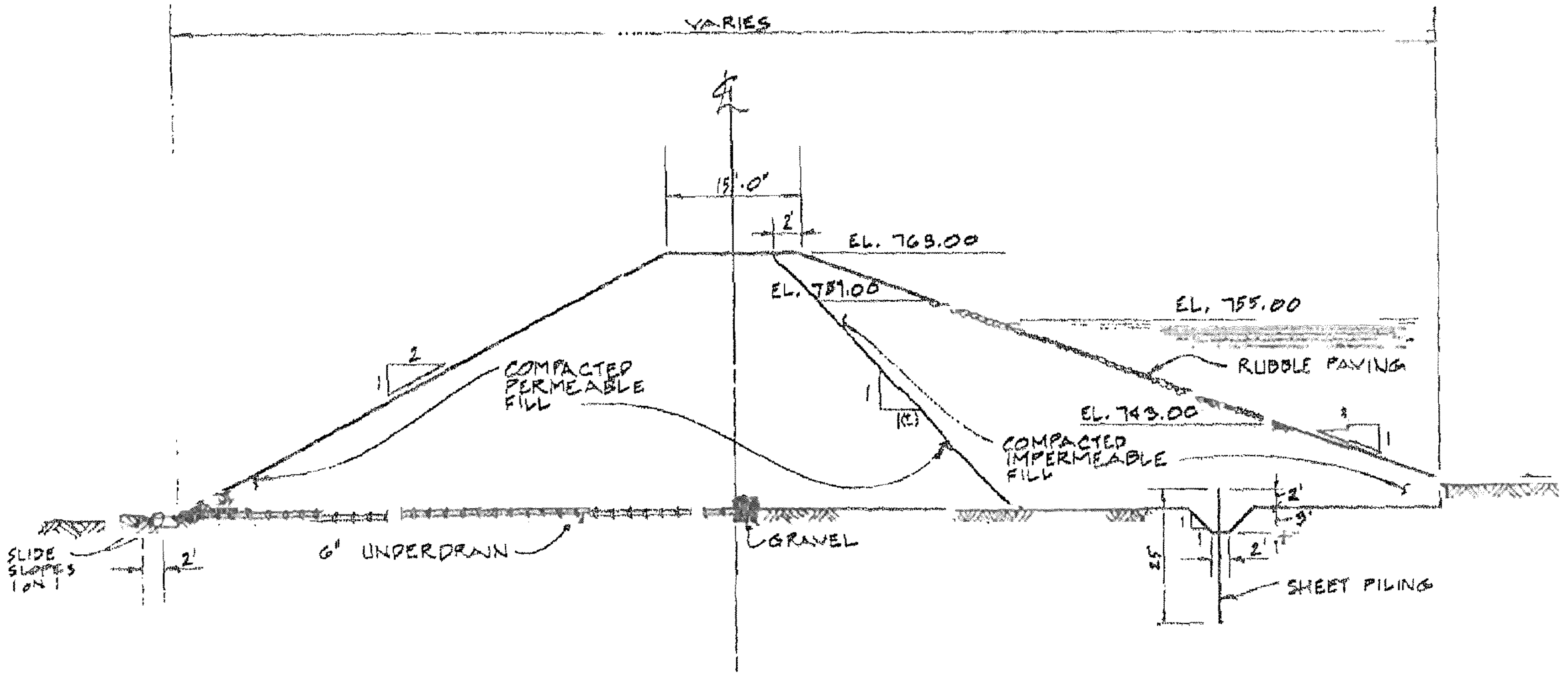
NATIONAL DAM SAFETY PROGRAM
HOLLOWAY DAM
RICHFIELD TOWNSHIP, MICH.
SPILLWAY & TAINTER GATE PROFILE
U.S. ARMY ENGINEER DISTRICT, DETROIT



SPILLWAY AND DRUM GATE PROFILE
NO SCALE

NATIONAL DAM SAFETY PROGRAM
HOLLOWAY DAM
RICHFIELD TOWNSHIP, MICH.
SPILLWAY & DRUM GATE PROFILE
U.S. ARMY ENGINEER DISTRICT, DETROIT

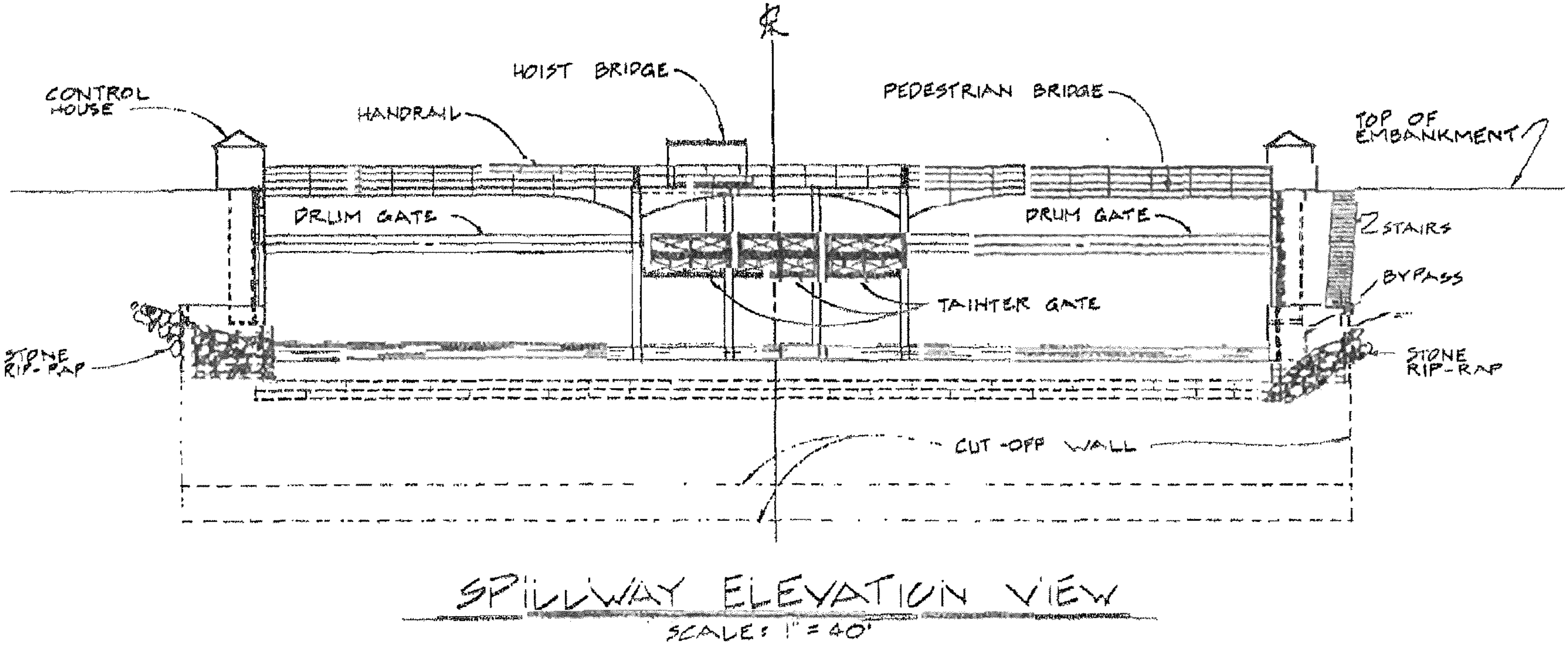
FIGURE No. 8



TYPICAL DAM SECTION
NO SCALE

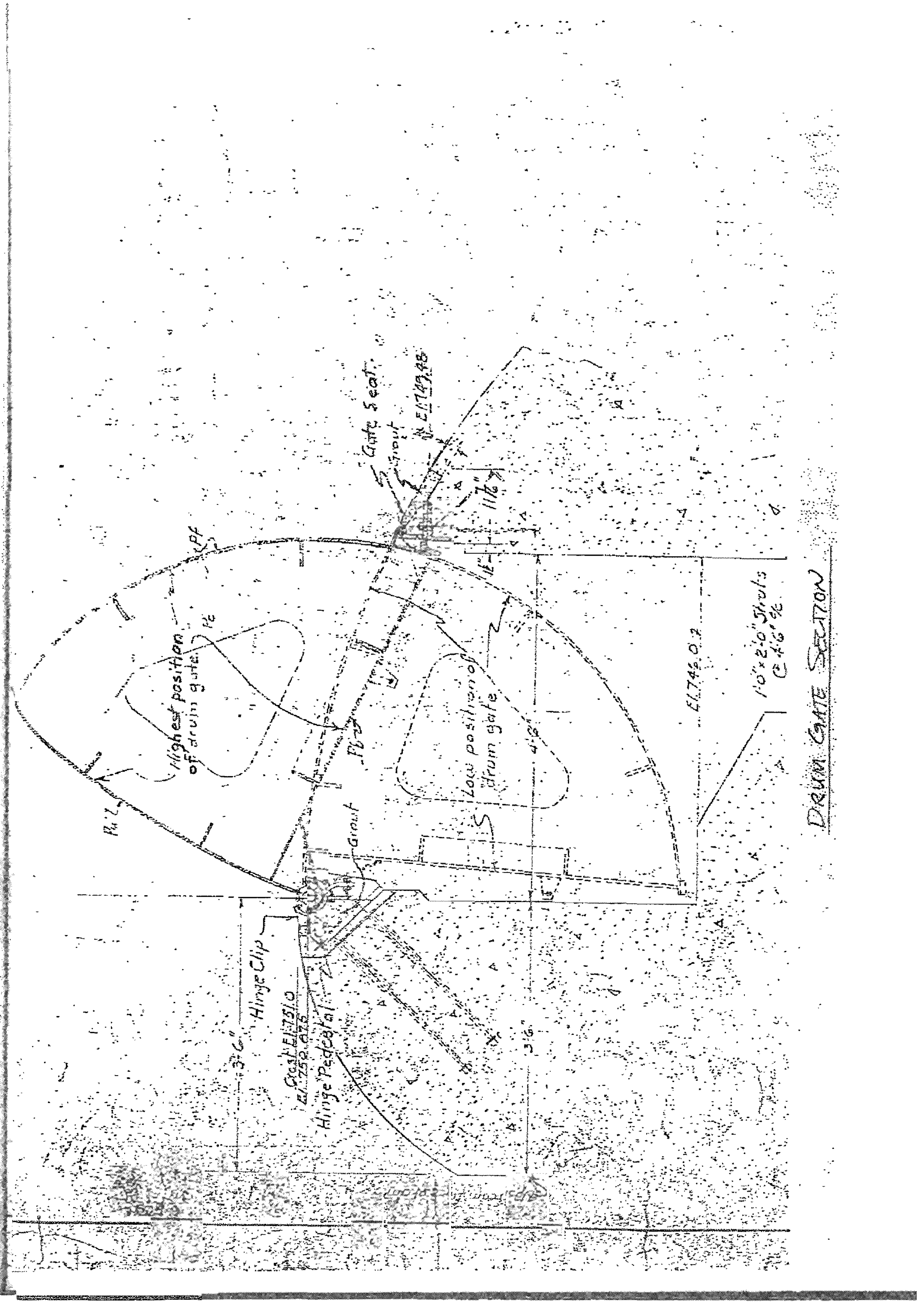
NATIONAL DAM SAFETY PROGRAM
HOLLOWAY DAM
RICHFIELD TOWNSHIP, MICH.
EARTH EMBANKMENT PROFILE
U.S. ARMY ENGINEER DISTRICT, DETROIT

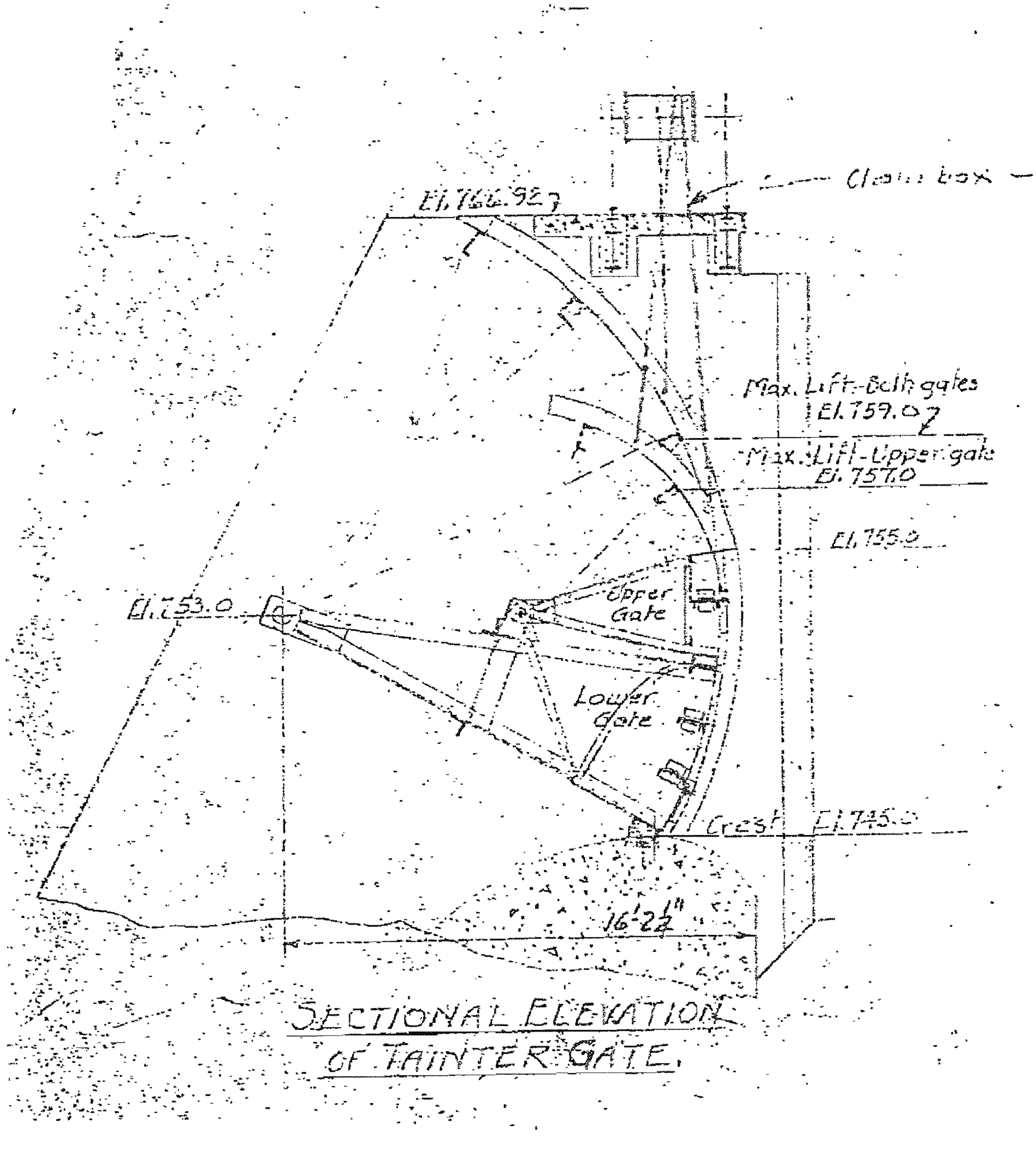
FIGURE No. 9



NATIONAL DAM SAFETY PROGRAM
HOLLOWAY DAM
RICHFIELD TOWNSHIP, MICH.
SPILLWAY ELEVATION VIEW
U.S. ARMY ENGINEER DISTRICT, DETROIT

FIGURE No. 10


Gate Seat
Grout
℄ El.749.48
11⅞"
Pf
Pa
Pb
Highest position of drum gate
Low position of drum gate
El.746.0?
1'0"x2'0" Struts @ 4'6" c/c
DRUM GATE SECTION
Grout
Hinge Clip
Crest El.751.0
El.752.0?
Hinge Pedestal
3'6"
3'6"



SECTIONAL ELEVATION OF TAINTER GATE.

Appendix 5 - 2008 Holloway Dam Safety Report

MICHIGAN PUBLIC ACT 451, PART 315
INSPECTION REPORT
HOLLOWAY DAM
GENESEE COUNTY, MICHIGAN
INVENTORY NUMBER 064 – HIGH HAZARD

FOR

CITY OF FLINT
WATER TREATMENT PLANT
4500 N. DORT HIGHWAY
FLINT, MICHIGAN 48505
ATTN: MR BRENT WRIGHT
(810) 787-6537

BY

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DANA M.
DOUGHERTY
ENGINEER
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INSPECTOR(S): Dana M. Dougherty – Stantec Consulting Michigan Inc.

DATE OF INSPECTION: October 19, 2008

PROFESSIONAL ENGINEER: Dana M. Dougherty, PE
STANTEC CONSULTING MICHIGAN INC.
3959 RESEARCH PARK DRIVE
ANN ARBOR, MICHIGAN 48108-2219

Dana M Dougherty

Dana M. Dougherty, PE #24737

HOLLOWAY DAM
CITY OF FLINT
GENESEE COUNTY, MICHIGAN

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HOLLOWAY DAM
CITY OF FLINT
GENESEE COUNTY, MICHIGAN

1.0 Purpose and Authority

The purpose of the report is to present a summary of findings for the field inspection of the Holloway Dam completed by Stantec Consulting Michigan Inc. (Stantec) on October 19, 2008 pursuant to the requirements of Part 315, Dam Safety, of the Natural Resources and Environmental Protection Act, 1994 P.A. 451, Section 31518.

This dam inspection Report and associated inspection activities were commissioned by the City of Flint, Michigan, the dam owner. The Holloway Dam is registered with the Michigan Department of Environmental Quality (MDEQ) as Dam Number 064.

References in the report to "left" and "right" are based on the observer facing downstream.

HOLLOWAY DAM
CITY OF FLINT
GENESEE COUNTY, MICHIGAN

2.0 Conclusions and Recommendations

The Holloway Dam was inspected on October 19, 2008 in accordance with Michigan P.A. 451, Part 315 criteria. The dam, including spillway and embankments was found to be in good condition. A summary of comments/recommendations is as follows:

1. The City of Flint should continue their operation and maintenance procedures as outlined in the "Holloway Reservoir Operation and Maintenance Plan".
2. The Emergency Action Plan should be exercised annually and Notification List concurrently updated.
3. Small brush should be removed from the left and right embankments.
4. Minor spalls and cracks in the spillway concrete should be monitored. These do not require immediate correction, but should be planned and budgeted in the City's long term Capital Improvement Plan (CIP).
5. The seepage monitoring weirs should be placed back into operation by repairing the eroded channel. Periodic observations of seepage rates and observed fines deposition should be performed and logged for long term data comparison.
6. Warning signs on the concrete abutments should be re-painted.
7. The security fence in the downstream right embankment should be repaired.
8. Monitor the sloughed area in the downstream right embankment and repair as needed.
9. Further inspections should be performed in accordance with P.A. 451, Part 315 regulations.

HOLLOWAY DAM
CITY OF FLINT
GENESEE COUNTY, MICHIGAN

3.0 Project Information

The Holloway Dam is located on the Flint River in Richfield Township, Genesee County, Michigan (Section 11, T8N, R5E). The dam and lower one fourth of the reservoir are in Genesee County while the upper three fourths of the reservoir are in Lapeer County. The dam was built in 1954 to maintain a base flow in the Flint River for water supply and sewage dilution requirements. The Holloway Dam was previously referred to as the Richfield Storage Dam. Presently the reservoir's uses are primarily, base water flow implementation, sewage dilution and recreation. The dam consists of earth embankments and a 248 ft long gated concrete spillway structure. The total length of the dam is approximately 3,350 ft between the natural moraine banks. The top of the embankment serves as a gravel road for maintenance purposes. A steel framed walkway spans the top of the spillway structure for operation and maintenance of the gates. The embankment side slopes are 3 horizontal to 1 vertical on the upstream face and 2 horizontal to 1 vertical on the downstream face.

3.1 PERTINENT DATA

The embankment is comprised of two zones: an upstream section and key trench of compacted impervious clay; and a larger downstream section of essentially granular material, predominantly sand with some gravel.

The plans show a sheet pile cutoff wall along the full length of the dam near the upstream toe, extending 23 ft below the base of the embankment and two feet into the embankment. A subdrain system, originating just downstream of the centerline of the crest and transverse to the dam axis, is also shown. The plans indicate that this subdrain system is formed by tile drain pipes with a center-to-center drain spacing of 15 ft. Plan details indicate a graded filter surrounding the tile drain pipes. The pipes empty into a collection ditch at the toe of the downstream slope. The right embankment has been modified by installation of fill at the toe with a bench located mid point on the slope. Weep drains were extended with 6" PVC pipe.

The outlet works of the dam consist of a reinforced concrete spillway controlled by seven gates. There is a control house on each end of the spillway. A telemark water level recording gage is in the left control house.

The following is a tabulation of principal data obtained from the construction drawings.

Hazard Classification – High (per 1978 USACE report).

Length of Dam – Overall length of the dam including the concrete spillway structure and the right and left embankments is approximately 3,350 ft.

Height of Dam – The total height of the dam, defined in P.A. 451, Part 315 as the difference in elevation between the natural stream bed and the design flood elevation, is approximately 30 ft. the crest of the dam is at El. 763.0 ft.

Crest Width of Embankments – Approximately 15 ft.

Side Slopes – The earth embankments have 3.0 H to 1.0 V slopes on the upstream face and 2.0 H to 1.0 V slopes on the downstream face. The right embankment downstream slope has been modified with fill at the toe and a bench at midpoint.

Spillway: 248 ft long concrete spillway structure with:

a) two 90 ft long drum gates

b) three 20 ft long taintor gates

c) two 4 ft by 6 ft sluice gates perpendicular to the dam axis

d) 75 ft by 248 ft wide discharge apron

Cutoff: 25 ft deep steel sheet pile cutoff wall at the upstream toe of the full length of the dam, and 15 ft deep steel sheet pile cutoff wall along the downstream side of the spillway structure.

Embankments: Upstream section and key trench of compacted impervious clay and a larger downstream section of granular material, predominantly sand with some gravel.

Further details of the spillway structure and embankments are shown in **Appendix A**. These figures have been taken from the 1978 Phase I Inspection Report.

4.0 Field Inspection

An inspection of the facilities was performed by Dana M. Dougherty, PE (Stantec) on October 19, 2008. The weather on the date of inspection was clear with temperature at approximately 55°F. The impoundment elevation was near normal (summer) i.e. 755. Flow was passing over the drum gates as well as through the left (looking downstream) sluicegate.

The following items were noted: (Referenced photographs can be found in **Appendix C**.)

4.1 SPILLWAY

Overall the spillway appeared to be in excellent condition. Recent preventative maintenance work includes painting of miscellaneous metals including handrails, gates, and support beams, installation of new galvanized steel grating on the gate operator platform and patching concrete at the upper downstream end of the taintor gate piers.

Some minor items were noted with regard to concrete condition including:

1. There was spalled concrete on the top of the upstream right wingwall. The face of the wall exhibited cracking and efflorescence at this location (Ref. Photos #3 and #4).
2. There was a small crack in the right abutment immediately above the drum gate. There is no evidence of movement or displacement at this crack (Ref. Photo #6). This should be monitored.
3. Minor alligator cracking was noted in the taintor gate piers (Ref. Photos #7 and #8). These do not pose any immediate concern but should be monitored.
4. There were cracks in the left abutment and left downstream retaining walls. No displacement was noted. These cracks should be monitored for future movement (Ref. Photos #9 and #10).
5. The upper portion of the downstream end of the left downstream retaining wall has alligator cracking and effervescence. This should be monitored (Ref. Photo #12).
6. The warning signs that are painted on the upstream abutment/wingwall faces are faded and difficult to read. These should be repainted.

4.2 RIGHT EMBANKMENT

Overall the condition of the right embankment appears to be good with no significant erosion, seepage, settlement, sloughing or animal burrows noted. The following specific items were noted:

1. There was a minor amount of erosion beneath the riprap on the upstream embankment face immediately adjacent to the spillway.

2. Some brush has begun to grow on the upstream slope. This should be selectively removed (Ref Photos #14 and #16). Small natural growth such as wildflowers and grasses should remain.

3. Considerable brush was observed on the downstream embankment face and within the toe-of-slope drain. This should be removed (Ref. Photos #17 and #20).

4. For the most part weep tiles are dry. There is one section midway in the embankment where the weep tiles are active. Some sloughing of the slope was observed in this area. It appeared that this has been addressed through addition of a blanket drain with geotextile fabric. This should be monitored for further displacement.

5. A short section of the security fence was in disrepair. This should be corrected (Ref. Photo #23).

6. The seepage monitoring weir is not functioning. Flow was passing around the weir through an eroded section. This should be corrected (Ref. Photo #24).

4.3 LEFT EMBANKMENT

The observed condition of the left embankment was good to excellent. There was no evidence of significant erosion, seepage, settlement, sloughing or animal burrows. The following specific items were noted:

1. A minor amount of small brush should be removed from the downstream slope (Ref. Photo #28).

2. There was no evidence of seepage from the weep drains, however the toe-of-slope drain was flowing, in particular the final 100 ft (Ref. Photo #29).

3. The seepage monitoring weir is not functioning similar to the right side. Flow was passing around the weir through an eroded section. This should be corrected (Ref. Photo #30).

5.0 Structural Stability

The assessment of stability is based on visual observations made during our field inspection (10/19/08).

No deficiencies were noted that would impact the structural integrity of the dam; however minor items were noted that should be proactively addressed to mitigate potential future deficiencies. Over all the condition of the facility remains good.

6.0 Hydrology and Hydraulics

The MDEQ has estimated the required spillway capacity at the Holloway Dam to be 9900 cfs (reference **Appendix B**). This equates to the 200 year frequency flood which is mandated by statute – P.A. 451, Part 315, Section 324.31516.

Headwater rating curves previously produced by the USACE (1978) and Acres International (1993) indicate that this discharge capacity can be met at an impoundment elevation of approximately 755. This would allow for approximately 8 feet of freeboard. Thus, the spillway discharge capacity is sufficient to meet P.A. 451, Part 315 requirements. Furthermore, the spillway capacity at overtopping (El. 763) is approximately 40,000 cfs or ½ PMF.

The spillway capacity has also been determined with the assumption that the drum gates fail to operate and are locked in the up position (reference Ayres, Lewis, Norris & May, Inc. (ALNM) Report – 1996). The resultant 200 year impoundment elevation is computed to be approximately 761 or two feet of freeboard. Therefore, the required spillway design capacity can be met through operation of the taintor gates only.

7.0 Operation and Maintenance

The dam is operated and maintained by staff from the City of Flint Water Treatment Plant. Routine operation and maintenance is performed in accordance with the Holloway Reservoir Operation and Maintenance Plan which is on file at the City of Flint WTP.

Impoundment elevation is continuously monitored via an on-site level transducer. Instantaneous level information is available remotely to assist operations personnel in maintenance of the impoundment elevation.

During summer months, the drum gates are in a raised position and taintor gates closed. The impoundment elevation is maintained between 755.0 and 755.75 by operating the drum and/or taintor gates as needed.

The impoundment elevation is lowered in the winter to approximately elevation 751.0. The drum gates are lowered during this period.

Emergency backup power is available to operate the taintor gates in case of a power loss. An *Auxiliary Generator Power System Report is available at the WTP.*

The City has performed routine maintenance of the facilities on an "as needed" basis. The most recent work consisted of painting exposed steel components including the taintor gates and access platform support steel.

In addition to routine surveillance by operations staff, supervisor staff also performs an annual inspection of the facilities. Noted deficiencies are scheduled for correction the following year.

Appendix 6 - 2008 Utah Dam Safety Report

MICHIGAN PUBLIC ACT 451, PART 315
INSPECTION REPORT
UTAH DAM
GENESEE COUNTY, MICHIGAN
INVENTORY NUMBER 1275 – LOW HAZARD

FOR

CITY OF FLINT
WATER TREATMENT PLANT
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(810) 787-6537

BY
Stantec Consulting Michigan Inc.
Engineers – Planners – Surveyors
3959 Research Park Drive
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DANA M.
DOUGHERTY
ENGINEER
NO.
24737

INSPECTOR(S): Dana M. Dougherty – Stantec Consulting Michigan Inc.

DATE OF INSPECTION: October 19, 2008

PROFESSIONAL ENGINEER: Dana M. Dougherty, PE
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Dana M Dougherty
Dana M. Dougherty, PE #24737

Stantec
INSPECTION REPORT
UTAH DAM
CITY OF FLINT
GENESEE COUNTY, MICHIGAN

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UTAH DAM
CITY OF FLINT
GENESEE COUNTY, MICHIGAN

1.0 Purpose and Authority

The purpose of the report is to present a summary of findings for the field inspection of the Utah Dam completed by Stantec Consulting Michigan Inc. (Stantec) on October 19, 2008 pursuant to the requirements of Part 315, Dam Safety, of the Natural Resources and Environmental Protection Act, 1994 P.A. 451, Section 31518.

This dam inspection Report and associated inspection activities were commissioned by the City of Flint, Michigan, the dam owner. The Utah Dam is registered with the Michigan Department of Environmental Quality (MDEQ) as Dam Number 11275.

References in the report to "left" and "right" are based on the observer facing downstream.

2.0 Conclusions and Recommendations

The Utah Dam was inspected on October 19, 2008 in accordance with Michigan P.A. 451, Part 315 criteria. The dam was found to be in fair to poor condition. A summary of comments/recommendations is as follows:

1. The stability of the exposed portion of the structure is poor and is no longer capable of serving its intended purpose.
2. The operating components of the facility (floodgates) have been decommissioned for sometime and are no longer functional.
3. The purpose of the dam (impound water for the upstream water treatment plant) is no longer needed as the Hamilton Dam, which is located downstream, provides this capability.
4. The Hamilton Dam is currently being evaluated for potential reconstruction and should the decision be made to proceed with that project the Utah Dam will serve no useful future function.
5. The spillway hydraulic capacity is deficient with regard to P.A. 451, Part 315, Section 324.31516 rules. This is further exacerbated by the fact that the partially open gates impede high flows resulting in an increased backwater.
6. The City should consider full or partial removal of the dam. It is possible that the foundation and submerged portion of the piers may be reused to support a new pedestrian crossing bridge. The minimum removal effort would consist of removing the gates from the dam. Due to the aforementioned deficiencies and related public safety liabilities the City should take immediate action perhaps concurrent with the proposed Hamilton Dam reconstruction.

UTAH DAM
CITY OF FLINT
GENESEE COUNTY, MICHIGAN

3.0 Project Information

Utah Dam is located on the Flint River in the City of Flint, Genesee County, Michigan (T08N, R07E, Section 32) at the south end of Whaley Park. The site location map is shown in **Appendix A**.

Utah Dam is owned by the City of Flint and plans for the dam are on file with the City. It was designed by the Ambursen Dam Company of New York and San Francisco and built around 1928. The dam was constructed to maintain a reservoir at El. 711 to provide sufficient head on the City's water treatment plant intake pipe. The pool created by the dam was limited to the main channel of the Flint River. The dam was built between the two banks of the river and has a total length of 240 ft. It consists of a concrete gravity structure with six spillway bays and 4 ft wide piers. Each bay has a 12 ft high by 25 ft long vertical lift gate.

There are two bridge decks on the structure. The upper deck is approximately 11 ft wide and it is used to move the gate hoist along the length of the dam. The gate hoist travels the length of the dam on two No. 40 rails, each of which is supported by 15 inch "I' beams. The beams are supported by the piers.

The lower bridge deck is separated by the vertical lift gates. The downstream side of the deck is 7 ft wide and it serves as a pedestrian walkway. The upstream side of the deck is 5 ft wide and it is used by the operator to gain access to the upper deck via a steel ladder.

Presently, the dam serves as a walkway over the Flint River and as a backup for Hamilton dam for providing a head on the water intake pipe. The gates of Utah Dam are currently locked open above the normal backwater elevation created by Hamilton Dam, which is 2.2 miles downstream. Elevations given in this report are referenced to National Geodetic Vertical Datum.

Six spillway bays and vertical lift gates are contained within the structure. Pertinent data about Utah Dam is give below.

Height of Dam – The total height of the dam, defined in P.A. 451, Part 315 as the difference in elevation between the natural stream bed (El. 696.8 ft) and the design flood elevation (El. 717.2 ft) is approximately 20.4 ft.

Crest Width of Structure – 30 ft as measured along the lower deck.

Sill of Vertical Lift Gates – El. 697.3 ft.

Sketches of the dam are included in **Appendix A**.

4.0 Field Inspection

An inspection of the facilities was performed by Dana M. Dougherty, P.E. (Stantec) on October 19, 2008. The weather on the date of inspection was clear with temperature at approximately 55°F. The impoundment elevation was approximately 1.9 ft below normal elevation. The City was in the process of lowering the Hamilton Dam impoundment per directive from the MDEQ. This directive requires that the Hamilton Dam impoundment be lowered 3.25 ft.

The following items were noted (Reference photographs can be found in **Appendix C**):

1. The concrete condition on the downstream face of the dam is fair to poor. The right downstream retaining wall shows significant spalling in its top and outside corner. The left downstream retaining wall has significant spalling and cracking. The pier noses (three of five) are spalled. The access platform or walkway or the dam, concrete is in fair to poor condition. There is effervescence and cracking in the access platform support beams. There is no displacement. (Ref. Photos #1 and #5.)

2. The concrete condition of the upstream dam face is fair to poor. The noses of all piers show effervescence and some alligator cracking. This is also true for the right and left upstream retaining walls. There does not appear to be any substantial structural cracking in any of these members or displacement. There is spalling of concrete at the top of the piers as well as at the top of the abutment walls where the access platform rests. There is also some indication of spalling in the access platform beams and in some cases at the bottom of the beams themselves (Ref. Photos #2 and #6).

3. The gates are randomly open. The left gate, Bay No. 1, is 2 feet above the water level on this date. Bay No. 2 and No. 3 from the left, are 4 feet above water level on this date and Bay No. 4, 5, and 6 are 6.5 feet above water level. All dimensions reference water level to the bottom of the gate.

4. The superstructure appears to be in very poor condition. Concrete is in fair to poor condition. The operating platform, which housed a single moveable gantry crane for all six gates, has spalling in the beams as well as the piers. Protective railings are all intact, but in poor condition and require painting (Ref. Photos #7 and #8).

5. The top of the right embankment has a paved walkway with chain link fence on either side of the walkway. This is also true for the left embankment. There is also lighting at the site, utility poles in each embankment with a light fixture (Ref. Photos #3 and #4).

6. The embankments have some tree growth which should be removed.

7. On the date of the inspection, the water level is about 10.6 feet below the operating/walkway platform (El. 706.6 NGVD).

8. There is a 4 foot wide opening in the fence on the left downstream face of the dam, next to the utility pole, which allows access and is a safety issue. Also, the safety fencing that was installed on the upstream side of the dam, between the walkway and the gates, has been removed and is a safety issue.

5.0 Structural Stability

The assessment of stability is based on visual observations made during our field inspection (10/10/08).

The overall structural condition of the Utah Dam is categorized to be fair to poor. Substantial deteriorated concrete is evident with numerous spalls, cracks, and some exposed reinforcing steel. The superstructure concrete is in the poorest condition with the gate lift support structure no longer capable of supporting its intended function i.e. gate operation.

The condition of the access platforms and exposed portions of the piers is somewhat better than the superstructure but still would be categorized as poor. The submerged portion of the peirs and foundation were not inspected as part of this report, however experience with similar structures would imply that their condition would be better than the exposed components.

In conclusion, the Utah Dam structural stability will no longer support gate operation. Furthermore, continued use of the access platforms for pedestrian crossing will be dependent on future evaluation, repair and/or modification of those components.

UTAH DAM
CITY OF FLINT
GENESEE COUNTY, MICHIGAN

6.0 Hydrology and Hydraulics

The MDEQ has established the required spillway capacity at the Utah Dam to be 11,800 cfs (reference **Appendix B**). This equates to the 100 year frequency flood which is mandated by statute, P.A. 451, Part 315, Section 324.31516, for dams classified as low hazard such as the Utah Dam.

The hydraulic capacity of the Utah Dam is greatly impacted by the downstream Hamilton Dam. The normal impoundment elevation of the Hamilton Dam impoundment is approximately El. 708.0 (NGVD) while the gate sill elevation of the Utah Dam is 697.3. Thus, the Utah Dam is partially submerged under normal conditions.

Overtopping of the right embankment occurs at or near El. 714.0. The 1993 Acres Report (**Appendix B**) indicates that overtopping of this embankment will be experienced at flows over 7,830 cfs. The FEMA Flood Insurance Study (**Appendix B**) shows the 100 year flood elevation at the Utah Dam to be approximately El. 716.0. Thus the right embankment is overtopped under high flow conditions due to backwater impacts from the Hamilton Dam. It should be noted that the FEMA Flood Insurance Study assumes that all six gates are operable at Hamilton Dam. Since 1991 only three gates have been operable thus the backwater impact would be greater than shown on the FEMA maps.

The Utah Dam's hydraulic capacity is further diminished by the fact that the floodgates are currently locked in a partially open position. The bottom of gate elevation for each bay (numbered left to right looking downstream) is approximately:

Bay No. 1	708.5
Bays No. 2 and 3	710.5
Bays No. 4 through 6	713.0

Under high flows (100 year El. 716.0) the gates will impede flow thereby further exacerbating flood conditions.

For the above described reasons, it is concluded that the Utah Dam does not meet spillway capacity requirements as required by statute.

7.0 Operation and Maintenance

The Utah Dam is operated and maintained by staff from the City of Flint Water Treatment Plant. The floodgates are currently non-functional and are locked in a partially open position. Power has been disconnected from the gate operators. The impoundment elevation is maintained by the downstream Hamilton Dam thereby negating the usefulness of the Utah Dam.

The City staff therefore maintains a minimal surveillance effort at the dam. Minimal preventative maintenance has been performed in the recent past. It is the City's intent to remove all or a portion of the structure as funds become available. Until that time maintenance will be limited to those items necessary to insure public safety with regard to the pedestrian bridge crossing.

Appendix 7 - 2008 Hamilton Dam Safety Report

MICHIGAN PUBLIC ACT 451, PART 315
INSPECTION REPORT
HAMILTON DAM
GENESEE COUNTY, MICHIGAN
INVENTORY NUMBER 060 – HIGH HAZARD

FOR

CITY OF FLINT
WATER TREATMENT PLANT
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BY

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DATE OF INSPECTION: October 19, 2008

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Dana M. Dougherty, PE #24737

Stantec

INSPECTION REPORT
HAMILTON DAM
CITY OF FLINT
GENESEE COUNTY, MICHIGAN

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INSPECTION REPORT
HAMILTON DAM
CITY OF FLINT
GENESEE COUNTY, MICHIGAN

1.0 PURPOSE AND AUTHORITY

The purpose of this report is to present a summary of findings for the field inspection of the Hamilton Dam completed by Stantec Consulting Michigan Inc. on October 19, 2008 pursuant to the requirements of Part 315, Dam Safety, of the Natural Resources and Environmental Protection Act, 1994 P.A. 451, Section 31518.

This Dam Inspection Report and associated inspection activities were commissioned by the City of Flint, the dam owner. The Hamilton Dam is registered with the Michigan Department of Environmental Quality (MDEQ) as Dam Number 060.

References in this report to "left" and "right" are based on the observer facing downstream.

2.0 CONCLUSIONS AND RECOMMENDATIONS

The Hamilton Dam was inspected on October 19, 2008 in accordance with the Michigan P.A. 415, Part 315 criteria. The dam was found to be in poor condition which supports the conclusion found in previous dam safety reports. Specific comments/recommendations are as follows:

1. The stability of the exposed structural components including gate piers, access and operating platforms, and abutments is poor. These components are no longer capable of serving their intended purpose.
2. Three of the floodgates have been decommissioned while the reliability of the remaining gates is suspect. With three gates operating inadequate freeboard exists at the right embankment (looking downstream). In addition upstream flood elevations will be greater than those included in the FMEA Flood Insurance maps.
3. The MDEQ mandated drawdown should be adhered to until the dam is reconstructed.
4. The City should proceed immediately to implement the preferred option from the 2008 Reconstruction Feasibility Study.
5. In the interim, the City should exercise the Emergency Action Plan (EAP) annually to insure an efficient implementation when and if needed.

3.0 PROJECT INFORMATION

Hamilton Dam is located on the Flint River in downtown Flint, Michigan near the Flint Branch of the University of Michigan campus, and approximately 800 ft. upstream from the Saginaw Street Bridge.

Plans for the current dam are on file with the City of Flint, but original design data is not available. The dam was designed by Fargo Engineering Company of Jackson, Michigan, and was constructed about 1920 by Price Brothers Company of Lansing, Michigan on the site of a previous mill dam. The dam was constructed to sustain a head for the upstream water treatment plant intake.

The existing structure is a reinforced concrete gravity dam with six gated spillway bays. Each bay has a tainter gate on the fixed crest of a concrete spillway. The six bays, each 33 ft. long, and the five piers, each four feet thick, make a total length of 218 ft. There is an end sill below the spillway and an 18 ft. concrete apron beyond the end sill The gates are operated during flood flows.

The original 1920 dam had seven bays with tainter gates. In 1964, the southern (left) most gate, its spillway and headrace were removed.

A fish ladder was constructed through the right abutment sidewalls in 1978. Also in 1978, the right concrete abutment was modified to install an Archimedean screw pump.

Repairs to Hamilton Dam were carried out in the summer of 1992. Steel sheet piling was placed just upstream of the gates for Bays 1, 2 and 6 because of the deteriorated condition of the gates. The sheet piles were to maintain the headpond in case of gate failure. The top elevation of the sheet piles was placed near the top of the tainter gates (Elev. 707.8 ft.) in a closed position. Gate repairs were completed in Bays 3, 4, and 5. These repairs included the complete removal of the existing gates and replacement with new gates, repair of buttress and sill concrete, repair of gate trunnions, replacement of lift chains, and painting of all exposed gate steel.

The top deck of the structure is divided lengthwise into a pedestrian walkway and the gate hoist rails for the two gate hoists. The hoist rails consist of two "I" beams (18 inch and 15 inch) that are supported by the piers. The two hoists for raising the spillway tainter gates are driven by attached electric motors.

A U.S. Army Corps of Engineer's bronze disk is set flush with the bridge deck in the walkway at the second pier from the right end. Unless otherwise noted, data given in this report is based on the assumption that the E1 715.06 ft. elevation given for this benchmark is on National Geodetic Vertical Datum (NGVD).

The terrain near the dam and reservoir is urban and gently rolling. Five borings from the original plans show sand with an occasional pocket of clay or gravel in the soils overlying a soft sandstone which is 40 or 50 ft. below ground surface.

Six spillway bays and tainter gates make up the structure. Only Gates 3, 4 and 5 are currently operable. Sketches and pertinent data about Hamilton Dam are shown in **Appendix A**.

Hamilton Dam was classified by the U.S. Army Corp of Engineers as High Hazard in the 1980 Phase I Inspection Report. This classification remains in effect to date.

Plans for the original Dam construction in 1920 and plans for repairs performed in 1992 are on file with the City of Flint. Past inspection reports on file include the following:

- 1980 USACE, Phase I, National Dam Safety Program Report
- 1986 Ayres, Lewis, Norris & May, Inc. (ALNM) and Sublakes Diving Inspection Report
- 1988 MDNR Inspection Report
- 1989 Ayres, Lewis, Norris & May, Inc. (ALNM) Structural Evaluation and Reconstruction of Hamilton Dam Report
- 1993 Acres International Corp., Dam Inspection Report
- 1996 Ayres, Lewis, Norris & May, Inc. (ALNM) Inspection Report
- 1999 Paul C. Rizzo Associates, Inc. Dam Inspection Report
- 2000 USACE Hamilton Dam Condition Survey
- 2005 Soil & Materials Engineers, Inc. Dam Inspection Report
- 2008 Stantec Feasibility Study for Reconstruction

These reports have been consistent in their recommendations to undertake corrective action to address structural deficiencies within the facility. The 1989 Ayres, Lewis, Norris & May, Inc. (ALNM) and 2000 USACE Reports included estimated costs of $3,830,000 and $5,588,000 respectively to make the necessary improvements to insure dam safety and integrity. The 2008 Stantec Report estimated the reconstruction cost to be $4,901,000.

On March 14, 2008, acting under the authority of Part 315, Dam Safety of the Natural Resources and Environmental Protection Act, 1994 P.A. 451 as amended, the Michigan

Department of Environmental Quality issued an order to the City of Flint to drawdown the Hamilton impoundment 3.25 ft. to an elevation not greater than 705.25 NGVD for the purpose of public health, welfare and safety protection. The depth of necessary drawdown was computed by the MDEQ to eliminate the danger of loss of life downstream in the event of a sudden dam failure.

A permit under Part 301, Inland Lakes and Streams was issued for this activity on September 30, 2008. The City of Flint has subsequently abided by the conditions of this permit and has lowered the normal impoundment elevation to the prescribed elevation. It should also be noted that the MDEQ permit requires permanent deflation of the Obermeyer (Inflatable) Dam.

4.0 FIELD INSPECTION

An inspection of the facilities was performed on October 19, 2008 by Dana M. Dougherty, PE. The weather on the date of the inspection was clear with temperatures at approximately 55°F. The impoundment elevation was below normal by approximately 1.5 ft. The City was in the process of lowering the impoundment per directive from the MDEQ. This directive requires that the impoundment be lowered 3.25 ft. The floodgate in Bay #3 has been opened to accomplish this task.

The following items were noted during the field inspection (referenced photographs can be found in **Appendix C**):

1. The condition of the exposed concrete including piers, slabs, abutments is poor with numerous spalls, cracks and exposed reinforcing steel (Ref. Photos #1 through #4, #7, #8, #10).
2. The floodgates in Bays 1, 2 and 6 have been decommissioned by placement of steel sheeting across the face of these bays (Ref. Photos #2 and #8).
3. The City reports that the remaining floodgates (Bays 3 through 5) are operative, however, Bays 4 and 5 have not been operated with any frequency and thus their reliability is suspect.
4. The access walkway/platform remains closed to the public due to safety concerns (Ref. Photos #3 and #4).
5. Overall the condition of the dam continues to worsen with the structural integrity of numerous components compromised.

5.0 STRUCTURAL STABILITY

The assessment of stability is based on a visual observation made during our field inspection (10/19/08) and visual observations made during preparation of the 2008 Reconstruction Feasibility Study, as well as the 1989 condition survey (concrete corings).

The overall structural condition of the Hamilton Dam is poor. Exposed surfaces including gate piers, access and operating platforms and abutments all exhibit conditions that indicate these components have exceeded their useful life. Numerous spalls, cracks and exposed reinforcing steel exist.

In conclusion, the Hamilton Dam structural stability is deficient and thus this facility represents a potential liability with regard to public health, welfare and safety.

6.0 HYDROLOGY AND HYDRAULICS

The dam is regulated under State of Michigan P.A. 451 Part 315 statute. Guidelines that accompany this statute require high hazard potential dams with heights less than 40 ft. to be capable of passing a 200-year flood or the flood of record whichever is greater. For the Hamilton Dam, the 200-year flood controls and has been computed by the Michigan Department of Environmental Quality to be 13,000 cfs (reference **Appendix** B).

The computed maximum impoundment elevation for the 200-year flood event varies dependent on assumptions made with regard to the number of floodgates that are operative. In 1981, calculations were performed by the United States Geologic Survey and form the basis for the FEMA Flood Insurance mapping that is used to this day. The USGS assumed that all six floodgates were operational. The USACE also computed the maximum impoundment elevation in their 1981 National Dam Safety Inspection Report. They assumed that just two gates were operational due to the fact that the gates could not be locked in an open position and only two operators existed. In 1993 after decommissioning of Gates 1, 2 and 6, Acres International Corporation computed the maximum headwater elevation assuming that gates were operational in Bays 3, 4 and 5.

The results of these various studies is as follows (refer to **Appendix** B for more information):

Source	**Estimated 200-year Impoundment Elevation NGVD Datum**
1981 F.I.S. (U.S.G.S.)	709.05*
1981 Dam Safety Inspection Report (USACE)	711.6
1993 Dam Safety Inspection Report (ACRES)	712.8

** USGS added 0.95' to the computed impoundment elevation for the purpose of floodplain mapping. Therefore the floodplain mapping indicates a 200-year flood elevation of approximately 710.0 NGVD.*

It should be noted that there is uncertainty as to whether or not adequate freeboard exists at this site. The Acres report indicates that freeboard is sufficient based on the fact that the upstream right streambank area was raised in the mid 1980's. However, a recent survey conducted as part of the 2008 Reconstruction Feasibility Study indicates the elevation of this area to be similar to that shown in the 1981 USACE report i.e. ± 711.5 NGVD. Thus, it would appear that inadequate freeboard currently exists.

7.0 OPERATION AND MAINTENANCE

The Hamilton Dam is operated and maintained by staff from the City of Flint Water Treatment Plant. Floodgates in Bays 1, 2 and 6 are currently non-functional. Floodgates in the remaining bays can be operated, however their reliability is diminished due to the deteriorated condition of the operating slab.

City staff maintains the impoundment elevation by operating the gates on an as needed basis. The impoundment is currently being maintained at the MDEQ mandated level of 705.25 NGVD i.e. 3.25 ft below normal.

The City has performed minimal maintenance to the structure in anticipation of reconstruction.

Appendix 8 - Cost of Service Study – Flint Water Treatment Plant

DRAFT

Technical Memorandum
Cost of Service Study
Flint Water Treatment Plant

I. Introduction

This Technical Memorandum describes the proposed improvements needed at the Flint Water Plant to treat Flint River water on a continuous basis. The primary foundations for this evaluation were the "Water Treatment Plant Rehabilitation – Phase II" report dated December 2003 and the "Preliminary Engineering Report, Lake Huron Water Supply, Karegnondi Water Authority" dated September 2009. The findings, as presented in the following sections, address the improvements required for the water plant to produce finished water in conformance with the current federal and state drinking water regulations. In addition, operation and maintenance costs for continuous operation have been evaluated and included in order to determine the total cost associated with using the Flint River as a source of water.

Improvements, as proposed in this evaluation, along with those previously made during the Phase I improvements program, will produce a finished water quality equal to the current water quality as received from the DWSD. The design parameters are as follows:

1) Minimum Day Demand – 10-mgd
   Average Day Demand – 15-mgd (14-mgd in 2010 increasing to 15-mgd in 2050)
   Maximum Day Demand – 28-mgd

2) Turbidity – 0.20 NTU

3) Hardness – 80 to 100 mg/l as $CaCO_3$

4) Cryptosporidium – 3-Log Inactivation

5) Giardia – >3-Log Inactivation

6) Viruses – >4-Log Inactivation

7) Taste and Odor – Eliminated with pre-ozonation

8) Trihalomethanes – Less than 80 µg/l

9) HAA5 – Less than 60 µg/l

As part of this investigation, an inspection of the Flint Water Plant was performed on May 3, 2011. The purpose of this inspection was to determine if the recommendations in the Phase II report, as referenced above, needed to be revised due to changed conditions or water supply needs. Based on findings from this meeting, the major adjustment to be made is the reduction of average day demand from 20-mgd to 14-mgd and maximum day demand being reduced from 36-mgd to 28-mgd. Required improvements as recommended in this study have taken these new demands into account. The conceptual design of these new facilities would allow cost effective expansion to 36-mgd, as needed, to meet future demands.

II. Required Capital Improvements

The following describes the required improvements as required for the Flint Water Plant to operate on a continual basis using the Flint River as a water source. Most of these improvements are more fully described in the Phase II report and are not repeated to avoid duplicative effort.

A. Lime Sludge Disposal

Lime sludge is proposed to be pumped from the east and west softening basins to two new 42-ft diameter thickeners (25-ft SWD) located adjacent to the plate settling building. Decant from the thickener will flow by gravity to the primary clarifier influent channel. Thickened sludge (12% solids) will be pumped to a new plate-and-frame filter press located at the north end of the WTP 1 primary settling basin. A new two-story building would be constructed at that location to house the pumping facilities and presses. Each press, located on the second floor, will have a 225-cf per hour capacity and will drop the dewatered sludge into a first floor bunker area. The dewatered cake will be transferred to a lime storage concrete bunker located approximately 60 feet north of the sludge press building. The storage bunker (100-ft x 192-ft) will have the capacity to store three to four months of dewatered lime sludge cake. About every three months, contract haulers will remove the lime sludge and place on agricultural lands that are permitted for final disposal.

The capacities of these facilities are based on average day flow of 15-mgd, maximum day demand of 28-mgd and water quality softening requirements. Based on raw water quality data provided by the City of Flint, a lime dosage of 209 mg/l, soda ash dosage of 47 mg/l and carbon dioxide dosage of 37 mg/l were used to estimate lime sludge quantities and flows.

Opinion of Probable Cost:

Site and Access:			
Site Demolition	$ 129,000		
Roadway Improvements	$ 385,000		
Partial Settling Basin Demolition	$ 129,000		
On-site Truck Scale	$ 257,000		
Subtotal Construction:		$ 900,000	
Construction Contingencies (15%):		$ 135,000	
Design Contingencies (5%):		$ 45,000	
Engineering, Legal, Bonds & Administration (17%):		$ 153,000	
Opinion of Probable Cost:			**$ 1,233,000**

Thickener Basins - 42 ft Diameter:			
Two Thickener Mechanisms	$ 310,000		
Two Concrete Basins (25 ft SWD)	$ 513,000		
Two Geodesic Dome Covers	$ 180,000		
Install Equipment	$ 257,000		
Site Work	$ 97,000		
Utilities, Piping and Process	$ 193,000		
Subtotal Construction:		$ 1,550,000	
Construction Contingencies (15%):		$ 232,500	
Design Contingencies (5%):		$ 77,500	
Engineering, Legal, Bonds & Administration (17%):		$ 263,500	
Opinion of Probable Cost:			**$ 2,124,000**

Filter Presses and Building:

Two-225 cf Plate & Frame Press	$ 1,650,000		
Building (70 ft x 60 ft)	$ 3,331,000		
MEP	$ 1,089,000		
Site Utilities	$ 129,000		
Subtotal Construction:		$ 6,199,000	
Construction Contingencies (15%):		$ 929,850	
Design Contingencies (5%):		$ 309,950	
Engineering, Legal, Bonds & Administration (17%):		$ 1,053,830	
Opinion of Probable Cost:			**$ 8,493,000**

Lime Storage Bunker and Site Work:

12 ft Concrete Walls and Slab	$ 833,000		
Frame and Fabric Building Cover	$ 325,000		
Site Improvements	$ 385,000		
Front End Loader (5 cyd)	$ 308,000		
Site Utilities	$ 513,000		
Subtotal Construction:		$ 2,364,000	
Construction Contingencies (15%):		$ 354,600	
Design Contingencies (5%):		$ 118,200	
Engineering, Legal, Bonds & Administration (17%):		$ 401,880	
Opinion of Probable Cost:			**$ 3,239,000**
Total for Lime Disposal :			**$ 15,089,000**

B. Soda Ash Feed System

In order to remove the non-carbonate hardness, soda ash will be needed to meet the finished water hardness concentrations. Two new 800 #/hour feeders will be needed to meet the dosage requirements. Each of these feeders will be connected to the existing silos.

Opinion of Probable Cost:

Demolition of Existing Feeders	$ 20,000		
Two 800 #/hr Feeders	$ 112,000		
MEP	$ 109,000		
Chemical	$ 77,000		
New Pneumatic Fill System	$ 58,000		
Subtotal Construction:		$ 376,000	
Construction Contingencies (15%):		$ 56,400	
Design Contingencies (5%):		$ 18,800	
Engineering, Legal, Bonds & Administration (17%):		$ 63,920	
Opinion of Probable Cost:			**$ 516,000**

C. Additional Chemical Storage

During the Phase I improvements, the MDEQ did not mandate 30-day chemical bulk storage requirements since the plant was a redundant water supply to the DWSD. However, if the facility becomes a continuously operated treatment plant, then additional chemical storage must be added to meet the minimum storage volume requirements. To comply with the regulations, new oxygen, nitrogen and carbon dioxide storage facilities must be provided as follows.

Liquid Carbon Dioxide:
    Capacity – 34 tons
    Vaporizer – 750 #/hour @ 300 psig
    Piping – Schedule 80 Carbon Steel and Schedule 40 - 304L Stainless Steel

Liquid Oxygen
    Capacity – 9000 gallons
    Operating pressure – 75 psi
    Feed Rate – 175 scfm
    Piping – Type K Copper

Liquid Nitrogen
    Capacity – 540 gallons
    Operating pressure – 100 psi
    Feed Rate – 1 scfm
    Piping – Type K Copper

Opinion of Probable Cost:

Carbon Dioxide Storage Facilities	$	328,000		
MEP	$	103,000		
Oxygen & Nitrogen Storage Facilities	$	961,000		
MEP	$	109,000		
Subtotal Construction:			$	1,501,000
Construction Contingencies (15%):			$	225,150
Design Contingencies (5%):			$	75,050
Engineering, Legal, Bonds & Administration (17%):			$	255,170
Opinion of Probable Cost:			**$**	**2,057,000**

D. Electrical and SCADA Improvements

Section 9, relating to power and controls, of the Phase II study was prepared by Dmytryka Jacobs Engineers (DJE). The scope of the Phase II work did not include detailed investigations of the water plant site-wide power distribution nor the secondary power distribution within each of the facility structures. However, a number of observations and basic recommendations were presented in Section 9 by DJE.

The Flint Water Plant currently uses 2400V as primary power throughout the facility. All of the power feeders in the plant site are 5kV rated and it appears the existing switchgear is also rated at 5kV. Most of the major electrical improvements installed during Phase I were dual voltage (2400/4160) equipment in anticipation of the plant power being changed to 4160V in the near future. This change would allow the existing network of power feeders to handle approximately twice the power and would eliminate running new feeders to various portions of the plant.

The current sub-station has two 2.5MVA transformers running in parallel for a total capacity 5 MVA. These old transformers are not equipped with cooling fans. The full connected load to these transformers is estimated to be 6.97 MVA while the estimated power load at 36 MGD is 4.22MVA. Based on these estimates there is sufficient power for the plant with both sub-station transformers in service. Even though the transformers are owned by Consumers Energy, it could take weeks to replace one of these main transformers in the event of a unit failure, which will result in reduced treatment and pumping capacity. The sub-station switchgear was installed in 1960 and is antiquated and difficult to maintain.

The two existing Fairbanks Morse generators are currently inoperable and would cost approximately $1M to rehabilitate. The DJE team recommended installing two new emergency generators in lieu of re-building the existing units.

Section 9 of the Phase II report provides sufficient detail for the purposes of this report, but a detailed electric system evaluation of the entire plant should be performed prior to any major improvements to this facility.

While LAN did not perform a detailed review of the WTP electrical system during our site visit, it appears that all of the DJE findings are still pertinent. We, therefore, concur with the improvements as recommended by DJE in the Phase I report.

Opinion of Probable Cost:

Substation Upgrade	$	961,000		
Standby Power Generation	$	2,242,000		
Pump Station No. 4 Upgrade	$	1,365,000		
Filter Press Building Feeder	$	87,000		
WTP SCADA, Equipment & Programming	$	720,000		
Telemetry System Equipment & Programming	$	103,000		
Computers, Software & Training	$	155,000		
Filter Transfer PS Power Feeders	$	135,000		
Emergency PS Power Feeders	$	145,000		
Subtotal Construction:			$	5,913,000
Construction Contingencies (15%):			$	886,950
Design Contingencies (5%):			$	295,650
Engineering, Legal, Bonds & Administration (17%):			$	1,005,210
Opinion of Probable Cost:			**$**	**8,101,000**

E. Post-Chlorination and Zebra Mussel Control

The previous report recommended changing the disinfection system from gaseous chlorine to sodium hypochlorite due to the potential for hazardous gas release and the requirements imposed by new federal regulations. Previous treatability studies have not addressed the potential impact of re-growth in the system due to ozonation by-products. These impacts should be addressed prior to proceeding with final plans for using river water.

The Flint River is known to be infested with Zebra mussels and mitigation measures will have to be implemented if the plant is placed into continuous operation. A sodium permanganate feed system is proposed to address these concerns.

Opinion of Probable Cost:

Demolition of Existing Equipment	$ 39,000	
Storage Tanks	$ 9,000	
Metering Pumps and Tables	$ 11,000	
Piping, Valves & Tables	$ 9,000	
Containment	$ 59,000	
Installation	$ 108,000	
Subtotal Construction:		$ 235,000
Construction Contingencies (15%):		$ 35,250
Design Contingencies (5%):		$ 11,750
Engineering, Legal, Bonds & Administration (17%):		$ 39,950
Opinion of Probable Cost:		**$ 322,000**

F. Security Issues

For water plant security issues, please refer to City of Flint Vulnerability Assessment. Details are omitted in this report due to confidentiality.

Not available at the time of the previous report, a source water monitoring system is included in the study due to recent advancements in technology. The proposed system design is based on Hach Model SC1000, equipped with UVAS, NH4D, pH, ORP, turbidity and DO probes.

Opinion of Probable Cost:

Security Improvements	$ 145,000	
Source Water Monitoring System	$ 95,000	
Subtotal Construction:		$ 240,000
Construction Contingencies (15%):		$ 36,000
Design Contingencies (5%):		$ 12,000
Engineering, Legal, Bonds & Administration (17%):		$ 40,800
Opinion of Probable Cost:		**$ 329,000**

G. PS No. 4 - Low and High Service Pumps

Section 7 of the Phase II report included recommendations to replace two of the low lift pumps and two of the high lift pumps along with various other improvements. During the site visit, it was apparent the condition of this facility has continued to deteriorate. Furthermore, with the reduction in water system demands, the various pump capacities are no longer properly sized to efficiently meet the new plant flow ranges. The pumps and motors are oversized and are operating outside their best efficiency ranges and should be replaced due to age, condition and cost to operate.

Additionally, some of these pumps cannot be operated due to excessive vibrations in the shaft and steady bearings. Existing vibration monitors are functioning as designed and are shutting the power off to the motors to avoid damage.

For low lift service, it is proposed to install two 10-mgd and two 15-mgd (nominal ratings) vertically mounted pumps equipped with low voltage inverter duty motors. The motors would be powered by low voltage variable frequency drives. This will provide a firm rated capacity of approximately 35-mgd in low lift capacity.

For high lift service, it is proposed to install one 10-mgd, two 15-mgd and one 20-mgd (nominal ratings) pumps equipped with medium voltage inverter duty motors. These motors will be power by medium voltage variable frequency drives. This combination of pumps will provide a firm rated capacity of 40-mgd.

Opinion of Probable Cost:

Demolition of Existing Equipment	$	135,000		
Install Two (2) 10 MGD @ 40 ft of TDH Vertically Mounted Pumps with 125 HP, 480 V Inverter Duty Motor with 20 ft of Shaft & Steady Bearings	$	473,000		
Install Two (2) 15 MGD @ 40 ft of TDH Vertically Mounted Pumps with 150 HP, 480 V Inverter Duty Motor with 20 ft of Shaft & Steady Bearings	$	495,000		
Install One (1) 10 MGD @ 190 ft of TDH Vertically Mounted Pump with 450 HP, 4160 V Inverter Duty Motor with 20 ft of Shaft & Steady Bearings	$	245,000		
Install Two (2) 15 MGD @ 190 ft of TDH Vertically Mounted Pumps with 700 HP, 4160 V Inverter Duty Motor with 20 ft of Shaft & Steady Bearings	$	520,000		
Install One (1) 20 MGD @ 190 ft of TDH Vertically Mounted Pump with 800 HP, 4160 V Inverter Duty Motor with 20 ft of Shaft & Steady Bearings	$	285,000		
Piping, Valves, Supports & Bearings	$	480,000		
Intermediate Platforms, Ladders & Stairs	$	360,000		
Ventilation & Boiler Systems	$	340,000		
Install Three (3) Low Voltage VFD Units	$	85,000		
Install Four (4) Medium Voltage VFD Units	$	2,250,000		
Subtotal Construction:			$	5,668,000
Construction Contingencies (15%):			$	850,200
Design Contingencies (5%):			$	283,400
Engineering, Legal, Bonds & Administration (17%):			$	963,560

Opinion of Probable Cost: $ 7,766,000

H. Filter Transfer Station to Dort Reservoir and UV Inactivation

Under the requirements as outlined in the USEPA drinking water regulations addressing potential microbial contaminants, additional treatment technologies and enhancement of existing processes must be implemented to comply with these regulations.

As required under the enhanced surface water treatment rules, it is essential for water utilities to address giardia, cryptosporidium, viruses and bacteria in finished water. The level of treatment is dependent on the source water classification. The City of Flint will need to perform a two-year source water study to determine the bin placement for the Flint River. For the purposes of this report, a Bin 4 placement was selected due to the nature of the watershed and, therefore, it is assumed enhanced Ct and UV inactivation will be required.

Reservoir No. 3 does not provide sufficient Ct to meet the current regulations, therefore, Dort Reservoir will need to be placed into the process train. Since Dort Reservoir does not match the hydraulic profile of the plant, an intermediate pump station will be required. This new facility will also include a UV inactivation system to comply with the enhanced water quality regulations.

This proposed facility, located west of the filters and south of Dort Reservoir, will house three 14-mgd (nominal rating) variable speed pumps with inverter duty, low voltage motors for a firm rated capacity of 28-mgd. Housed in a separate part of this same structure will be the UV system that will be equipped with three 12" medium pressure units with a rated capacity of 28-mgd.

Opinion of Probable Cost:

Site Work & Utilities	$ 77,000	
Building (80 ft x 60 ft)	$ 1,440,000	
Three (3) 14 MGD @ 40 ft of TDH, Vertically Mounted Pumps with 150 HP, 480 V Inverter Duty Motor	$ 535,000	
MEP	$ 940,000	
Valves and Controls	$ 205,000	
Install Three (3) 12" MP UV Units	$ 590,000	
UV Piping & Controls	$ 368,000	
Ventilation & Boiler Systems	$ 165,000	
Install Three (3) Low Voltage VFD Units	$ 85,000	
Piping Connections	$ 125,000	
200 ft of 30" Water Main	$ 200,000	
600 ft of 36" Water Main	$ 420,000	
Subtotal Construction:		$ 5,150,000
Construction Contingencies (15%):		$ 772,500
Design Contingencies (5%):		$ 257,500
Engineering, Legal, Bonds & Administration (17%):		$ 875,500

Opinion of Probable Cost: $ 7,056,000

I. Emergency Interconnect Pumping Station

The City of Flint and Genesee County DWWS have entered into an agreement to provide 8-mgd of back-up service to each other under emergency conditions. There are several alternatives for pumping station locations and configurations to accomplish this interconnect. For the purposes of this report, a station located west of the filter building was selected as the most practical from and operational cost perspective. While the opinions of cost presented below indicate that these pumps will be housed in their own structure, it is feasible to house the pumps in the filter transfer station for potential savings.

Preliminary design for this pumping station include two constant speed 8-mgd pumps equipped with soft starts and medium voltage motors. A reverse flow control station will be included within the same structure to allow for flow from the DWWS to assist the City of Flint. Approximately three miles of 24-inch pipeline will be needed to connect the two systems.
Opinion of Probable Cost:

Site Work & Utilities	$	90,000		
Building (32 ft x 24 ft)	$	245,000		
Install Two (2) 8 MGD @ 290 ft of TDH, Vertically Mounted Pumps with 600 HP, 4160V Motor	$	380,000		
MEP	$	335,000		
Valves and Controls	$	128,000		
Reverse Flow Control Station	$	110,000		
Ventilation Systems	$	35,000		
16000 ft of 24" Water Main	$	4,992,000		
Subtotal Construction:			$	6,315,000
Construction Contingencies (15%):			$	947,250
Design Contingencies (5%):			$	315,750
Engineering, Legal, Bonds & Administration (17%):			$	1,073,550
Opinion of Probable Cost:			**$**	**8,652,000**

The opinions of capital cost presented in the preceding sections are tied to an ENR Index of 8688 to match the September 2009 Lake Huron Water Supply Report. Furthermore, the contingency percentages included with each opinion of cost are the same as in the September 2009 report. The total opinion of probable project cost of these proposed improvements is as follows:

Lime Sludge Disposal	$	15,089,000
Soda Ash Feed System	$	516,000
Additional Chemical Storage	$	2,057,000
Electrical and SCADA Improvements	$	8,101,000
Post-Chlorination and Zebra Mussel Control	$	322,000
Security Issues	$	329,000
PS No. 4 - Low & High Service Pumps	$	7,766,000
Filter Transfer Pumping Station & UV	$	7,056,000
Emergency Interconnect Pumping Station	$	8,652,000
Total Opinion of Probable Project Cost:	**$**	**49,888,000**

III. Cost of Additional Operation

The City of Flint currently operates the water treatment plant periodically during the year to maintain the systems and to meet regulatory requirements. The water treatment plant is staffed with various classifications of employees to operate and maintain the facility for these minimal operations.

As part of this work, and to develop all costs of providing water service from the Flint River, it is necessary to determine the probable cost for operating and maintaining this facility for continuous operation. Water quality differences between the Flint River and Lake Huron are significant and require different treatment chemicals and dosages. Most noticeable is the fact that Lake Huron water does not require softening which negates the need for softening process and the associated lime sludge disposal.

The primary cost parameters that are included in this difference are labor, chemicals, residual disposal and electrical power. Each will be discussed in the following sections. These costs were projected through the year 2050.

A. Labor

Additional staffing was discussed and developed with representatives from the City of Flint to provide full time coverage on a 24/7/365 schedule, plus provide staff for residual management and operations of the various dams. Hourly rates and fringe benefits were based on current budget figures and inflated at a rate of 3% for future costs. The following table outlines the proposed staffing a cost for this operational element.

Classification	Number	Cost/Hr	Hrs/Year	Total	Fringe (%)	Total
Operators	12	$ 20.00	2080	$ 499,200	90.40%	$ 950,477
Maintenance	4	$ 25.00	2080	$ 208,000	90.40%	$ 396,032
Laboratory QA/QC	2	$ 24.00	2080	$ 99,840	90.40%	$ 190,095
Laboratory SDWA	2	$ 20.00	2080	$ 83,200	90.40%	$ 158,413
Planned Overtime	NA	MIXED	8320	$ 178,048	90.40%	$ 339,003

This estimate represents approximately $2,034,000 per year of additional labor.

B. Chemicals

Chemical costs are based on the projected average day water demand of 14-mgd and the average dose for each of the chemicals based on the raw water quality information and other operational records. Further, data from the previous treatability work performed during the Phase I improvements was also incorporated into these estimates. Chemical suppliers and other water utilities were contacted to obtain current chemical purchase costs which were adjusted by the ENR ratio back to an index of 8688. Where necessary, transportation costs to the Flint, MI area were included. The following summarizes the chemical costs associated with treating the Flint River water.

Chemical	Dose(mg/l)	Cost/#	Cost/ MGD
Ferric	44.50	$0.24	$89.07
Lime	209.00	$0.10	$174.31
Soda Ash	47.00	$0.29	$113.67
CO_2	37.00	$0.10	$30.86
Cl_2	3.00	$0.34	$8.51
Fluoride	1.00	$0.33	$2.75
Phosphate*	1.00	$0.51	$4.25
		Cost per MGD	$423.42

*Costs range from $0.51 to $0.96 per pound

In addition to the above, the cost of ozone will need to be added which is approximately $20.08 per million gallons per day per mg/l dose. This cost includes oxygen, nitrogen and power costs.

C. Residual Disposal

This category is divided into two groups: clarifier sludge collected in the plate settling basins and lime sludge from the softening process. The clarifier sludge is pumped from the clarifier basins by zone (six zones per train, three trains, total of 18 zones) to the plant main drain. As part of the Phase I work, the main drain was connected to a new wastewater pumping station located south of the filter gallery building. This pump station discharges the collected residuals to the city's sanitary sewer system. Nearly all of the filter wash water is recirculated back to the head of the ozone facility for re-use.

The cost to treat clarified sludge discharged into the sanitary sewer system is calculated as follows:

Plate Clarifier Sludge	
Flow (MGD)	14
SS (mg/l)	75
Primary Sludge (#/d	13,435
% Solids	2%
Sludge (gals/day)	80,500
Sludge (cf/day)	10,762

Based on the City of Flint's current wastewater charges of $1.00 per 100 cf, the annual cost would be $39,200 per year.

Lime/Soda Ash softening generates large quantities of residual wastes that have high disposal costs. The treatment proposed in this study involves pumping the sludge, at about 4% concentration, from the softening basins to two gravity thickeners, where it will concentrate to about 12% solids. After thickening, sludge will be pumped to the filter presses to be dewatered to approximately 55% solids. The filter presses will drop the cake into a lower bunker where it will be removed by an end loader to the main storage bunker. About every three months, the sludge will be loaded onto trucks and applied to agricultural land.

The volume of sludge is estimated as follows:

Sludge Production from Clarifier

Reaction	meq/l	meq/l as $CaCO_3$	meq/l as $Mg(OH)_2$
CO_2	0.25	0.25	0
$Ca(HCO_3)_2$	4.65	9.30	0
$Mg(HCO_3)_2$	0.30	0.60	0.30
$MgSO_4$	0.89	0.89	0.89
Excess Lime	1.25	1.25	0
	Total meq/l	12.28	1.19
	Less Practical Limits meg/l	0.60	0.20
	Precipitate Produced meq/l	11.68	0.99
	Precipitate Produced mg/l	584	49
	Precipitate Produced #/MG	4872	412
	Total #/MG	5284	

WTP Flow (MGD)	14	27		
Dry Sludge Production in #/day	73,983	142,681		
@ 4% Solids (gals/day)	221,771	427,701		
@ 12% Solids (gals/day)	73,924	142,567		
@ 12% Solids (gals/week)	517,466	997,970		
Dry Sludge Production (tons/week)	259		SG $CaCO_3$	2.71
Number of Hours per Week to Press	48		SG $Mg(OH)_2$	2.36
Dry Sludge Processed (#/hr)	10,789		SG solids	2.68
@ 55% Solids Sludge Processed (#/hr)	19,617			
55% Solids Sludge (#/cy)	2571		Sludge Solids =	55% as $CaCO_3$
@ 55% Solids Sludge Processed (cf/hr)	206		Sludge Unit Wt. =	95.22 pcf

Based on the preceding, 471 tons of softening sludge at 55% solids will be handled each week based on average flow and chemical dosage. Several Michigan water facilities were contacted to obtain lime sludge hauling and disposal costs. From this data a rate of $18.50 per wet ton was selected as a reasonable rate for disposal cost. This rate will result in an annual cost of $453,000.

D. Power

Practically all of the additional power costs are associated with low lift, intermediate transfer and high service pumping. Additional power costs will be used for process and handling of the softening sludge. The City of Flint is currently paying $0.07 per kwhr for service at the water plant. Power costs are calculated as follows:

TDH (ft) - High	190
TDH (ft) - Filter Transfer	40
TDH (ft) - Low	40
TDH Total (ft)	270
Pump Eff. (W to W)	80.00%
$/kwhr	$0.070
Pumping Cost Per MGD	$99.51
Solids Handling per MGD	$4.98
Total Power Cost per MGD	$104.49

Annual costs associated with the operation and maintenance of the Flint Water Plant are summarized in the attached tables following this section.

IV. Project Implementation Schedule

There are a number of issues that will impact the implementation schedule for this work. The source water studies to define bin number associated with cryptosporidium and giardia will take approximately two years. Part of these studies can be performed concurrently with design, but sufficient work will need to be performed to avoid impacting design schedule or work. A planning period of one year should be allowed for preliminary water quality and regulatory evaluations prior to initiating design work. Design of this project will require 10 to 12 months, with an additional three months required for permitting. After permits are received, allow three months for bidding and contract execution. Major equipment procurement and construction will take from 24 to 30 months. Plant commissioning will take about 2 months.

Total time required from notice to proceed to project completion 52 months to 60 months. This time frame does not include financing issues.

To: Porter, Andrea[porter.andrea@epa.gov]; Deltoral, Miguel[deltoral.miguel@epa.gov]; Crooks, Jennifer[crooks.jennifer@epa.gov]; Kuefler, Janet[kuefler.janet@epa.gov]; King, Carol[King.Carol@epa.gov]; Glowacki, Joanna[glowacki.joanna@epa.gov]; Thompson, Robert[thompson.robertl@epa.gov]; Harris, Kimberly[harris.kimberly@epa.gov]; Murphy, Thomas[murphy.thomas@epa.gov]; Damato, Nicholas[damato.nicholas@epa.gov]; Poy, Thomas[poy.thomas@epa.gov]; Bair, Rita[bair.rita@epa.gov]
From: Shoven, Heather
Sent: Tue 12/15/2015 4:45:49 PM
Subject: FYI: Washington Post Article today - In Flint, Mich., there's so much lead in children's blood that a state of emergency is declared

https://www.washingtonpost.com/news/morning-mix/wp/2015/12/15/toxic-water-soaring-lead-levels-in-childrens-blood-create-state-of-emergency-in-flint-mich/

In Flint, Mich., there's so much lead in children's blood that a state of emergency is declared

By Yanan Wang December 15 at 4:31 AM

For months, worried parents in Flint, Mich., arrived at their pediatricians' offices in droves. Holding a toddler by the hand or an infant in their arms, they all have the same question: Are their children being poisoned?

To find out, all it takes is a prick of the finger, a small letting of blood. If tests come back positive, the potentially severe consequences are far more difficult to discern.

That's how lead works. It leaves its mark quietly, with a virtually invisible trail. But years later, when a child shows signs of a learning disability or behavioral issues, lead's prior presence in the bloodstream suddenly becomes inescapable.

According to the World Health Organization, "lead affects children's brain development resulting in reduced intelligence quotient (IQ), behavioral changes such as shortening of attention span and increased antisocial behavior, and reduced educational attainment. Lead exposure also causes anemia, hypertension, renal impairment, immunotoxicity and toxicity to the reproductive organs. The neurological and behavioral effects of lead are believed to be irreversible."

The Hurley Medical Center, in Flint, released a study in September that confirmed what many

Flint parents had feared for over a year: The proportion of infants and children with above-average levels of lead in their blood has nearly doubled since the city switched from the Detroit water system to using the Flint River as its water source, in 2014.

The crisis reached a nadir Monday night, when Flint Mayor Karen Weaver declared a state of emergency.

“The City of Flint has experienced a Manmade disaster,” Weaver said in a declaratory statement.

The mayor — elected after her predecessor, Dayne Walling, experienced fallout from his administration’s handling of the water problems — said in the statement that she was seeking support from the federal government to deal with the “irreversible” effects of lead exposure on the city’s children. Weaver thinks that these health consequences will lead to a greater need for special education and mental health services, as well as developments in the juvenile justice system.

“Do we meet the criteria [for a disaster area]? I don’t know,” she told Michigan Live. But Weaver doesn’t think the city can receive the help it needs without alerting federal officials to the urgency of the matter.

To those living in Flint, the announcement may feel as if it has been a long time coming.

Almost immediately after the city started drawing from the Flint River in April 2014, residents began complaining about the water, which they said was cloudy in appearance and emitted a foul odor.

Since then, complications from the water coming from the Flint River have only piled up. Although city and state officials initially denied that the water was unsafe, the state issued a notice informing Flint residents that their water contained unlawful levels of trihalomethanes, a chlorine byproduct linked to cancer and other diseases.

Protesters marched to City Hall in the fierce Michigan cold, calling for officials to reconnect

Flint's water to the Detroit system. The use of the Flint River was supposed to be temporary, set to end in 2016 after a pipeline to Lake Huron's Karegnondi Water Authority is finished.

A petition lobbying for the ending the city's Flint River water supply garnered 26,000 signatures.

Through continued demonstrations by Flint residents and mounting scientific evidence of the water's toxins, city and state officials offered various solutions — from asking residents to boil their water to providing them with water filters — in an attempt to work around the need to reconnect to the Detroit system.

That call was finally made by Gov. Rick Snyder (R) on Oct. 8. He announced that he had a plan for coming up with the $12 million to switch Flint back to the Detroit system. On Oct. 16, water started flowing again from Detroit to Flint.

This, too, was accompanied by the sense that it had come too late, particularly for the parents of children who may have been permanently affected.

These parents and other Flint residents filed a class-action federal lawsuit against Snyder, the state, the city and 13 other public officials in November for the damages they have suffered as a result of the lead-tainted water. The suit, which claims to represent "tens of thousands of residents," alleges that the city and state officials "deliberately deprived" them of their 14th Amendment rights by replacing formerly safe drinking water with a cheaper alternative that was known to be highly toxic.

"For more than 18 months, state and local government officials ignored irrefutable evidence that the water pumped from the Flint River exposed [residents] to extreme toxicity," the complaint reads. "The deliberately false denials about the safety of the Flint River water was as deadly as it was arrogant."

Calling officials' conduct "so egregious and so outrageous that it shocks the conscience," the complaint cites the specific experiences of a few plaintiffs and their families, all of whom allege they have been challenged by similar health ailments since high levels of lead and copper entered their bloodstreams.

These conditions include skin lesions, hair loss, chemical-induced hypertension, vision loss and depression. Of the four families described in the complaint, two had ceased to drink Flint water after a certain point — and used it only for washing and cooking — but still said they were exposed to many of the same ill effects.

As the Detroit Free Press reported in October, avoiding Flint water became a way of life for the city's residents.

Those who could afford it opted for bottled water, buying it by the gallons. Those who couldn't spare the money drank it straight from the tap all the same, knowing that they would be paying for it later. When it came to bathing, some slowly filled bathtubs with pots of boiled water for their children.

LeeAnn Walters, a Flint resident and mother of 4-year-old twins, took every precaution after blood tests revealed that the level of lead in one of her sons had soared after the switch to Flint River.

"I was hysterical," Walters told the Free Press. "I cried when they gave me my first lead report."

She had feared lead was the problem when her whole family developed rashes and her son stopped gaining weight.

Now, Walters said, when her children experience problems as they grow up, she will always wonder whether things would have been different — if their lives would have been better — if it weren't for the water.

To: Hedman, Susan[hedman.susan@epa.gov]
Cc: Hyde, Tinka[hyde.tinka@epa.gov]; Rowan, Anne[rowan.anne@epa.gov]
From: Kelley, Jeff
Sent: Tue 12/15/2015 5:00:28 PM
Subject: Al Jazeera inquiry about Flint

HQ sent us this draft response to an Al Jazeera this morning … they need us to provide input on several of the questions. This version has supposedly been reviewed by Joel Beauvais. Anne has handed hard copies of the inquiry to the task force members (they're all on a conference call now).

Would you like to discuss this at the beginning of your 11:30 briefing? (Anne and I will both need to leave at noon to take the mandatory EEO training.)

Jeff Kelley
Director, Office of External Communications
U.S. EPA Region 5
ph: 312-353-1159

From: Lee, Monica
Sent: Tuesday, December 15, 2015 9:57 AM
To: Kelley, Jeff <kelley.jeff@epa.gov>; Rowan, Anne <rowan.anne@epa.gov>
Subject: FW: TRAVIS REVIEW: MEDIA INQUIRY: Flint questions

Jeff/Anne – need to get these answers on Flint to Al Jazeera ASAP. I've noted which ones we need your team to answer and which ones we just need sign off on. Thanks.

1. Can you shed some light on what guidance was sent to the state in regard to appropriate testing for lead levels?

Need R5 to answer

2. • [Need R5 edits.] At all times during this water crisis, was the City of Flint properly

following federal rules when testing the water and informing the public about possible lead concerns in the water? Was the City of Flint properly testing for Lead and Copper in the water?

During the course of the water crisis, the city of Flint was found to be in violation of several National Primary Drinking Water Regulations, including the xx rules, but was not in violation of the Lead and Copper Rule. EPA has established a technical task force to assist the city and state with ensuing that corrosion control in the system is re-optimized as quickly as possible.

3 – [Need R5 input since you all would have provided input to MI on the recommended testing protocols.] The director of Michigan's Department of Environmental Quality indicated that at some point during Michigan's testing the EPA sent out guidance about the approved testing protocol they were using. It was testing protocol that he now says he feels was not putting the public health first. Can you shed some light on what guidance was sent to the state in regard to appropriate testing for lead levels?

Without knowing which guidance is specifically referenced, EPA cannot provide the clarification requested in the question. However, guidance has been provided to all primacy agencies regarding collecting samples and calculating compliance(http://www.epa.gov/dwreginfo/lead-and-copper-rule-compliance-help-primacy-agencies#clarifiaction) .Furthermore, additional guidance regarding LCR compliance for primacy agencies is also available (http://www.epa.gov/dwreginfo/lead-and-copper-rule-compliance-help-primacy-agencies#clarifiaction)

4: [Need R5 edits.] According to Federal rules, should the City of Flint have had corrosion control in place prior to switching its water source from Detroit to the Flint River?

In accordance with federal rules, the City of Flint ensured corrosion control was in place prior to switching its water source from Detroit to the Flint River. However, the steps that the City of Flint was required to take upon switching sources from Detroit Water were not clearly addressed by the LCR (specifically, how corrosion control treatment should be maintained when a community switches to a new source of water). To clarify these steps, on

November 3, 2015, EPA issued a memorandum that clarifies corrosion control practices.

5: [Need R5 edits.] Lastly, Marc Edwards' testing methods (using wide-mouth sampling containers etc) were much different than the state's (using narrow sampling containers.) Were they both acceptable under the federal rules during the testing, and are they both currently acceptable under the rules today?

EPA's sampling collection methods for lead can be found in 40 CFR 141.86. Currently, the regulations do not specify the type of sampling container required, and while the use of a narrow-mouth container may not be the easiest protocol for collecting samples, this approach is acceptable under the rule.

Mary Schollhamer

Acting Deputy Director of Communications

Office of Water

U.S. Environmental Protection Agency

Office: 202-564-5759

Mobile: 202-853-5317

schollhamer.mary@epa.gov

Begin forwarded message:

From: "Lee, Monica" <Lee.Monica@epa.gov>
Date: December 14, 2015 at 5:21:10 PM EST
To: "Schollhamer, Mary" <Schollhamer.Mary@epa.gov>
Cc: "Loop, Travis" <Loop.Travis@epa.gov>
Subject: RE: URGENT: MEDIA INQUIRY: Flint questions

That's fine but let's get the responses we need cleared by the region sent over tonight.

-----Original Message-----
From: Schollhamer, Mary
Sent: Monday, December 14, 2015 5:02 PM

To: Lee, Monica <Lee.Monica@epa.gov>
Cc: Loop, Travis <Loop.Travis@epa.gov>
Subject: RE: URGENT: MEDIA INQUIRY: Flint questions

Hi Monica,

Is it okay if this slips to tomorrow? They're such sensitive responses that - even if I get a response in the next hour - I'd really prefer if we gave Joel the opportunity to review.

Also, related, I think we're going to have to ask Region 5 to weigh in on #1 and #3. We've drafted a general response, but I think it'll need to go to them for comment.

Mary G Schollhamer
Acting Deputy Director of Communications Office of Water U.S. Environmental Protection Agency
Office: 202-564-5759
Mobile: 202-853-5317
schollhamer.mary@epa.gov

-----Original Message-----
From: Schollhamer, Mary
Sent: Monday, December 14, 2015 3:12 PM
To: Lee, Monica <Lee.Monica@epa.gov>
Cc: Loop, Travis <Loop.Travis@epa.gov>
Subject: RE: URGENT: MEDIA INQUIRY: Flint questions

No. Sorry, we're reviewing a draft now. I'll send it asap.

Mary G Schollhamer
Acting Deputy Director of Communications Office of Water U.S. Environmental Protection Agency
Office: 202-564-5759
Mobile: 202-853-5317
schollhamer.mary@epa.gov

-----Original Message-----
From: Lee, Monica
Sent: Monday, December 14, 2015 3:10 PM
To: Schollhamer, Mary <Schollhamer.Mary@epa.gov>
Cc: Loop, Travis <Loop.Travis@epa.gov>
Subject: RE: URGENT: MEDIA INQUIRY: Flint questions

Sorry if I missed it but did we get answers here?

-----Original Message-----
From: Schollhamer, Mary
Sent: Monday, December 14, 2015 9:57 AM
To: Lee, Monica <Lee.Monica@epa.gov>
Cc: Loop, Travis <Loop.Travis@epa.gov>
Subject: RE: URGENT: MEDIA INQUIRY: Flint questions

Monica, the program needs a little more time to clear the responses to these questions. I'll send them as soon as possible, but it looks like it'll be around the noon-timeframe. Does that work?

Mary G Schollhamer
Acting Deputy Director of Communications Office of Water U.S. Environmental Protection Agency
Office: 202-564-5759
Mobile: 202-853-5317
schollhamer.mary@epa.gov

-----Original Message-----
From: Schollhamer, Mary
Sent: Friday, December 11, 2015 3:22 PM
To: Lee, Monica <Lee.Monica@epa.gov>
Cc: Loop, Travis <Loop.Travis@epa.gov>
Subject: RE: URGENT: MEDIA INQUIRY: Flint questions

Thanks and thanks.

Mary G Schollhamer
Acting Deputy Director of Communications Office of Water U.S. Environmental Protection Agency
Office: 202-564-5759
Mobile: 202-853-5317
schollhamer.mary@epa.gov

-----Original Message-----
From: Lee, Monica
Sent: Friday, December 11, 2015 3:19 PM
To: Schollhamer, Mary <Schollhamer.Mary@epa.gov>
Cc: Loop, Travis <Loop.Travis@epa.gov>
Subject: RE: URGENT: MEDIA INQUIRY: Flint questions

Early Monday will work - they also sent these additional questions:

The director of Michigan's Department of Environmental Quality indicated that at some point during Michigan's testing the EPA sent out guidance about the approved testing protocol they were using.

It was testing protocol that he now says he feels was not putting the public health first.

Can you shed some light on what guidance was sent to the state in regard to appropriate testing for lead levels?

Lastly, Marc Edwards' testing methods (using wide-mouth sampling containers etc) were much different than the state's (using narrow sampling containers.)

Were they both acceptable under the federal rules during the testing, and are they both currently acceptable under the rules today?

-----Original Message-----
From: Schollhamer, Mary
Sent: Friday, December 11, 2015 2:58 PM
To: Lee, Monica <Lee.Monica@epa.gov>
Cc: Loop, Travis <Loop.Travis@epa.gov>
Subject: FW: URGENT: MEDIA INQUIRY: Flint questions

Hi Monica, It looks like they won't be able to clear the response by COB. Would early Monday work?

Mary G Schollhamer
Acting Deputy Director of Communications Office of Water U.S. Environmental Protection Agency
Office: 202-564-5759
Mobile: 202-853-5317
schollhamer.mary@epa.gov

-----Original Message-----
From: Lee, Monica
Sent: Friday, December 11, 2015 2:44 PM
To: Schollhamer, Mary <Schollhamer.Mary@epa.gov>
Subject: Flint questions

Hey Mary - can you help me get these questions answered for Al Jazeera by COB? I think we have answers to these somewhere, so shouldn't be hard to pull together.. Thanks!

1 – At all times during this water crisis, was the City of Flint properly following federal rules when testing the water and informing the public about possible lead concerns in the water? Was the City of Flint properly testing for Lead and Copper

in the water?

2 – According to Federal rules, should the City of Flint have had corrosion control in place prior to switching its water source from Detroit to the Flint River?

Monica Lee
(202) 713-6902

To: Ellis, Jerry[Ellis.Jerry@epa.gov]; Adams, Darryl[Adams.Darryl@epa.gov]; Banks, Victoria[Banks.Victoria@epa.gov]; Bell, Aaron L.[Bell.Aaron@epa.gov]; Cantilli, Robert[Cantilli.Robert@epa.gov]; Christ, Lisa[Christ.Lisa@epa.gov]; Clement, Robert[Clement.Robert@epa.gov]; Damico, Brian[Damico.Brian@epa.gov]; Darman, Leslie[Darman.Leslie@epa.gov]; Deason, Ken[Deason.Ken@epa.gov]; Deltoral, Miguel[deltoral.miguel@epa.gov]; Donahue, Lisa[Donahue.Lisa@epa.gov]; Donohue, Joyce[Donohue.Joyce@epa.gov]; Farber, Glenn[Farber.Glenn@epa.gov]; Fultz, Christopher[Fultz.Christopher@epa.gov]; Gambatese, Jason[Gambatese.Jason@epa.gov]; Georges, Jessica[Georges.Jessica@epa.gov]; Goldberg, Michael[Goldberg.Michael@epa.gov]; Gray, Fredianne[Gray.Fredianne@epa.gov]; Guignet, Dennis[Guignet.Dennis@epa.gov]; Helm, Erik[Helm.Erik@epa.gov]; Kempic, Jeffrey[Kempic.Jeffrey@epa.gov]; King, Carol[King.Carol@epa.gov]; Kwong, Ellie[kwong.ellie@epa.gov]; Lee, Bessie[Lee.Bessie@epa.gov]; Lytle, Darren[Lytle.Darren@epa.gov]; Marshall, Wendy[marshall.wendy@epa.gov]; Mehta, Suril[Mehta.Suril@epa.gov]; Mlachak, Shirley[Mlachak.Shirley@epa.gov]; Palagian, Evangelia[Palagian.Evangelia@epa.gov]; Poon, Robert[poon.robert@epa.gov]; Porter, Andrea[porter.andrea@epa.gov]; Rasso, Mark[Rasso.Mark@epa.gov]; Rizzo, George[Rizzo.George@epa.gov]; Schock, Michael[Schock.Michael@epa.gov]; Smith, Brian[Smith.Brian@epa.gov]; Smith, Lameka[Smith.Lameka@epa.gov]; Viveiros, Edward[Viveiros.Edward@epa.gov]
Cc: Burneson, Eric[Burneson.Eric@epa.gov]; Greene, Ashley[Greene.Ashley@epa.gov]
From: Shao, Nicole
Sent: Tue 12/15/2015 6:17:29 PM
Subject: Washington Post Article on Flint Michigan State of Emergency

LCR Workgroup,

FYI – In case you have not seen this yet.

https://www.washingtonpost.com/news/morning-mix/wp/2015/12/15/toxic-water-soaring-lead-levels-in-childrens-blood-create-state-of-emergency-in-flint-mich/?hpid=hp_hp-top-table-main_michigan-820am%3Ahomepage%2Fstory

Nicole

Nicole Shao

US EPA, ORD-Office of Science Policy

1200 Pennsylvania Avenue, NW (8104R)

Washington, DC 20460

(202) 564-6779

From: Ellis, Jerry
Sent: Monday, November 16, 2015 11:38 AM
To: Adams, Darryl <Adams.Darryl@epa.gov>; Banks, Victoria <Banks.Victoria@epa.gov>; Bell, Aaron L. <Bell.Aaron@epa.gov>; Cantilli, Robert <Cantilli.Robert@epa.gov>; Christ, Lisa <Christ.Lisa@epa.gov>; Clement, Robert <Clement.Robert@epa.gov>; Damico, Brian <Damico.Brian@epa.gov>; Darman, Leslie <Darman.Leslie@epa.gov>; Deason, Ken <Deason.Ken@epa.gov>; Deltoral, Miguel <deltoral.miguel@epa.gov>; Donahue, Lisa <Donahue.Lisa@epa.gov>; Donohue, Joyce <Donohue.Joyce@epa.gov>; Farber, Glenn <Farber.Glenn@epa.gov>; Fultz, Christopher <Fultz.Christopher@epa.gov>; Gambatese, Jason <Gambatese.Jason@epa.gov>; Georges, Jessica <Georges.Jessica@epa.gov>; Goldberg, Michael <Goldberg.Michael@epa.gov>; Gray, Fredianne <Gray.Fredianne@epa.gov>; Guignet, Dennis <Guignet.Dennis@epa.gov>; Helm, Erik <Helm.Erik@epa.gov>; Kempic, Jeffrey <Kempic.Jeffrey@epa.gov>; King, Carol <King.Carol@epa.gov>; Kwong, Ellie <kwong.ellie@epa.gov>; Lee, Bessie <Lee.Bessie@epa.gov>; Lytle, Darren <Lytle.Darren@epa.gov>; Marshall, Wendy <marshall.wendy@epa.gov>; Mehta, Suril <Mehta.Suril@epa.gov>; Mlachak, Shirley <Mlachak.Shirley@epa.gov>; Palagian, Evangelia <Palagian.Evangelia@epa.gov>; Poon, Robert <poon.robert@epa.gov>; Porter, Andrea <porter.andrea@epa.gov>; Rasso, Mark <Rasso.Mark@epa.gov>; Rizzo, George <Rizzo.George@epa.gov>; Schock, Michael <Schock.Michael@epa.gov>; Shao, Nicole <Shao.Nicole@epa.gov>; Smith, Brian <Smith.Brian@epa.gov>; Smith, Lameka <Smith.Lameka@epa.gov>; Viveiros, Edward <Viveiros.Edward@epa.gov>
Cc: Burneson, Eric <Burneson.Eric@epa.gov>; Greene, Ashley <Greene.Ashley@epa.gov>
Subject: Agenda and location of the NDWAC meeting this week

Workgroup members, agenda and details of the meeting is below. The meeting place is at the **Crystal City Marriott** (not to be confused with the Crystal Gateway Marriott). The hotel is a short walk away from the Crystal City metro station.

http://www.marriott.com/hotels/maps/travel/wascc-crystal-city-marriott-at-reagan-national-airport/

Summary

On November 2, 2015, the U.S. Environmental Protection Agency (EPA) announced a meeting of the National Drinking Water Advisory Council (NDWAC) in the Federal Register, as authorized under the Safe Drinking Water Act. This notice announces the location of the meeting (see the ADDRESSES section of this notice). The meeting is scheduled for November 17, 18 and 19, 2015. During this meeting, the NDWAC will focus discussions on developing recommendations for the EPA Administrator on the Lead and Copper National Primary Drinking Water Regulation—Long Term Revisions.

Dates

The meeting on November 17, 2015, will be held from 8:30 a.m. to 4:15 p.m.; November 18, 2015, from 8 a.m. to 5 p.m.; and November 19, 2015, from 8 a.m. to noon, eastern standard time.

Addresses

The public meeting will be held at the Crystal City Marriott at Reagan National Airport, 1999 Jefferson Davis Highway, Arlington, Virginia 22202.

Jerry L. Ellis, Jr.

Environmental Scientist

U.S. Environmental Protection Agency

Standards and Risk Management Division

Office of Ground Water and Drinking Water

1200 Pennsylvania Ave. (4607M), N.W.

Washington, D.C. 20460

Phone: 202-564-2766

To: Hedman, Susan[hedman.susan@epa.gov]; Kaplan, Robert[kaplan.robert@epa.gov]; Hyde, Tinka[hyde.tinka@epa.gov]; Henry, Timothy[henry.timothy@epa.gov]; Poy, Thomas[poy.thomas@epa.gov]
Cc: Deamer, Eileen[deamer.eileen@epa.gov]; Beckmann, Ronna Erin[beckmann.ronna@epa.gov]
From: Fortin, Denise
Sent: Tue 12/15/2015 6:23:03 PM
Subject: Sen. Peters: Lead-Free Drinking Water Act: TA requested

FYI

Denise Fortin

Congressional Liaison

Office of Regional Administrator

U.S. Environmental Protection Agency

312-886-9859

From: Davis, CatherineM
Sent: Tuesday, December 15, 2015 12:21 PM
To: Johnson, Bentley (Peters) <Bentley_Johnson@peters.senate.gov>; Corcoran, Connor (Peters) <Connor_Corcoran@peters.senate.gov>; Fortin, Denise <Fortin.Denise@epa.gov>
Subject: RE: Lead-Free Drinking Water Act: TA requested

Hi Bentley,

Thanks, this is very helpful! We'll work on it in that order. Once I get a sense of our timeline for getting you the TA, I'll circle back.

You're correct on Section 7. The Reduction of Lead in Drinking Water Act addressed the definition of "lead-free" plumbing, solder, etc. The law went into effect at the beginning of 2014. EPA has a website that provides information: http://www.epa.gov/dwstandardsregulations/section-1417-safe-drinking-water-act-prohibition-use-lead-pipes-solder-and

Regards,

Cathy Davis

Office of Congressional and

Intergovernmental Relations

202-564-2703

davis.catherinem@epa.gov

Send mail to:

US Environmental Protection Agency

1200 Pennsylvania Ave, NW

MC: 1305A

Washington, DC 20460

From: Johnson, Bentley (Peters) [mailto:Bentley_Johnson@peters.senate.gov]
Sent: Tuesday, December 15, 2015 1:12 PM
To: Corcoran, Connor (Peters) <Connor_Corcoran@peters.senate.gov>; Davis, CatherineM <Davis.CatherineM@epa.gov>; Fortin, Denise <Fortin.Denise@epa.gov>
Subject: RE: Lead-Free Drinking Water Act: TA requested

Hi Cathy and Denise,

To help facilitate the TA, we prioritized the sections in this bill, starting with the most important from our perspective and then descending in importance. Feel free to send along TA as you finish it, or you may send along TA in waves, a few sections at a time.

•□□□□□□□□ Section 2 – Revision of National Primary Drinking Water Regulations for Lead

•□□□□□□□□ Section 4 – Public Notice and Education

•□□□□□□□□ Section 8 – Lead in Schools

•□□□□□□□□ Section 5 – Additional Provisions: providing filters, lead testing in federal buildings, national-wide “reboot” lead test, monitoring and corrosion control revisions to drinking water regulations

•□□□□□□□□ Section 3 – Service Line Replacement

•□□□□□□□□ Section 6 – Service Line Replacement Fund

It is our understanding that in the 111th Congress, legislation was passed regarding Section 7 of the bill, to address lead in solders, fluxes, plumbing fitting and fixtures, etc.

Thanks again.

-Bentley

From: Corcoran, Connor (Peters)
Sent: Monday, December 14, 2015 10:39 AM
To: Davis, CatherineM <Davis.CatherineM@epa.gov>; Fortin, Denise <Fortin.Denise@epa.gov>
Cc: Johnson, Bentley (Peters) <Bentley_Johnson@peters.senate.gov>
Subject: RE: Lead-Free Drinking Water Act: TA requested

Great, thank you Cathy!

Connor Corcoran

Legislative Correspondent

Senator Gary C. Peters

Office: (202) 224-6221

From: Davis, CatherineM [mailto:Davis.CatherineM@epa.gov]
Sent: Monday, December 14, 2015 10:25 AM
To: Corcoran, Connor (Peters) <Connor_Corcoran@peters.senate.gov>; Fortin, Denise <Fortin.Denise@epa.gov>
Cc: Johnson, Bentley (Peters) <Bentley_Johnson@peters.senate.gov>
Subject: Re: Lead-Free Drinking Water Act: TA requested

Hi Connor,

Thank you for your TA request. I am checking with our program folks, and I will get back to you soon.

Regards,

Cathy Davis

Office of Congressional and Intergovernmental Relations

Office: 202-564-2703

Mobile: 202-573-1704

Email: davis.catherinem@epa.gov

Send mail to:

US Environmental Protection Agency

1200 Pennsylvania Ave, NW

MC: 1305A

Washington, DC 20460

From: Corcoran, Connor (Peters) <Connor_Corcoran@peters.senate.gov>

Sent: Friday, December 11, 2015 2:23 PM
To: Fortin, Denise; Davis, CatherineM
Cc: Johnson, Bentley (Peters)
Subject: Lead-Free Drinking Water Act: TA requested

Hi Cathy and Denise,

We are looking at various ways to ensure that what happened in Flint does not happen again in Michigan or across the country. Senator Peters is very concerned about providing lead-free drinking water, monitoring our water systems, and notifying/educating the public about the serious adverse health effects of lead in drinking water.

After the discovery of widespread lead contamination in Washington, D.C. drinking water, the Lead-Free Drinking Water Act was introduced in the 109th and the 110th Congress, which offered various proposals to amend the Safe Drinking Water Act to ensure safe, lead-free drinking water.

We realize that some provisions may now be redundant, out-of-date, or simply unfeasible. Senator Peters requests technical assistance and/or feedback as soon as possible on the Lead-Free Drinking Water Act, and specifically what provisions would be relevant today. If EPA has any views that were made public back when the bill was introduced in 2005 or in 2007, we would be interested in reading those as well. The 109th Congress version is attached.

Thank you for your work on this.

Connor Corcoran

Legislative Correspondent

Senator Gary C. Peters

Office: (202) 224-6221

To: Bair, Rita[bair.rita@epa.gov]; Poy, Thomas[poy.thomas@epa.gov]; Damato, Nicholas[damato.nicholas@epa.gov]; Deltoral, Miguel[deltoral.miguel@epa.gov]; Porter, Andrea[porter.andrea@epa.gov]; Noureldin, Mostafa[noureldin.mostafa@epa.gov]; Shoven, Heather[shoven.heather@epa.gov]; Crooks, Jennifer[crooks.jennifer@epa.gov]
From: Harris, Kimberly
Sent: Tue 12/15/2015 7:11:33 PM
Subject: Conversation with MDHHS regarding draft Phosphate Factsheet

INTERNAL COMMUNICATIONS

Hi everyone,

In order to improve internal communication re: Flint activities, avoid duplication and prevent inconsistent messaging, Tom Poy and Rita would like to begin weekly Flint meetings (first meeting-TBD). Also, they agreed that those involved with Flint should cc or bcc each other on all related emails as FYI. I've started a list to help identify those who should be included in email listing.

Tom P., Rita, Nick, Miguel, Andrea, Mostafa, Heather, Jennifer, Kim

Please let me know if I've missed someone.

Just FYI on Flint stuff that I've been working on...

-Yesterday, I spoke with Linda Dykema, Division Director of the MDHHS, who confirmed that her office – along with USEPA-Cinc (Mike Shock and Darryl Lyttle), Genesee County Health Department, and ATSDR, developed a phosphate factsheet. Although the draft has been reviewed by all organizations for technical accuracy, the factsheet is still in their communication's office awaiting approval. She shared the draft with me but strongly requested that we not distribute it outside of EPA. She hopes the factsheet will be released soon but couldn't give a timeframe.

-Prior to learning about the MDHHS factsheet, Tim Henry asked that I develop an EPA health statement re: phosphates. I have a strong draft and will have OW/OST review and finalize the language to help with future inquiries (especiallly if the MDHHS factsheet is not available soon). What I've developed is not in conflict with their info (see below).

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- I contacted NSF and asked if they had consumer-friendly info to distribute regarding the toxicological evaluation of phosphate products. They said that they would work on it provided I send a formal request to their office (done!).

DRAFT HEALTH STATEMENT

Why is phosphate added to drinking water?

Public water systems commonly add phosphate to drinking water to minimize the release of lead from pipes. Phosphate works by forming a protective coating on the inside of pipes and household plumbing. This coating acts as a liner to keep corrosive water from dissolving the lead into the drinking water.

What is phosphate?

Phosphate, a salt of phosphoric acid, is a natural mineral found in rocks. It is an essential nutrient and naturally present in foods (such as dairy products, meat, poultry and nuts). In addition, it has been used for decades as a food ingredient and has wide commercial application in such items as cleaning products, toothpaste, fire extinguishers, and fertilizers.

How much is added to my drinking water?

Phosphate must be maintained at proper levels to ensure that lead is reduced. The target levels will vary depending on the system design and distribution system. Typically, phosphate levels are between 0.5 and 3.0 milligrams per liter (PO_4^{3-}).

Are there health risks?

EPA believes that the addition of phosphate poses little health risks at the dose required for lead reduction. Higher phosphate levels are found in food and soft drinks (e.g., colas) than in tap water. Most importantly, the potential health benefit from decreased lead levels is much greater in comparison to the negligible risk from phosphates. In addition, FDA regulates phosphate in food and considers it, "generally recognized as safe" and unlikely to cause adverse effects.

How do we know if these chemicals are safe?

The American National Standards Institute (ANSI) and the National Sanitation Foundation (NSF) have developed standards to certify the safety of chemicals used in drinking water. Phosphate products are certified additives under the *NSF Standard 60* and as such, required to undergo a complete analysis including a toxicological evaluation. More information can be found at: http://www.phosphatesfacts.org/pdfs/NSF_International_Statement_-_Phosphate_Treatment_Chemicals.pdf

To: Poy, Thomas[poy.thomas@epa.gov]; Deltoral, Miguel[deltoral.miguel@epa.gov]
Cc: Hyde, Tinka[hyde.tinka@epa.gov]
From: Henry, Timothy
Sent: Tue 12/15/2015 7:40:57 PM
Subject: Draft Statement about shake-down

Hey guys, please see below -- does this make sense? If so we can share it more widely for comment. Let's come up with an alternative to "shake-down". Miguel – I think we should get your idea about running the plant off the Detroit water into the discussion somewhere down the road. I think it would confuse things right now.

#####

The Flint drinking water treatment plant will need to be run through a "shake-down" period using KWA supplied water, before the water is distributed to the public. Flint will need to work with their consultant and MDEQ to define the parameters against which the plant performance will be assessed to define a successful outcome (i.e., define objective performance criteria). KWA water should not be distributed to the public until those criteria are satisfied.

During the shake-down period Flint will need to distribute to the public water from an alternate source; as water is already received from Detroit (Great Lakes Water Authority), that is an obvious choice for that interim period. How long the shake-down period lasts is a function of how long it takes the system to consistently meet the performance criteria. EPA has been informed that an objective of the Flint water plant will be to produce treated water that "mimics" the quality of the water received from Detroit; there are benefits to establishing this as an performance criterion as described below.

Flint and its consultant can complete a number of assessments prior to the completion of the KWA source that may help expedite the shake-down process and we encourage them to do so. For example, bench top jar tests using similar source water are planned and will help to establish operating parameters for the treatment plant processes. Assessment of corrosion control treatment using Detroit source water may be transferrable to the KWA source water if the Flint treatment plant produces water of comparable quality to the Detroit water; this could limit the amount of time in shake-down needed to assess performance of corrosion control treatment. EPA is planning to work with the city to set up pipe loops at the Flint treatment plant and we are targeting having them in place to assess ongoing corrosion control treatment in January 2016.

Tim Henry
Deputy Director, Water Division
U.S. EPA (W-15J)
77 W. Jackson Blvd., Chicago, IL 60604-3590
Phone: 312.886.6107 Fax: 312.692.2578

To: Henry, Timothy[henry.timothy@epa.gov]; Poy, Thomas[poy.thomas@epa.gov]
Cc: Hyde, Tinka[hyde.tinka@epa.gov]
From: Deltoral, Miguel
Sent: Tue 12/15/2015 8:17:03 PM
Subject: RE: Draft Statement about shake-down

See suggested edits below…

Miguel A. Del Toral

Regulations Manager

Ground Water and Drinking Water Branch

77 West Jackson Blvd (WG-15J)

Chicago, IL 60604

Phone: (312) 886-5253

From: Henry, Timothy
Sent: Tuesday, December 15, 2015 1:41 PM
To: Poy, Thomas <poy.thomas@epa.gov>; Deltoral, Miguel <deltoral.miguel@epa.gov>
Cc: Hyde, Tinka <hyde.tinka@epa.gov>
Subject: Draft Statement about shake-down

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Flint and its consultant can complete a number of assessments prior to the completion of the KWA pipeline and availability of the Huron source water that may help expedite the ~~shake-down~~ performance evaluation process and we encourage them to do so. For example, bench top jar tests using similar source water are planned and will help to establish operating parameters for the treatment plant processes. Assessment of corrosion control treatment using Detroit source water in advance of switching to the KWA source may also be transferrable to the KWA source water if the Flint treatment plant produces water of comparable quality and chemistry to the Detroit water; this could limit the amount of time ~~in shake-down~~ needed to assess performance of corrosion control treatment. EPA is planning to work with the city to set up pipe loops at the Flint treatment plant and we are targeting having them in place to assess ongoing corrosion control treatment in January 2016.

Tim Henry
Deputy Director, Water Division
U.S. EPA (W-15J)
77 W. Jackson Blvd., Chicago, IL 60604-3590
Phone: 312.886.6107 Fax: 312.692.2578

To: Deltoral, Miguel[deltoral.miguel@epa.gov]
Cc: Poy, Thomas[poy.thomas@epa.gov]; Hyde, Tinka[hyde.tinka@epa.gov]
From: Henry, Timothy
Sent: Tue 12/15/2015 8:19:40 PM
Subject: Re: Draft Statement about shake-down

Excellent.

Tim Henry
Deputy Director, Water Division
US EPA Region V
312-886-6107 (office)
312-296-0690 (cell)

Sent from my iPhone

On Dec 15, 2015, at 14:17, Deltoral, Miguel <deltoral.miguel@epa.gov> wrote:

> See suggested edits below…
>
> Miguel A. Del Toral
>
> Regulations Manager
>
> Ground Water and Drinking Water Branch
>
> 77 West Jackson Blvd (WG-15J)
>
> Chicago, IL 60604
>
> Phone: (312) 886-5253
>
> **From:** Henry, Timothy
> **Sent:** Tuesday, December 15, 2015 1:41 PM
> **To:** Poy, Thomas <poy.thomas@epa.gov>; Deltoral, Miguel <deltoral.miguel@epa.gov>
> **Cc:** Hyde, Tinka <hyde.tinka@epa.gov>
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77 W. Jackson Blvd., Chicago, IL 60604-3590
Phone: 312.886.6107 Fax: 312.692.2578

To: Henry, Timothy[henry.timothy@epa.gov]; Deltoral, Miguel[deltoral.miguel@epa.gov]
Cc: Hyde, Tinka[hyde.tinka@epa.gov]
From: Poy, Thomas
Sent: Tue 12/15/2015 8:45:24 PM
Subject: RE: Draft Statement about shake-down

Tim: Some minor edits.

Tom Poy

Chief, Ground Water and Drinking Water Branch

USEPA - Region 5

(312) 886-5991

From: Henry, Timothy
Sent: Tuesday, December 15, 2015 1:41 PM
To: Poy, Thomas <poy.thomas@epa.gov>; Deltoral, Miguel <deltoral.miguel@epa.gov>
Cc: Hyde, Tinka <hyde.tinka@epa.gov>
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To: Harris, Kimberly[harris.kimberly@epa.gov]; Bair, Rita[bair.rita@epa.gov]; Poy, Thomas[poy.thomas@epa.gov]; Damato, Nicholas[damato.nicholas@epa.gov]; Deltoral, Miguel[deltoral.miguel@epa.gov]; Porter, Andrea[porter.andrea@epa.gov]; Crooks, Jennifer[crooks.jennifer@epa.gov]; Kuefler, Janet[kuefler.janet@epa.gov]; Bosscher, Valerie[bosscher.valerie@epa.gov]
From: Shoven, Heather
Sent: Tue 12/15/2015 9:09:27 PM
Subject: RE: Conversation with MDHHS regarding draft Phosphate Factsheet

Thanks Kim! I checked in with Tom Poy and he referred me to Rita's weekly Flint debrief meeting list for the Flint cc/bcc mail group. The group is Tom Poy, Nick, Rita, Miguel, Heather, Jennifer, Andrea, Janet, Val, and Kim.

Best wishes,

Heather

Heather A. Shoven | Enforcement Team Leader | U.S. Environmental Protection Agency, Region 5

Ground Water and Drinking Water Branch | 77 W. Jackson Blvd (WG-15J) | Chicago, IL 60604 | 312-886-0153

From: Harris, Kimberly
Sent: Tuesday, December 15, 2015 1:12 PM
To: Bair, Rita <bair.rita@epa.gov>; Poy, Thomas <poy.thomas@epa.gov>; Damato, Nicholas <damato.nicholas@epa.gov>; Deltoral, Miguel <deltoral.miguel@epa.gov>; Porter, Andrea <porter.andrea@epa.gov>; Noureldin, Mostafa <noureldin.mostafa@epa.gov>; Shoven, Heather <shoven.heather@epa.gov>; Crooks, Jennifer <crooks.jennifer@epa.gov>
Subject: Conversation with MDHHS regarding draft Phosphate Factsheet

INTERNAL COMMUNICATIONS

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To: Susan Hedman[Hedman.Susan@epa.gov]
From: Kaplan, Robert
Sent: Tue 12/15/2015 9:40:52 PM
Subject: FW: Pipe Rig Funding Needs

Pls see below.

Robert Kaplan

Deputy Regional Administrator

U.S. EPA Region 5

Phone: (312) 886-1499

Cell: (312) 515-9827

Fax: (312) 692-2075

From: Henry, Timothy
Sent: Tuesday, December 15, 2015 3:39 PM
To: Kaplan, Robert <kaplan.robert@epa.gov>
Subject: Pipe Rig Funding Needs

The $30K sought is to allow for the construction of a pipe loop rig at the Flint Treatment Plant. The following describes the assessment work that will be done using the rig. Additional funds will be required to complete all the work described.

Corrosion Control Treatment Optimization Evaluations

The corrosion control treatment optimization evaluations are necessarily separated into two stages. The first stage is intended to optimize corrosion control treatment with the current water source and water quality conditions. The second stage is designed to prepare for the transition to the new water source (KWA Pipeline) and water quality conditions, and to ensure that the City of Flint is able to simultaneously comply with all National Primary Drinking Water Regulations following the transition to the new source.

Short-Term (Current) Lead Release Optimization Evaluation. A lead pipe rig system will be constructed at the Flint water treatment plant with exhumed lead pipes, carefully collected and installed into the pipe rig. EPA-ORD will provide technical assistance in the rig design and construction, as well as the design provisions for chemical additions. One to two people will be required to be on-site to perform periodic chemical analyses and operate and maintain the pipe rig system, as well as to troubleshoot/repair any problems and to collect samples. Laboratory instruments for pH and colorimetric tests (chlorine residual, orthophosphate) will be needed on site. It is anticipated that the design will include a “control” loop and loops with possibly 3-4 different dosages, in duplicate. The estimated sampling frequency would be at least three times per week, using ICP for metals and ICP-MS for lead on each sample, with one complete characterization sample before each stagnation period. Filtration apparatus will also be needed.

Tim Henry
Deputy Director, Water Division
U.S. EPA (W-15J)
77 W. Jackson Blvd., Chicago, IL 60604-3590
Phone: 312.886.6107 Fax: 312.692.2578

To: Harris, Kimberly[harris.kimberly@epa.gov]; Thomas Poy[Poy.Thomas@epa.gov]; Damato, Nicholas[damato.nicholas@epa.gov]; Bair, Rita[bair.rita@epa.gov]; Shoven, Heather[shoven.heather@epa.gov]; Kuefler, Janet[kuefler.janet@epa.gov]; Deltoral, Miguel[deltoral.miguel@epa.gov]; Val Bosscher[bosscher.valerie@epa.gov]; Porter, Andrea[porter.andrea@epa.gov]
From: Crooks, Jennifer
Sent: Tue 12/15/2015 9:46:10 PM
Subject: RE: weblink and MDHHS Env. Health General Number

Linda Dykema already KNEW about the Wash Post article; I guess Genessee County was not happy with the delays of getting this fact sheet finalized, so they just gave it to the mayor. She said she didn't need the info I had collected on Phosphates, since the draft is going thru review.

She said she has weekly calls with Genessee County Health Dept (Thursdays), and she will check with the County on the status of their plan to have Americorp volunteers walk door to door in Flint to distribute voluntary consumer education. I said I would contact her Monday to check in with her on this project.

FYI, Linda Dykema's direct line is Personal Phone / Ex. 6 She said she will be working Mon, Tues,Wed next week.

Jennifer

From: Harris, Kimberly
Sent: Tuesday, December 15, 2015 3:33 PM
To: Crooks, Jennifer <crooks.jennifer@epa.gov>
Subject: weblink and MDHHS Env. Health General Number

Hi Jen,

Here's the link.

https://www.washingtonpost.com/news/morning-mix/wp/2015/12/15/toxic-water-soaring-lead-levels-in-childrens-blood-create-state-of-emergency-in-flint-mich/

(517) 335-8350

General Number to MDHHS Env. Health

****

Kimberly Harris

Health Effects Specialist/Bacteriologist

U.S. EPA-Region 5

77 W. Jackson Boulevard

Chicago, Illinois 60604

(312) 886-4239

harris.kimberly@epa.gov

To: Kaplan, Robert[kaplan.robert@epa.gov]
From: Hedman, Susan
Sent: Tue 12/15/2015 10:00:26 PM
Subject: FW: Funding for Flint Task Force

FYI

From: Hedman, Susan
Sent: Tuesday, December 15, 2015 4:00 PM
To: Burke, Thomas <Burke.Thomas@epa.gov>
Subject: Funding for Flint Task Force

Hi Tom –

A couple of weeks ago I spoke to you about a request from the Flint Safe Drinking Water Task Force to cover the cost of construction of a pipe loop rig at the Flint Treatment Plant to assess the effectiveness of corrosion control treatment. The Task Force has an urgent need for $30K to build the pipe rig and to conduct the first stage of testing to assess the effectiveness of corrosion control treatment being used in connection with water supplied from Detroit by the Great Lakes Water Authority. Would it be possible for Cindy to provide Darren Lytle and Michael Shock with access to this funding by the end of the week? Additional funding may be required to complete the second stage of testing, which will be conducted to prepare for transition to the new source of water supplied by the Karegnondi Water Authority – but we can discuss that after the holidays.

Here’s a description of the work that the Task Force plans to do:

Corrosion Control Treatment Optimization Evaluations

The corrosion control treatment optimization evaluations are necessarily separated into two stages. The first stage is intended to optimize corrosion control treatment with the current water source and water quality conditions. The second stage is designed to prepare for the transition to the new water source (KWA Pipeline) and water quality conditions, and to ensure that the City of Flint is able to simultaneously comply with all National Primary Drinking Water Regulations following the transition to the new source.

Short-Term (Current) Lead Release Optimization Evaluation. A lead pipe rig system will be constructed at the Flint water treatment plant with exhumed lead pipes, carefully collected and installed into the pipe rig. EPA-ORD will provide technical assistance in the rig design and construction, as well as the design provisions for chemical additions. One to two people will be required to be on-site to perform periodic chemical analyses and operate and maintain the pipe rig system, as well as to troubleshoot/repair any problems and to collect samples. Laboratory instruments for pH and colorimetric tests (chlorine residual, orthophosphate) will be needed on site. It is anticipated that the design will include a “control” loop and loops with possibly 3-4 different dosages, in duplicate. The estimated sampling frequency would be at least three times per week, using ICP for metals and ICP-MS for lead on each sample, with one complete characterization sample before each stagnation period. Filtration apparatus will also be needed.

Thanks in advance for your help with this,

Susan

Susan Hedman

Region 5 Administrator/Great Lakes National Program Manager

U.S. Environmental Protection Agency

77 West Jackson Blvd - 19th Floor

Chicago, Illinois 60604-3590

To: Bosscher, Valerie[bosscher.valerie@epa.gov]; Poy, Thomas[poy.thomas@epa.gov]
Cc: Porter, Andrea[porter.andrea@epa.gov]
From: Deltoral, Miguel
Sent: Wed 12/16/2015 11:12:19 AM
Subject: RE: Flint River Study

Yep, we have it. There were two issues that started to get mixed up, but have been straightened out. The first was whether anyone suggested or planned corrosion control for the interim period on Flint River water, and then whether anyone has actually initiated corrosion control studies for the transition from the Flint River to KWA/Lake Huron.

It will be good to have the weekly branch meetings on Flint so that we can keep folks updated on what's going on.

Miguel A. Del Toral
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Phone: (312) 886-5253

From: Bosscher, Valerie
Sent: Tuesday, December 15, 2015 09:59 AM
To: Deltoral, Miguel; Poy, Thomas
Cc: Porter, Andrea
Subject: RE: Flint River Study

FYI, In case you don't already have this document:

Preliminary Engineering Report: Lake Huron Water Supply, Karegnondi Water Authority. September 2009. Prepared by AECOM, Jones & Henry Engineers LTD, Lockwood Andrews and Newnam Inc, O'Malia Consulting, ROWE Professional Services Company, and Wade Trim Inc. on behalf of City of Flint, Genessee County, Lapeer County, and Sanilac County.
ftp://cityofswartzcreek.org/2010%20Full%20Council%20Packets/2010-May-24%20Mtg,%20Budget%20-%20Karegnondi%20Report/May%2024%20Mtg,%20Karegnondi%20Water%20Line%20Engineering%20Study.pdf

Note: Appendix 9 (p338-357 of the pdf) includes a detailed description of the Flint WTP and recommendations for modifications after the proposed change to Lake Huron water. The future recommendations include (see "9.3.6 - Corrosion Control and Sequestering Agent") phosphoric acid at 1-2 mg/L in the treated Lake Huron water.

Thanks,
Val

-----Original Message-----
From: Deltoral, Miguel
Sent: Tuesday, December 15, 2015 4:46 AM
To: Poy, Thomas <poy.thomas@epa.gov>
Cc: Bosscher, Valerie <bosscher.valerie@epa.gov>; Porter, Andrea <porter.andrea@epa.gov>
Subject: FW: Flint River Study

Here are the docs from George.

Miguel A. Del Toral

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From: Rizzo, George
Sent: Monday, December 14, 2015 01:43 PM
To: Schock, Michael
Cc: Lytle, Darren; Deltoral, Miguel; Speth, Thomas
Subject: RE: Flint River Study

Mike,

Thanks so much for all the documents you sent. I had seen the "City of Flint Water Supply Assessment, February 2013" previously. When I looked at it today, I found that the document I was looking for was listed on page 6 which is the "Analysis of the Flint River as a Permanent Water Supply for the City of Flint, 2011." After some Googling and subscribing to SCRIBD.com, I found the attached documents which are the report and its appendices. Neither document considers corrosion control treatment as a parameter to be addressed, although a cost estimate for phosphate addition is included in Appendix 8. I'm not sure if Flint followed any of the recommendations in this report before switching sources. What I have found interesting is that the "City of Flint Water Supply Assessment, February 2013", which was conducted by the Michigan State Treasurer's Office, recommended that Flint continue buying water from Detroit, but the State Emergency Manager(s) allowed Flint to contract with the Karegnondi Water Authority. Politics anyone?

George

George S. Rizzo
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1650 Arch Street
Philadelphia, PA 19103-2029
Phone: 215-814-5781
FAX: 215-814-2302

-----Original Message-----
From: Schock, Michael
Sent: Monday, December 14, 2015 12:54 PM
To: Rizzo, George <Rizzo.George@epa.gov>
Cc: Lytle, Darren <Lytle.Darren@epa.gov>; Deltoral, Miguel <deltoral.miguel@epa.gov>; Speth, Thomas <Speth.Thomas@epa.gov>
Subject: RE: Flint River Study

Hi, George;

This is all that I have, and I don't think there ever was a competent, technical study done to focus on the corrosion control impacts. These studies were aimed at water quantity aspects, except the one that looked at THMs. I am thinking that the 2013 Water Supply Assessment document attached may be the study referenced on the flintwaterstudy.org web site. The study was commissioned in 2011 but finished in 2013. No mention of corrosion control for lead, though.

The mistake made to go from Detroit to Flint River water was predictable with the knowledge of even 30-35 years ago. You can't put a water with a pH of 7.5 or so into a system full of lead pipes. End of story.

And certainly not put it into brass and soldered copper with a boatload of chloride, on top of the low pH. The central problem is that the LCR framework cannot currently prevent the implementation of knowingly incompetent, stupid technical decisions. States are generally powerless to stop it, even if they know better. And sometimes they either don't know better, or don't care. This situation was both. State guidance is to pre-flush for 3-4 minutes before LCR sampling stagnation (Flint instructions said 5 minutes), 6-8 hours standing with no use from that faucet, then add it to many houses having plastic interior plumbing because either old galvanized pipe failed or copper was stolen during vacant periods. Additionally, there was no verification that sites sampled actually met the targeting criteria of the LCR. This is a clinic on LCR flaws.

The consultants, DEQ and Flint apparently all thought that "lime softening" was sufficient for corrosion control, though they did not take into account that using recarbonation to lower the pH by a couple of units undid any benefit. Plus, quick calculations Darren did from monthly operating data suggested wild swings in pH (though always too low) and carbonate concentration, so that whole process was out of control.

The Veolia report reflects a scary lack of concern about the lead. They suggested saving lime and reducing softening, but focused on TTHMs and the aesthetic aspect of discolored water from iron corrosion and main breaks. Their suggestion was POLYPHOSPHATE addition as a partial solution, absolutely the worst thing they could do for lead on top of the low pH.

--Mike

-----Original Message-----
From: Rizzo, George
Sent: Monday, December 14, 2015 8:46 AM
To: Deltoral, Miguel <deltoral.miguel@epa.gov>
Cc: Schock, Michael <Schock.Michael@epa.gov>; Lytle, Darren <Lytle.Darren@epa.gov>
Subject: RE: Flint River Study

Miguel,

Thanks for letting me know. I hope that a copy shows up.

George

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-----Original Message-----
From: Deltoral, Miguel
Sent: Friday, December 11, 2015 8:37 AM
To: Rizzo, George <Rizzo.George@epa.gov>
Cc: Schock, Michael <Schock.Michael@epa.gov>; Lytle, Darren <Lytle.Darren@epa.gov>
Subject: RE: Flint River Study

Hi George,

I read that article but I do not have a copy of the report mentioned. Mike Schock and Darren Lytle have had more contact with the Flint folks, so I'm copying them to see if they have seen it.

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Phone: (312) 886-5253

From: Rizzo, George
Sent: Thursday, December 10, 2015 01:08 PM
To: Deltoral, Miguel
Subject: Flint River Study

Miguel,

I've been following the Flint lead issue mainly by checking the flintwaterstudy.org web site. In one of the articles posted there that I read last week, which I can't find now, it was mentioned that the City of Flint in 2011 had a contractor prepare a report on what would be needed if they began to use the flint River as a permanent source. It was further stated that the City submitted this report to the Michigan DEQ sometime in 2013. However, it appears that the DEQ did not consider the report when they allowed Flint to switch sources. I'm wondering if you have seen this 2011 report, and if so, could you send me a copy. I'm really curious about the report's recommendations, as a source switch like Flint's is probably a rare occurrence. I think that we might want to clarify what may be needed to approved a source change as part of the LCRLTR and/or LCR guidance. The 2011 report might be helpful in considering what might be needed in the LCR and its guidance.

I know that you're on the Flint work group so there's no rush to send me the report if you have access to it. Thanks.

George

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To: Hedman, Susan[hedman.susan@epa.gov]; Kaplan, Robert[kaplan.robert@epa.gov]; Hyde, Tinka[hyde.tinka@epa.gov]
Cc: Rowan, Anne[rowan.anne@epa.gov]; Cassell, Peter[cassell.peter@epa.gov]; Beckmann, Ronna Erin[beckmann.ronna@epa.gov]; Fortin, Denise[Fortin.Denise@epa.gov]; Deamer, Eileen[deamer.eileen@epa.gov]; Harrison, Melissa[Harrison.Melissa@epa.gov]; Abrams, Dan[Abrams.Dan@epa.gov]; Grantham, Nancy[Grantham.Nancy@epa.gov]; Davis, CatherineM[Davis.CatherineM@epa.gov]
From: Kelley, Jeff
Sent: Wed 12/16/2015 1:57:16 PM
Subject: Part 2 of Michigan Radio documentary: How people in Flint were stripped of a basic human need: safe drinking water

We'll send the complete Flint clips package around later this morning …

http://michiganradio.org/post/how-people-flint-were-stripped-basic-human-need-safe-drinking-water

How people in Flint were stripped of a basic human need: safe drinking water

By LINDSEY SMITH • MICHIGAN RADIO

The tap water in Lee Ann Walters' home in Flint was causing her family's health problems. Tests show her water had extremely high lead levels. Her son Gavin was diagnosed with lead poisoning.

"How does this happen in the United States?" she asks. "I mean, you hear about it in third world countries, but how does this happen, specifically in a state that is surrounded by the Great Lakes?"

It's a good question. How did this happen?

To understand, we have to go back to 2013.

Flint was broke -- like “nearing bankruptcy” broke.

Flint had a string of these state-appointed financial hatchetmen during this time -- trying to get the city’s finances straight.

They were looking for savings everywhere, and they had their eyes on the expensive water they buy from Detroit, so when Genesee County decided to build a new water system, one that’s separate from Detroit, Flint was definitely interested in joining.

Once it was clear Flint could save millions of dollars a year with the new system, Flint got on board.

But there was a catch. The new water system wasn’t built yet, and it wouldn’t be ready until the summer of 2016, at the earliest.

And once Detroit realized Flint was going to leave its system, it jacked Flint’s water rates up even more – to the tune of $10 million over the two years the new pipeline would be under construction.

So in the spring of 2013, Detroit kind of had Flint over a barrel.

It was state treasury officials who got creative.

Their solution?

Forget Detroit, Flint's emergency manager said. Let Flint get really cheap water from the Flint River.

That brings us to April 25, 2014.

It was a Friday morning. A small group of city and state officials got together inside the Flint water plant. It was a big day. The day Flint stopped buying Detroit's water.

There was a countdown, and then Flint Mayor Dayne Walling pushed a tiny black button.

That push of a button closed a valve in an underground pipe that brought water from Detroit. Flint was officially cut off from Detroit's water.

To celebrate, the group took small clear plastic cups, and filled them with the city's new drinking water. In TV station WNEM's report from that day, you can see the group come together in a small circle. They raise their plastic cups, smile, and make a toast.

But the celebrations didn't last long.

City residents started complaining right away.

The water was brown or reddish.

It stank.

It tasted weird.

Darnell Earley was Flint's emergency manager at the time of the switch.

"What we have to do is respond to that, find a way to fix it, make it better and move on," said Earley.

Things did not get better.

Four months after the switch, the city detected E. coli in the water. E. coli is a nasty bacterium. It can make you very sick, and it can even cause kidney failure in kids and the elderly.

Residents were told to boil their water. These boil water advisories came out right around the time kids were heading back to school.

Phylis Brock is a lunch lady at Flint Community Schools. She says there was one little girl who would come into the cafeteria in the mornings, and she was really concerned about the water Brock was using to make her oatmeal.

The little girl's mom told her to be careful.

"'So I had to go back and forth with her for about three days. 'It's bottled water' – 'Yes, I boil it' – 'Mom said no' – and so finally I've convinced her. She'll eat oatmeal again," said Brock.

Brock's boss, the executive chef at Flint Community Schools, Wally Janeczek, said there were other problems.

“Some of our cooks started mentioning about how the water was smelling and that when they turned it on, it didn’t look quite right,” he said.

Janeczek didn’t take any chances. Five months after the switch, he started buying gallons of bottled water in bulk to prepare and wash all of the school food.

Janeczek’s main concern was the E. coli. You can’t make food for a school full of kids laced with bacteria that can make you violently ill. And Flint did get a handle on the E. coli problem, but killing the bacteria brought a whole new set of problems.

The city started dumping chlorine into the water system. Now people complained the water smelled like a swimming pool.

Flint resident Amber Hasan says the smell wasn’t the scary part.

“My eyes are burning in the shower and I was like, ‘oh my goodness, like, what’s going on?’ I get out the shower and I can’t see for a minute because my eyes are burning from whatever,” said Hasan.

Meanwhile, six miles south of Hasan’s house, Lee Anne Walters started noticing alarming clumps of hair in her shower drain.

“I had lost a bunch of hair,” says Walters. “At one point I had lost all my eyelashes. I still wear fake eyelashes because my eyelashes did not grow back what they were before. It makes me very self-conscious, so that’s now why I wear fakes.”

Flint’s water damaging to car parts

If you're thinking these people are delicate flowers with sensitive skin and eyes, consider this: Flint's water was so caustic; it was damaging car parts at one of General Motors' engine plants. Tom Wickham is a spokesman for GM's Flint operations.

"So what happened was we had employees who were checking the parts and they noticed there's something wrong here. There was some corrosion, some rust forming and they decided to raise the red flag," says Wickham.

GM tried to treat the water to get rid of the extra chlorine that Wickham says was rusting the engine parts. It didn't work well, so they brought in semi-trucks full of water instead.

It wasn't cheap.

"I don't have that number and that's not something we'd disclose," he says. "When I look at, what I was told at the time was, 'it's just a lot of money.'"

But GM was kind of lucky. A sliver of the company's sprawling property is technically in Flint Township, not the city of Flint, and Flint Township still gets its water from Detroit. GM discovered it could hook up through the township and get its water from Detroit again.

So eight months after the switch, GM left Flint's water system. The company was one of Flint's largest water customers. GM pulling out meant the city lost almost half a million dollars a year.

And then, a month later – nine months after the switch – people living in Flint got a notice in the mail. The notice said Flint was in violation of the Federal Safe Drinking Water Act.

It turns out: the city dumped too much chlorine in the water, so much that a by-product of the disinfectant, called trihalomethane, was above levels set by the federal government. Over time, exposure to trihalomethane can increase the risk of cancer and other health problems.

Getting nowhere with city and state officials

It's no surprise that angry people showed up again in droves at city hall, but their concerns were pretty much blown off.

"The city water is safe to drink," said then-mayor Dayne Walling. "My family and I drink it and use it every day."

Walling is a former mayor now, thanks to the water crisis.

By this time, people were bypassing city hall – which wasn't offering much help, or even acknowledging the problem.

In January 2015, in single-digit cold, people like Mike Sargent took matters into their own hands. They started giving out cases of free bottled water. Sargent spent the morning loading them into people's cars and trucks.

"You know, I knew that our intention would only be a band-aid on all that needed help," says Sargent.

By this time, Flint had a new emergency manager. Jerry Ambrose insisted the water was safe. In fact, Ambrose seemed more concerned about bad press than bad water.

“It doesn’t have to travel very far out of Flint to see that this news has been picked up not just in the Flint area, but throughout the state, and even beyond that,” said Ambrose. “There’s clearly a perception issue.”

But Flint residents didn’t think it was a “perception issue.”

At city hall, residents like Claire McClinton demanded the city reverse course.

“I mean, what do we have to do to get them to turn the water back on to Detroit?” asked McClinton. “We survived bacteria. We’ve had boil water advisories as a result. They put too much chloride in the water, we’ve got trihalomethanes, and it’s just been one disaster after another.”

But Ambrose was blunt: The city was broke. It couldn’t afford to reconnect to Detroit, even if it wanted to.

A leaked report from the EPA

Through that spring of 2015 and into the summer, folks hauled their milk jugs full of discolored water to meetings.

They brought their hand-lettered signs down to city hall.

Good Samaritans handed out bottled water.

But the “Flint water crisis” hadn’t been coined as a phrase yet. Out-of-town reporters weren’t flocking to cover the rallies or tell the story, but then, in late June, something shifted.

In her little yellow house on the south side of Flint, Lee Anne Walters opened her laptop, and there, in her email, was a draft report from an EPA guy who had come to her house to check out her tap water.

She immediately forwarded the email to a reporter she had met in the spring. Curt Guyette is an investigative reporter who works for the ACLU of Michigan.

“You know, talking about the ‘hazardous waste levels’ of lead was certainly attention grabbing,” says Guyette.

The draft EPA report showed lead levels at Lee Anne Walters’ house were way worse than she thought.

We’re talking simply jaw-dropping numbers.

Let me put it this way: If you have a glass of water, and it has a lead level of 5,000 parts per billion, the EPA considers it hazardous waste. One sample from the Walters’ house had more than 13,000 parts per billion. And that’s not even the scary part. The scary part is this report said there was reason to believe that the Walters’ home could be a canary in the coal mine.

“It’s not this individual home. It’s not coming from inside the home. It’s coming from outside the home. We know now, from emails and other records, that, for months, the EPA had been warning state officials that something was wrong with Flint’s water,” says Guyette.

But you won’t hear from the guy who works for the EPA who wrote this report; the guy who was doing most of the warning. The EPA won’t make him available, but Guyette managed to get him on the phone before writing a blog post about the report.

“He wanted the information to get out,” says Guyette. “And he was willing to go outside normal EPA protocol in order to make sure that happened.”

This leaked report, this was the very first time any official had publicly said Flint’s water may not be safe.

But back then, the EPA report wasn’t finalized, so Guyette was lucky to have scored this one conversation with the author.

The EPA wasn’t talking to any reporters about it.

The state’s non-response response

So back in July, I turned to Brad Wurfel, the spokesman for Michigan’s Department of Environmental Quality. Wurfel agreed to talk to me about the EPA report. The first thing I asked him was: what responsibility does the state have in making sure lead isn’t getting into people’s drinking water?

“Let me start here,” Wurfel said. “Anyone who is concerned about lead in the drinking water in Flint can relax. There is no broad problem right now that we’ve seen with lead in the drinking water in Flint.”

It turns out, there was a broad problem, and it turns out, the MDEQ is exactly the agency responsible.

And we know now that the same week I talked to Brad Wurfel, was the same week some of the people he works with at the MDEQ realized that Flint’s latest lead tests weren’t looking too good.

The tests were bad enough that at that point, they should have informed the public about the broad lead risk, but that's not what happened. Instead, state and city officials kept telling residents there was no lead problem in Flint's water; that this EPA report was wrong; that the report was written by a "rogue employee."

About a month after the EPA's report was plastered all over the media, Lee Anne Walters went with a group of Flint residents and concerned pastors to Lansing. They were able to arrange a meeting with top officials at Michigan's Department of Environmental Quality.

Walters had hoped that, after she leaked the federal report, state officials would take their concerns more seriously.

"They blew us off like we didn't know what we were talking about," says Walters.

State officials told Walters and others that the EPA employee who gave her the report had been "handled," but Walters had met someone who did take her seriously.

Help for people in Flint, Michigan comes from a professor in Blacksburg, Virginia

Later that afternoon, after that unproductive meeting with state regulators, she made a phone call that helped change the course of Flint's water crisis.

Marc Edwards is an environmental engineer, and a professor at Virginia Tech. He's studied the corrosion of old water systems for decades. Edwards has tested probably 30,000 homes for lead in his career. He's never seen anyone with higher lead levels than Lee Anne Walters' home in Flint.

On that warm, Tuesday afternoon in August, when Walters called Edwards to tell him how awful that meeting with the state went, Edwards remembers hanging up the phone and physically shaking with anger.

“I mean this is an imminent and substantial endangerment to children, and for me sitting 15 hours away, I can't believe how people could just sit there and let other children drink that water,” says Edwards.

“I mean, how could you do that?”

Edwards couldn’t sleep. He decided he had to drop everything.

He got four grad students together, and a bunch of lead test kits. Two days later, they loaded up in Edwards’ 13-year-old white “soccer mom” mini-van and drove 15 hours straight – directly to Flint.

By mid-August, the small research lab on the 4th floor of Durham Hall at Virginia Tech was a beehive of activity. Cardboard FedEx boxes full of lead testing kits from Flint started arriving for analysis.

Lee Anne Walters, and a group of Flint residents helped hand out the testing kits all over Flint. In all, graduate students, like Anurag Mantha processed more than 800 samples.

“We spent so many weekends here trying to get that done on time, so that we could get the data and start giving out the results to people because every hour, every day, we're delayed that thing, more and more people were still drinking the Flint water,” she says.

The tests showed lead levels in Flint were pretty bad.

Alerting the people of Flint

Bad enough, that one afternoon in mid-September, he went back to Flint. On the lawn in front of Flint City Hall, Edwards addressed several reporters, and about two dozen Flint residents.

Point by point, he explained why there's a dangerous lead problem in Flint.

"This problem has arisen because of what's known as a corrosion issue. So most cities, like Detroit, have treatments for their water where they put chemicals in the water to stop corrosion," he said to the crowd. "You can't see it, but there's an iron nail in this bottle here."

He held up two small bottles of water. In one with pretty clear water, you can see a small nail in the top. The water in the other bottle is orange. This was Flint's water. It was basically eating the nail. The iron nail was disintegrating into the water.

Edwards says Flint's corrosive water is doing the same thing to distribution pipes all over the city.

"Flint is the only city in America that I'm aware who does not have a corrosion control plan in place to stop this kind of problem," Edwards said. "So this water looks bad. It smells bad. It tastes bad. And this is part of what people have been complaining about."

But, Edwards warned the crowd, the real danger isn't the iron you can see in the tap water. The real danger is odorless, tasteless lead, that's also leaching from the distribution system.

Edwards said people in Flint should protect themselves against the lead exposure immediately.

He told them to stop drinking the tap water; to buy a certified lead filter, or bottled water if they can afford it.

Tomorrow, learn how state officials continued to downplay the lead risk to Flint's children, even after experts found dangerously high levels of lead in the water. And we meet a Flint pediatrician who risked her reputation to change the city's course. That's on the third and final installment of Not Safe To Drink, a special documentary from Michigan Radio.

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Jeff Kelley
Director, Office of External Communications
U.S. EPA Region 5
ph: 312-353-1159

Cc: Rowan, Anne[rowan.anne@epa.gov]; Beckmann, Ronna Erin[beckmann.ronna@epa.gov]; Fortin, Denise[Fortin.Denise@epa.gov]; Deamer, Eileen[deamer.eileen@epa.gov]; Harrison, Melissa[Harrison.Melissa@epa.gov]; Abrams, Dan[Abrams.Dan@epa.gov]; Grantham, Nancy[Grantham.Nancy@epa.gov]; davis[davis]
To: Kelley, Jeff[kelley.jeff@epa.gov]; Hedman, Susan[hedman.susan@epa.gov]; Kaplan, Robert[kaplan.robert@epa.gov]; Hyde, Tinka[hyde.tinka@epa.gov]
From: Cassell, Peter
Sent: Wed 12/16/2015 3:54:01 PM
Subject: Re: Flint water clips for Dec. 15

From: Kelley, Jeff
Sent: Tuesday, December 15, 2015 7:51 AM
To: Hedman, Susan; Kaplan, Robert; Hyde, Tinka
Cc: Rowan, Anne; Cassell, Peter; Beckmann, Ronna Erin; Fortin, Denise; Deamer, Eileen; Harrison, Melissa; Abrams, Dan; Grantham, Nancy
Subject: Flint water clips for Dec. 15

•□□□□□□□□ In Flint, Mich., there's so much lead in children's blood that a state of emergency is declared (Washington Post)

•□□□□□□□□ Mayor Karen Weaver declares water crisis state of emergency in Flint (Flint Journal)

•□□□□□□□□ This mom helped uncover what was really going on with Flint's water (part one of the Michigan Radio documentary Not Safe to Drink)

•□□□□□□□□ Flint Mayor Declares State of Emergency Over Water Problems (Associated Press)

•□□□□□□□□ FEMA sends 28,000 liters of bottled water to Flint amid lead troubles (Flint Journal)

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https://www.washingtonpost.com/news/morning-mix/wp/2015/12/15/toxic-water-soaring-lead-levels-in-childrens-blood-create-state-of-emergency-in-flint-mich/

In Flint, Mich., there's so much lead in children's blood that a state of emergency is declared

By Yanan Wang December 15 at 4:31 AM

Flint, Mich., resident Gladyes Williamson cries out through her tears, overwhelmed with frustration over the water drawn from the Flint River. (Jake May /Flint Journal-MLive.com via AP)

For months, worried parents in Flint, Mich., arrived at their pediatricians' offices in droves. Holding a toddler by the hand or an infant in their arms, they all have the same question: Are their children being poisoned?

To find out, all it takes is a prick of the finger, a small letting of blood. If tests come back positive, the potentially severe consequences are far more difficult to discern.

That's how lead works. It leaves its mark quietly, with a virtually invisible trail. But years later, when a child shows signs of a learning disability or behavioral issues, lead's prior presence in the bloodstream suddenly becomes inescapable.

According to the World Health Organization, "lead affects children's brain development resulting in reduced intelligence quotient (IQ), behavioral changes such as shortening of attention span and increased antisocial behavior, and reduced educational attainment. Lead exposure also causes anemia, hypertension, renal impairment, immunotoxicity and toxicity to the reproductive organs. The neurological and behavioral effects of lead are believed to be irreversible."

The Hurley Medical Center, in Flint, released a study in September that confirmed what many Flint parents had feared for over a year: The proportion of infants and children with above-average levels of lead in their blood has nearly doubled since the city switched from the Detroit water system to using the Flint River as its water source, in 2014.

The crisis reached a nadir Monday night, when Flint Mayor Karen Weaver declared a state of emergency.

"The City of Flint has experienced a Manmade disaster," Weaver said in a declaratory statement.

The mayor — elected after her predecessor, Dayne Walling, experienced fallout from his administration's handling of the water problems — said in the statement that she was seeking support from the federal government to deal with the “irreversible” effects of lead exposure on the city’s children. Weaver thinks that these health consequences will lead to a greater need for special education and mental health services, as well as developments in the juvenile justice system.

“Do we meet the criteria [for a disaster area]? I don’t know,” she told Michigan Live. But Weaver doesn’t think the city can receive the help it needs without alerting federal officials to the urgency of the matter.

To those living in Flint, the announcement may feel as if it has been a long time coming.

Almost immediately after the city started drawing from the Flint River in April 2014, residents began complaining about the water, which they said was cloudy in appearance and emitted a foul odor.

Since then, complications from the water coming from the Flint River have only piled up. Although city and state officials initially denied that the water was unsafe, the state issued a notice informing Flint residents that their water contained unlawful levels of trihalomethanes, a chlorine byproduct linked to cancer and other diseases.

Protesters marched to City Hall in the fierce Michigan cold, calling for officials to reconnect Flint’s water to the Detroit system. The use of the Flint River was supposed to be temporary, set to end in 2016 after a pipeline to Lake Huron’s Karegnondi Water Authority is finished.

A petition lobbying for the ending the city’s Flint River water supply garnered 26,000 signatures.

Through continued demonstrations by Flint residents and mounting scientific evidence of the water’s toxins, city and state officials offered various solutions — from asking residents to boil their water to providing them with water filters — in an attempt to work around the need to reconnect to the Detroit system.

That call was finally made by Gov. Rick Snyder (R) on Oct. 8. He announced that he had a plan for coming up with the $12 million to switch Flint back to the Detroit system. On Oct. 16, water started flowing again from Detroit to Flint.

This, too, was accompanied by the sense that it had come too late, particularly for the parents of children who may have been permanently affected.

These parents and other Flint residents filed a class-action federal lawsuit against Snyder, the state, the city and 13 other public officials in November for the damages they have suffered as a result of the lead-tainted water. The suit, which claims to represent “tens of thousands of residents,” alleges that the city and state officials “deliberately deprived” them of their 14th Amendment rights by replacing formerly safe drinking water with a cheaper alternative that was known to be highly toxic.

“For more than 18 months, state and local government officials ignored irrefutable evidence that the water pumped from the Flint River exposed [residents] to extreme toxicity,” the complaint reads. “The deliberately false denials about the safety of the Flint River water was as deadly as it was arrogant.”

Calling officials’ conduct “so egregious and so outrageous that it shocks the conscience,” the complaint cites the specific experiences of a few plaintiffs and their families, all of whom allege they have been challenged by similar health ailments since high levels of lead and copper entered their bloodstreams.

These conditions include skin lesions, hair loss, chemical-induced hypertension, vision loss and depression. Of the four families described in the complaint, two had ceased to drink Flint water after a certain point — and used it only for washing and cooking — but still said they were exposed to many of the same ill effects.

As the Detroit Free Press reported in October, avoiding Flint water became a way of life for the city’s residents.

Those who could afford it opted for bottled water, buying it by the gallons. Those who couldn’t spare the money drank it straight from the tap all the same, knowing that they would be paying for it later. When it came to bathing, some slowly filled bathtubs with pots of boiled water for their children.

LeeAnn Walters, a Flint resident and mother of 4-year-old twins, took every precaution after blood tests revealed that the level of lead in one of her sons had soared after the switch to Flint

River.

“I was hysterical,” Walters told the Free Press. “I cried when they gave me my first lead report.”

She had feared lead was the problem when her whole family developed rashes and her son stopped gaining weight.

Now, Walters said, when her children experience problems as they grow up, she will always wonder whether things would have been different — if their lives would have been better — if it weren’t for the water.

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http://www.mlive.com/news/flint/index.ssf/2015/12/mayor_karen_weaver_declares_st.html

Mayor Karen Weaver declares water crisis state of emergency in Flint

By Ron Fonger | rfonger1@mlive.com The Flint Journal on December 14, 2015 at 9:37 PM, updated December 15, 2015 at 7:39 AM

FLINT, MI -- Mayor Karen Weaver has declared a state of emergency in Flint, saying the city needs federal help to deal with its lead in water crisis.

"I am requesting that all things be done necessary to address this state of emergency declaration, effective immediately," Weaver told the City Council today, Dec. 14.

The new mayor asked that the Genesee County Board of Commissioners call a special meeting to take action to support her declaration, that it be forwarded to Gov. Rick Snyder, and potentially President Obama.

The end result of the resolution is not known, but Weaver said the city can't expect further help from the federal government without it.

"Do we meet the criteria (for a disaster area)? I don't know," Weaver said. "I'm going to ask and let them tell us no."

Flint is in a public health emergency, declared by Genesee County, because of rising levels of lead in water and in the blood of children after the city changed its water source to the Flint River from April 2014 until October.

The county declaration came after a Hurley Medical Center doctor's study showed the percentage of Flint infants and children with above-average lead levels nearly doubled citywide, and nearly tripled among children in "high risk" areas of lead exposure.

City officials have also said the use of corrosive Flint River water also damaged Flint's water infrastructure after state regulators never required the river water be treated to make it less corrosive.

Council members were divided in their opinion about what the declaration will mean.

"What this does is help position us as a community to show ... that we need resources in our community," said Councilman Scott Kincaid. "(It allows for us) to apply for state and federal funds. We have to prove ... that we need resources."

Councilman Josh Freeman said he doesn't want residents to expect immediate help with the city's water infrastructure, including lead service lines, because of the declaration.

"We need to find a way to actually fix the problem," Freeman said. "This declaration does not (fix the problem)."

Weaver's resolution says the damage done to Flint children because of lead exposure is irreversible, creating the need for increased spending on special education and mental health services and increased stress on the juvenile justice system.

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http://michiganradio.org/post/mom-helped-uncover-what-was-really-going-flint-s-water

This mom helped uncover what was really going on with ...

This mom helped uncover what was really going on with Flint's water (part one of the Michigan Radio documentary Not Safe to Drink)

Lindsey Smith, Michigan Radio • 17 hours ago

Up until October, the Walters family lived in a yellow two-story home on the south side of Flint. A couple of red maple trees shade the tiny front yard.

Walters heads to the back of the house, in a small room off of the kitchen, where the family keeps its stockpile of bottled water.

"This is our water stash. Once a week we go and we fill 40 gallons of water, so we have water to drink with, to cook with, and to bathe Gavin and Garrett in," says Lee Anne Walters.

Walters won't let her kids drink any water from her faucet. She won't even let her four-year-old boys, Gavin and Garrett, bathe in anything but bottled water, so preparing for bath time is quite the chore.

Walters takes jugs of water she buys at the store, dumps them in large pots, and heats the water on her stove. Once it boils, she dumps the water in the bathtub. Then she adds three or four gallons of cool water to sort of get the bath at the right temperature.

Over several months, Walters says she's gotten pretty efficient at this routine. She's got bath prep down to about 45 minutes.

“And then in between, because we only do the bathing thing once a week now – because, one, it's expensive, and two, the expense of all this on top of the water bills? We do baby wipe baths in between,” says Walters.

Walters scrubs the boys down with baby wipes almost every day. Luckily, her husband can shower at work. Her two oldest kids – they're teenagers – usually shower over at grandma's house outside of town.

There's a lot of people in Flint who knew something was wrong with the water, but this family's story, particularly Walters' role as a worried mother, changed everything about how the water crisis in Flint was handled.

Something's in the swimming pool

People in Flint started complaining about their tap water early in the summer of 2014 – not long after the city stopped pumping its drinking water from Detroit.

Instead, Flint started pumping it from the Flint River. Back then, Lee Anne Walters didn't think it was that big of a deal.

They had just bought their house. Someone had stripped all the plumbing from it, so they had to redo the house with new plumbing, and they installed a whole house filter.

Every drop of water that comes into her home goes through this filter.

But a few weeks after the city's switch to water from the Flint River, Walters noticed something was weird.

She had just set up the swimming pool in the side yard for the summer.

"Gavin started breaking out every time he'd get in the pool," says Walters.

The rash was bad enough that Walters took him to the doctor.

"And the doctors kept telling us it was contact dermatitis." She says they told her that "he's coming into contact with something that he's allergic to."

Later, Walters says her doctors suggested it was eczema. They gave her a cortisone cream to rub on Gavin's rash, but by July 2014, it wasn't just Gavin. His twin brother Garrett got the rash too.

"And we took them in and they told us it was scabies, so we treated them with a pesticide," says Walters.

Tiny mites cause scabies, and the common treatment is a chemical that's also in some pesticides. It's even in some mosquito nets and flea collars.

Walters rubbed the prescription cream on her twin boys from the neck down.

"I spent a ton of money because all the laundry that we had, all the bedding that we had, we took it to a laundromat," she says.

Walters was relieved when the boys' rash went away, but that feeling didn't last long.

Walters remembers the day the rash came back, because she had a bunch of people over to celebrate her daughter's high school graduation.

"And all the people that were here swimming and drinking the water, all of them broke out," she says.

She scheduled another doctor's appointment for her four-year-olds. She got the same diagnosis, but Walters really had some doubts about the scabies diagnosis, especially after the party.

"The third time they tried to convince us that it was scabies, I said, 'nun-uh, no.' The cream wasn't working on Gavin - period. He had that rash for more than a month straight."

Walters wasn't standing for it anymore, so she took Gavin to a dermatologist down in Brighton. They scraped in between Gavin's little toes, and put it under the microscope.

"And she verified by doing the skin scrapes that there was no scabies. There was no live anything – no dead anything – no eggs, so no scabies," she says.

She still didn't know what caused the rash, but Walters noticed something. Gavin's rash flared up every time he swam in the pool, and every time he took a bath.

Something clicked.

It became clear to her right then that Gavin's rash was caused by something in the tap water.

The city of Flint learns about Walters' problem

Eight months after Flint started pumping its drinking water from the Flint River, Lee Anne Walters stopped letting her kids drink it – everyone from the four-year-old twins, Garrett and Gavin – to her teenagers, JD and Kaylie.

“We quit drinking the water in December, when my 14-year-old got sick and it started coming through our filter and out the kitchen sink brown,” she says.

That was December 2014.

Walters says the water had this orangeish-brown tinge that would not go away, even when she put a fresh cartridge in the water filter, and at this point she was putting a fresh cartridge in the water filter at least a couple times a month.

Back when Flint was buying Detroit water, she only replaced it a couple times a year, so she called the city out to come take a look.

The city sent Mike Glasgow, Flint’s Utilities Administrator. He’s a Flint native and he’s spent the bulk of his career working for the city.

“I remember this fairly well,” says Glasgow. “A complaint had come through from her about discolored water – orange water.”

Glasgow says complaints like Walters’ were common around this time, but there’s a reason this one stood out.

“After the first day there, I said, ‘well, there’s a few ways we go about cleaning this up. We can flush hydrants. I’ll have people from our service center get out and check the area – see if anything’s out of the ordinary. I’ll be back a week later as a follow-up and usually we can clear something up in that amount of time,’” he said.

A week later, Glasgow went back to Walters’ house. Her tap water looked exactly the same. It still had this orange tinge.

“And I just happened to have some lead and copper sample bottles with me, and since her water was still discolored, I started to worry more about corrosion," he says.

People like Glasgow, those who help operate water plants in older cities like Flint, they worry about corrosion.

It can be a sign that a city isn't treating its water properly.

Water that's treated correctly – that has the right chemical balance – it will actually coat the inside of old pipes. That coating helps keep metals, like lead, copper, and iron from showing up in people's tap water.

An urgent voicemail. A mother's panic.

Glasgow ran a test on Walters' water.

"About a week later I got the results and it was pretty high for lead, so I called her right away to let her know," say Glasgow.

The results were alarming enough that Glasgow called Walters right away, but he couldn't reach her that afternoon.

He left her a voicemail.

Walters vividly remembers the message.

She recounted it for me:

"Hi Lee Anne, it's Mike from the Water Department. I just wanted to call and let you know we got your test back. Please, whatever you do, don't let your kids drink the water. Don't make their juice with it. And please just give me a phone call back as soon as possible.”

Walters tossed and turned all night, worrying.

How bad could the water be?

By the time Walters did get ahold of Mike Glasgow the next day, she was kind of panicked.

“He's like, ‘your number's at 104,’ and I'm like, ‘OK, well what is it supposed to be?’ He's like, ‘not over 15.’ And I’m like, ‘wait, what?’”

I just want to make sure you really get these numbers they’re talking about. I mean, there’s no level of lead exposure that is considered safe, but any amount of lead in water above 15 parts per billion is a problem.

At that level, cities are supposed to at least warn you about how bad your lead levels are.

The lead level in the water at the Walters’ place was seven times higher than that.

But at that moment, hearing that number – 104 parts per billion – Walters remembers she didn’t know what to make of it.

“OK, what does this mean? He's like, ‘we don't know. We’ve never seen a number like this before in the city.’ He’s like, ‘it’s the highest anyone’s ever seen.’”

Glasgow was adamant no one drink the water. Don’t use it to cook with. Don’t brush your teeth with it. If you’re going to take a shower, wash dishes, or even do a load of laundry, let the water run for 10 or 15 minutes first.

Flushing beforehand helps lower lead levels, he said.

A week later, Glasgow came back to do a follow-up test.

“And that one came back at 397, and it was like, ‘whoa. OK. Well, here's an even higher number. What the hell?’ And then it was, ‘OK, well now you've got to start flushing your water for 25 minutes before you use it for anything,” says Glasgow.

After that test, Glasgow decided to keep a close eye on the water at the Walters’ place. He came out almost every week.

“And they were seeing it consistently brown every week,” says Walters. “They didn’t have any answers for me.”

You can see iron in water.

It’s what gave Walters’ tap water that awful orange tinge, but you can’t see the lead in water. It’s odorless, tasteless, and much more dangerous to your health.

With numbers like that, Lee Anne Walters did what probably any mother would do. She took her kids to the doctor to get tested for lead.

When the tests came back, the diagnosis wasn’t good for Gavin. The doctors said he had lead poisoning.

“After the fact, knowing I was giving this to my kids makes me sick, because we should be able to trust the fact that we’re paying for this service,” she says. “And we should be able to trust the fact that it’s not going to harm our kids.”

Tomorrow, in part two of our series, we’ll hear how Lee Anne Walters contacts the EPA, and red flags start to go up. Mike Glasgow’s fear about corrosion turns out to be well founded.

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http://abcnews.go.com/US/wireStory/flint-mayor-declares-state-emergency-water-problems-35772738

Flint Mayor Declares State of Emergency Over Water Problems

By THE ASSOCIATED PRESS

FLINT, Mich. — Dec 15, 2015, 7:54 AM ET

Flint's mayor has declared a state of emergency due to problems with the city's water system caused by using water from the Flint River, saying the city needs more federal help.

Karen Weaver announced the declaration Monday night and said the move intends to help raise awareness of continuing problems. She said damage to children caused by lead exposure is irreversible and that the city will need to spend more on special education and mental health services as a result.

"I am requesting that all things be done necessary to address this state of emergency declaration, effective immediately," Weaver told City Council.

Exposure to lead can cause behavior problems and learning disabilities in young children.

Genesee County earlier declared a public health emergency. Officials have told Flint residents not to drink unfiltered tap water.

Flint switched from Detroit's water system last year to Flint River water in a cost-cutting move while under state emergency financial management. The Flint River was supposed to be an interim source until the city could join a new system getting water from Lake Huron.

But residents complained about the taste, smell and appearance of the water. Officials maintained the water met safety standards, but children were found to have elevated levels of lead in their blood and it was determined that corrosive river water was drawing lead from aging pipes.

Flint returned to Detroit's system in October.

Weaver was elected in November, unseating the incumbent mayor who led the city during the public health emergency and blamed state and federal agencies for the city's water problems. Weaver had promised while campaigning to issue an emergency declaration.

City Council members were divided about what the declaration will mean, The Flint Journal reported. Councilman Scott Kincaid said it's needed to seek more aid, noting that "We have to prove ... that we need resources."

Councilman Josh Freeman said he doesn't want residents to expect immediate help with the city's water infrastructure, including lead service lines, because of the declaration. He said the declaration doesn't fix the problem.

"We need to find a way to actually fix the problem," Freeman said.

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http://www.mlive.com/news/flint/index.ssf/2015/12/fema_sends_thousands_of_cases.html

FEMA sends 28,000 liters of bottled water to Flint amid lead troubles

By Ron Fonger | rfonger1@mlive.com on December 14, 2015 at 4:24 PM, updated December 14, 2015 at 8:50 PM

FLINT, MI — The federal government is helping to replenish the bottled water supply in Flint.

Two trucks delivered about 28,000 liters of water from the Federal Emergency Management Agency to the Food Bank of Eastern Michigan on Monday, Dec. 14. The water will be donated to "partner agencies" in the city of Flint that will distribute the water to residents.

"I don't think any (previous water donations) have been quite this large," said Kelly Belcher, marketing manager for the Food Bank.

Cassie Ringsdorf, a FEMA spokeswoman, said the agency maintains commodity stockpiles at warehouses across the country and makes them available.

"These commodities are available for use, within hours, should an incident occur that requires support from FEMA," Ringsdorf said in an email to The Flint Journal.

"As a part of our normal commodities management process, FEMA periodically offers commodities nearing the end of their shelf-life to eligible non-profits for donation. These donations are not done, 'on-request,' but are a part of our normal strategy to maintain our stockpiles for use in emergencies," the statement said.

A news release from the Food Bank credited Michigan State Police Lt. Billie Jo Roach with having identified the availability of the water from FEMA.

Flint remains in a public health emergency, and officials have said residents should not drink unfiltered tap water because of rising lead levels while the city used the Flint River as its water source from April 2014 until October 2015.

Earlier this month, Virginia Tech professor Marc Edwards said even though the city no longer uses the river as a water source, water remains unsafe to drink unfiltered in some areas of the city.

Roach is the MSP Emergency Management and Homeland Security Division District 3 coordinator.

The Journal could not immediately reach a representative of the MSP Emergency Management and Homeland Security Division for further comment.

FEMA said the Food Bank claimed two truckloads of water and agreed to pay all transportation costs associated with the donation.

Belcher said the United Way of Genesee County paid that expense for the Food Bank.

The Food Bank's partner agencies that will receive the FEMA water include soup kitchens, homeless shelters and food pantries, the organization said in its news release.

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U.S. EPA Region 5
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To: Peterson, John[peterson.john@epa.gov]; Hedman, Susan[hedman.susan@epa.gov]; Kaplan, Robert[kaplan.robert@epa.gov]; Hyde, Tinka[hyde.tinka@epa.gov]
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From: Cassell, Peter
Sent: Wed 12/16/2015 3:59:21 PM
Subject: Re: Flint Water Clips Nov. 10, 2015

FLINT DRINKING WATER CLIPS

US. EPA REGION 5 – AS PREPARED BY PETER CASSELL *(ORA/OEC/PA)* ON DEC. 16, 2015

- Flint, Michigan, Declares State of Emergency Amid Lead in Drinking Water Scare (NBC News)
- Flint, Michigan, tried to save money on water. Now its children have lead poisoning (Vox.com)
- Flint, Michigan, Declares State of Emergency Over Amount of Lead in Drinking Water (Slate.com)
- A State of Emergency Over Water in Flint (The Atlantic)
- Michigan mom feels "helpless" amid tainted water crisis (CBS News)
- Flint mayor declares 'manmade disaster' over lead-tainted water supply (The Guardian)
- How people in Flint were stripped of a basic human need: safe drinking water (Michigan Radio)
- Flint Mayor Declares Disaster in Hopes of Getting Federal Aid (Wall Street Journal)
- In Flint, Mich., there's so much lead in children's blood they've declared a state of emergency (Chicago Tribune)

Flint, Michigan, Declares State of

Emergency Amid Lead in Drinking Water Scare (NBC News)

http://www.nbcnews.com/news/us-news/flint-michigan-declares-state-emergency-amid-lead-drinking-water-scare-n480636

by ERIK ORTIZ

DEC 15 2015, 6:57 PM ET

In trying to solve one water crisis, the city of Flint, Michigan, has inadvertently created a newer, even bigger one — and it's coming at the cost of children's health.

Now, after tests have shown elevated lead levels in the blood of some local children, the mayor of Flint has declared a state of emergency to pave the way for possible government disaster aid.

"I can tell you today that we need state and federal assistance for the people to feel comfortable. We need some help," Flint Mayor Karen Weaver said during a Tuesday afternoon news conference, after first announcing the disaster declaration Monday.

"There's no question in my mind that Flint is not able to take on this challenge by ourselves," she added as residents in attendance broke out in applause.

Weaver was elected in November, running on the promise that she would declare the state of emergency in the city of 99,700.

She said damage to children caused by lead exposure is irreversible, and that the city will need to spend more on special education and mental health services as a result.

Exposure to lead can cause behavior problems and learning disabilities in young children, health officials warn.

Genesee County, where Flint is located, earlier declared a public health emergency. Officials have told Flint residents not to drink unfiltered tap water.

Flint's water woes are only the latest for a community that saw its financial fortunes sink with the downturn of the American auto industry.

Flint switched from Detroit's water system last year to the Flint River as part of a cost-cutting move while under the state's emergency financial management. Officials had estimated the cash-strapped city would save about $5 million in less than two years because of the change.

Tapping from the Flint River was supposed to be an interim source until the city could join a new system getting water from Lake Huron.

But residents complained about the taste, smell and appearance of the water. Officials maintained the water met safety standards, but children were later found to have elevated lead levels in their blood and it was determined that corrosive river water was drawing lead from aging underground pipes.

Flint, Michigan, residents protest the water quality in the city on Oct. 5, 2015, outside Flint City Hall. Danny Miller / AP

Flint returned to Detroit's system in October, but the damage was apparently done.

"So far, what we've had is Band-Aid fixes. We have the filter program, we have talked about diets for lead exposure, and don't get me wrong, we want these things to continue," Weaver said at a City Council meeting Monday night, according to NBC affiliate WEYI. "We need all of that, but it's not enough."

Residents flooded City Hall in protest this year saying their children were being poisoned; water filters and bottled water were handed out as part of a government response.

Flint mom Lee Anne Walters told NBC News in October that the tap water was to blame for her son, Garrett, seeing his lead levels triple.

"I'm all for doing what's in the best interest of our city," Walters said about the initial move to switch water systems. "But if you're going to do this, you better make sure it's safe — and they didn't."

Ron Leix, a spokesman for the state Emergency Management and Homeland Security Division, said county commissioners would need to support Flint's disaster declaration in order for financial aid to be considered.

And that could take time.

"It's not like FEMA will come here on a magic carpet," Leix told NBC News on Tuesday. "It can be a lengthy process."

Already, county officials have signaled they may not back Weaver's request. Genesee County board Chairman Jamie Curtis said he has no plans to call a special meeting to vote on supporting the disaster aid, reported MLive.com

A call to the county Board of Commissioners went unanswered Tuesday afternoon.

Leix, meanwhile, said it's unclear how much money Flint would be able to collect in government aid even if the process does move forward. "We haven't seen the damage assessment," he added.

Flint, Michigan, tried to save money on water. Now its children have lead poisoning (Vox.com)

http://www.vox.com/2015/12/15/10237054/flint-lead-poisoning

Updated by Libby Nelson on December 15, 2015, 7:00 p.m. ET @libbyanelson
libby@vox.com

The water in Flint, Michigan, poisoned the town's children with lead for months. Now the mayor of Flint has declared a state of emergency, saying that the elevated lead levels will have long-lasting effects in its children.

Four percent of the town's children have elevated levels of lead in their bloodstream — double the share affected a few years ago, according to tests from Flint's Hurley Medical Center and confirmed by the state.

This all came about because a struggling Rust Belt city, trying to save money, ended up failing at one of its most basic tasks, providing safe drinking water. And the city compounded the problem by ignoring months of warnings from activists who felt its water was not safe to drink.

Flint's decision, and the state's insufficient water testing, led to irreparable damage. There's no amount of lead safe for children to drink, and the effects of lead poisoning last a lifetime.

How Flint poisoned its children while trying to avoid bankruptcy

Although the state of emergency wasn't declared until today, the lead crisis in Flint has been public since October, and suspected long before that.

But things were bad in the Michigan city long before its tap water turned out to be unsafe.

Flint was once a prosperous manufacturing town, but it never recovered from the closure of General Motors plants in the late 20th century. By 2013, when the water saga started, Flint's population had dropped from 200,000 in the city's heydey in the 1960s and 1970s to about 99,000 today. Its landscape was dotted with abandoned homes. The unemployment rate was 16 percent. Forty-two percent of residents, including two-thirds of children, were living in poverty — a higher share than in even Detroit, which had become a symbol of post-recession urban blight.

Flint was also going broke. It had lost 75 percent of its property tax base since the 1980s. An emergency manager had been running the town's finances since 2011. The city was overloaded with $1.1 billion in unfunded pension costs.

And there wasn't much left to cut: Budget cuts had already slashed its police force, cutting the total number of officers from 265 officers in 2007 to 122 in 2012. In 2013, it was named the most dangerous city in America.

So Flint decided to save money on water. It had been purchasing water from Detroit, but costs had been climbing even as Flint's population fell. In 2013, the city decided to join a new, regional water system that, like Detroit, drew water from Lake Huron. The switch would save millions of dollars per year.

The problem was that the regional water system wasn't yet built, and Flint wanted to start getting its water from somewhere other than Detroit right away. So the city started taking its water directly from the Flint River in 2014 — celebrating its break from Detroit with a countdown and a toast, Michigan Radio reported.

Residents started complaining about the water's smell and taste almost immediately, saying it caused rashes, hair loss, and other health problems. A nearby General Motors plant said the water was damaging its car parts and quit using it. At one point, residents had to boil water due to bacteria.

But the city assured them that everything was fine, and that the bad smell and taste don't necessarily indicate other problems. They claimed federal tests showed the water was safe.

Flint officials took a very long time to admit they had a lead problem

Even as other problems with Flint's water were uncovered — bacterial contamination, as well as high levels of other contaminants that can cause liver problems — the lead poisoning remained hidden.

In late June, an employee at the U.S. Environmental Protection Agency's Chicago office leaked a report on Flint's water to a local activist, whose son had developed a rash after swimming in a pool filled with Flint water and was diagnosed with lead poisoning. It said tests found high lead levels in the water. The city had told the woman the lead came from her plumbing, not the water.

But Flint continued to deny it, saying the report was released prematurely by a "rogue employee." Flint's lead problem wasn't made public until early fall, after outside researchers from Virginia Tech got involved and found extremely high levels of lead in the water of some Flint homes — and elevated levels in 40 percent of the homes the researchers tested.

In September, pediatricians reported that when the city bought water from Detroit, 2.5 percent of children under 5 in the most affected zip codes had elevated levels of lead in their blood. After the switch, that share had more than doubled, to 6.3 percent.

In the city as a whole, the proportion of children with high blood lead levels doubled, from 2.1 percent to 4 percent.

The city finally admitted it had a serious problem. In October, Flint began handing out water filters and began buying water from Detroit again, at a cost of $12 million.

The state Department of Environmental Quality admitted it had making a mistake in testing Flint's water for lead and other contaminants. "The water testing steps followed would have been correct for a city less than 50,000 people, but not for a city of nearly 100,000," Dan Wyant, the department's director, said in a statement.

Lead poisoning lasts a lifetime

Lead poisoning affects brain development so much that the gradual reduction of lead poisoning in American society has worked something of a miracle. Exposure to lead, and no amount of exposure is now considered safe, can lead to learning disabilities, lower IQs, and impulsivity. Those effects, multiplied over a city or state or country, are costly.

Eliminating lead in gasoline, Mother Jones's Kevin Drum argued in 2013, might be responsible for the dramatic drop in crime in the US in the 1990s:

If you add a lag time of 23 years, lead emissions from automobiles explain 90 percent of the variation in violent crime in America. Toddlers who ingested high levels of lead in the '40s and '50s really were more likely to become violent criminals in the '60s, '70s, and '80s.

But lead poisoning is still around, particularly in poor neighborhoods, where it's more likely to linger in paint on the walls of older houses. Freddie Gray, whose death in police custody led to protests in Baltimore last year, grew up around lead paint chips. Gray, like other Baltimore residents, won a settlement in 2010 from the landlords who allowed those conditions to persist.

In Flint, attorneys are recruiting plaintiffs for a class action lawsuit against the city and state. It's likely to be a long process, but the damages from the city's brief stint of filtering its own water will last years.

Go deeper:

Kevin Drum's Mother Jones article on how lead poisoning caused the rise and fall of crime in the US is a testament to just how bad the condition can be.

Michigan Radio is in the middle of publishing a multi-part documentary on Flint's water crisis that lays out the story in fascinating, horrifying detail.

Another horrifying lead paint scandal: an experiment in Baltimore in the early 1990s deliberately exposed children to lead in order to test the effectiveness of lead removal techniques.

Flint, Michigan, Declares State of Emergency Over Amount of Lead in Drinking Water (Slate.com)

http://www.slate.com/blogs/the_slatest/2015/12/15/flint_declares

By Ben Mathis-Lilley

Downtown Flint in a photo from 2009.

Photo by Rebecca Cook/Reuters

The mayor of Flint, Michigan, has declared that **the level of lead in the city's drinking water constitutes a state of emergency**, the *Washington Post* writes Tuesday. The city began using the Flint River as its water source in 2014, and a**September study** found that the number of infants and children with above-average levels of lead in their blood has since nearly doubled:

Screenshot/Flint Water Study

Mayor Karen Weaver says that the potential impact of **lead poisoning** on the physical and mental health of Flint children will require federal resources that can only be accessed by making the emergency declaration. (Lead has particularly damaging effects on children.) The city previously **declared a "public health emergency"** in October.

The city of Flint was for many decades a center of manufacturing operations for General

Motors and related companies; a 2003 study called the automotive industry the **"leading remaining source of lead pollution" in North America**.

Ben Mathis-Lilley edits the Slatest. Follow @Slatest on Twitter.

A State of Emergency Over Water in Flint (The Atlantic)

http://www.theatlantic.com/national/archive/2015/12/flint-michigan-lead-water-toxic/420654/

Citing toxic levels of lead in the drinking water, the mayor of the Michigan town said "irreversible" damage is being done to children in the area.

Michigan's Flint River Wikimedia

ADAM CHANDLER DEC 15, 2015 U.S.

The mayor of Flint, Michigan, has declared a state of emergency over the city's drinking water, which she says has caused "irreversible" damage to the health of the children consuming it.

"This action is being taken to protect the health, safety, and welfare of the citizens of Flint," wrote Karen Weaver in the declaration Monday night.

Over the past year, residents have increasingly complained of health issues, and doctors have detected high iron levels in patients' blood. Last April, the city switched from Detroit's water system to the use of the local Flint River in an effort to save money during a financial crisis.

“The Flint River was supposed to be an interim source until the city could join a new system getting water from Lake Huron,” the AP noted. Officials have since urged residents not to drink unfiltered tap water.

In a dispatch from Flint earlier this year, my colleague Alana Samuels outlined the problem, including how the city’s diminishing population impacts its ability to improve its aging infrastructure.

Like many cities in America, Flint has lost residents but still has to provide services like water and sewer and road maintenance within the same boundaries. All while bringing in less tax revenue to pay for it. Flint has not had the money to spend on crucial infrastructure upgrades, and has left old pipes in place for longer than most engineers would recommend. Water prices are rising in Flint, like they are in lots of other cities, but the quality of water is getting worse, not better.

Weaver, elected last month, had campaigned on a promise of declaring an emergency if conditions didn’t change. And while it’s not clear what concrete changes the declaration will inspire, some residents were happy to see some action being taken.

“I’m thrilled,” wrote Melissa Mays, a resident of Flint, in an email on Tuesday. “It’s what we’ve been pushing for since we found out how badly our infrastructure was damaged. It’s definitely a step in the right direction.”

Michigan mom feels "helpless" amid tainted water crisis (CBS News)

http://www.cbsnews.com/news/flint-michigan-drinking-water-lead-contamination-lawsuit-mays-family-impact/

Flint, Michigan, is in a state of emergency, now months after high levels of lead turned up in its tap water. This week, more than 7,000 gallons of bottled water from FEMA arrived in the city.

When officials tapped into the Flint River for the city's drinking water, the strong chemicals used to clean the water caused lead from the pipes to leak into the supply, reports CBS News correspondent Adriana Diaz. By the time Flint went back to its original water source, families said the damage was already done.

"When I hear my son get up at night and cry because his bones hurt and there's nothing I can give him, there's nothing I can do for him to take away his pain,I feel completely helpless," Melisa Mays said.

For nearly five months, Mays and her family drank the water from their tap, unaware there was lead in it. Mays said she noticed a change in her three children: convulsions, skin lesions, memory and hair loss.

"My heart breaks, because fact of the matter is, I handed them the glasses of water," Mays said.

Last month, Mays and other Flint residents filed a civil lawsuit.

In court papers, they accused state and local officials of "not properly monitoring or sampling the Flint River water" and delaying "in notifying the public of serious safety and health risks." They went on to call the city's "deliberately false denials" about the safety of the water "deadly" and "arrogant."

"They continually said the water is safe to drink," Rhonda Kelso said.

The city's water problems started in the spring of 2014, when Flint moved its water supply from a source in Detroit to the Flint River. The switch was supposed to save the city about $15 million a year.

But the lead levels detected in Flint's children under the age of five nearly doubled, according to a study by a local medical center.

In October, city officials declared unfiltered water unsafe to drink. Shortly after, Flint switched back to the original Detroit water supply.

"Damage from lead is irreversible," Flint's new Mayor Karen Weaver said.

Weaver said the city needs to fix its decaying infrastructure.

"When we made that switch to the Flint water, we damaged the pipes. We already had very old infrastructure but there was no corrosion control in place," she said.

The World Health Organization declares any level of lead in the body unsafe and is particularly toxic to young children. Severe cases of exposure may cause mental disabilities and behavioral difficulties with irreversible neurological effects.

"I can make nightmares go away, I can make spiders go away. I can't fix this and I can't make this go away," Mays said.

Flint's mayor told CBS News that upgrading the city's infrastructure could cost $1 billion, but she hopes declaring a state of emergency will unlock additional state and federal funding. Gov. Rick Snyder has created a task force to review Flint's water crisis.

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Flint mayor declares 'manmade disaster' over lead-tainted water supply (The Guardian)

http://www.theguardian.com/us-news/2015/dec/15/michigan-mayor-declares-manmade-disaster-lead-tainted-water-supply

The Michigan city has declared a state of emergency over contaminated water, affecting the entire city of 100,000 residents and those who commute there

Employees at the Flint, Michigan General Motors plant, which stopped using Flint water because it was rusting the machinery. Photograph: Jake May/AP

Joanna Walters in New York
@Joannawalters13

Tuesday 15 December 2015 17.45 ESTLast modified on Tuesday 15 December 201518.04 EST

The city of Flint, Michigan, has declared a state of emergency over contaminated water supplies amid calls for a criminal investigation, the resignation of the state governor and a class action lawsuit that could top $1bn.

The Federal Emergency Management Agency (Fema) sent 28,000 bottles of water to the city on Monday just hours before the mayor declared: “The city of Flint has experienced a manmade disaster.”

Critics believe the entire city has been affected to varying degrees by high levels of lead and other pollutants in the water. This includes the 100,000 residents and those who commute to Flint for work.

At a city council meeting on Monday night, Mayor Karen Weaver said Flint needed federal help to deal with a crisis over water supplies tainted with lead.

The Flint authorities had switched the public water supply in April 2014 from Lake Huron to the Flint river. The river flows through the city but had not been used for consumption since the early 1960s because of industrial pollution.

After the switch, many residents immediately reported that the water coming out of their taps was yellowy, cloudy and odorous.People reported suddenly breaking out in rashes or losing their hair.

Public protests followed, but the authorities repeatedly said the water was safe, despite stepping up water treatment and occasionally issuing advice to residents to boil it.

But in October 2015, the city returned to its previous supplier, the city of Detroit, which treats water from Lake Huron then passes it on to Flint, 66 miles to the north-west.

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Cc: Kaplan, Robert[kaplan.robert@epa.gov]
From: Lytle, Darren
Sent: Wed 12/16/2015 9:02:32 PM
Subject: RE: ONE MORE TIME PLEASE RE: Performance Evaluation Period

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Miguel A. Del Toral

Regulations Manager

Ground Water and Drinking Water Branch

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Cc: Kaplan, Robert[kaplan.robert@epa.gov]
From: Schock, Michael
Sent: Wed 12/16/2015 9:11:08 PM
Subject: RE: ONE MORE TIME PLEASE RE: Performance Evaluation Period

My comments in red.

From: Lytle, Darren
Sent: Wednesday, December 16, 2015 4:03 PM
To: Henry, Timothy <henry.timothy@epa.gov>; Deltoral, Miguel <deltoral.miguel@epa.gov>; Kempic, Jeffrey <Kempic.Jeffrey@epa.gov>; Schock, Michael <Schock.Michael@epa.gov>; Poy, Thomas <poy.thomas@epa.gov>
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Cc: Kaplan, Robert[kaplan.robert@epa.gov]
From: Kempic, Jeffrey
Sent: Wed 12/16/2015 9:32:59 PM
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I like the change that Mike made on the plant configuration. Detroit's Lake Huron plant does not have ozone, so if Flint is retaining the ozone treatment (and it seemed like they planned to last month), then the treatment trains won't match even if Flint uses alum and the Lake Huron plant continues to use it.

I am fine with Darren's other change about the loops and lead release.

Hope that helps.

Jeff

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Subject: RE: Performance Evaluation Period

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Miguel A. Del Toral

Regulations Manager

Ground Water and Drinking Water Branch

77 West Jackson Blvd (WG-15J)

Chicago, IL 60604

Phone: (312) 886-5253

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Darren A. Lytle, Ph.D., P.E.

Branch Chief (Acting)

U.S. Environmental Protection Agency

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Cincinnati, Ohio 45268

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Cc: Kaplan, Robert[kaplan.robert@epa.gov]
From: Henry, Timothy
Sent: Wed 12/16/2015 10:10:10 PM
Subject: RE: ONE MORE TIME PLEASE RE: Performance Evaluation Period
performance evaluation period 12-16-15 final draft.docx

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Cc: Kaplan, Robert[kaplan.robert@epa.gov]
From: Schock, Michael
Sent: Wed 12/16/2015 10:13:41 PM
Subject: RE: ONE MORE TIME PLEASE RE: Performance Evaluation Period

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Sent: Wednesday, December 16, 2015 5:10 PM
To: Kempic, Jeffrey <Kempic.Jeffrey@epa.gov>; Schock, Michael <Schock.Michael@epa.gov>; Lytle, Darren <Lytle.Darren@epa.gov>; Deltoral, Miguel <deltoral.miguel@epa.gov>; Poy, Thomas <poy.thomas@epa.gov>
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To: Hyde, Tinka[hyde.tinka@epa.gov]
Cc: Henry, Timothy[henry.timothy@epa.gov]
From: Kuefler, Patrick
Sent: Wed 12/16/2015 11:33:21 PM
Subject: Water Division National Honor Award Nominations

Nonresponsive

Nonresponsive

Flint Drinking Water Team

This team is being recognized for its actions to identify and resolve a public health crisis in Flint, Michigan due to elevated lead levels in drinking water. The team's actions went above and beyond their normal oversight role to work with the state to address critically important program implementation issues to protect a vulnerable community. The team: Miguel Del Torral, Jennifer Crooks, Thomas Poy

Nonresponsive

Nonresponsive

Patrick F. Kuefler

Chief

Water Enforcement &

Compliance Assurance Branch

312 353-6268 Office

Personal Phone / Ex. 6

To: Nelson, Leverett[nelson.leverett@epa.gov]; Czerniak, George[Czerniak.George@epa.gov]; Newton, Cheryl[Newton.Cheryl@epa.gov]; Korleski, Christopher[korleski.christopher@epa.gov]; Karl, Richard[karl.richard@epa.gov]; Guerriero, Margaret[guerriero.margaret@epa.gov]
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From: Hyde, Tinka
Sent: Wed 12/16/2015 11:39:24 PM
Subject: Water Division National Honor Award Nominations

Nonresponsive

13 bronze Flint.pdf
bronze MN Eutrophication Standard Approval.docx

Nonresponsive

Nonresponsive

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Water Enforcement &
Compliance Assurance Branch

312 353-6268 Office
312 805 7952 Mobile

Select an Option

U.S. Environmental Protection Agency

Recommendation for EPA National Honor Award

Check (☐) the award for which the individual or team is being nominated. Refer to the Awards Descriptions section in the Call for Nominations Memorandum for awards details and criteria.

- ☐ Gold Medal ☐ Silver Medal ☐ Bronze Medal
- ☐ Paul G. Keough Award for Administrative Excellence
- ☐ Glenda A. Farmer Award for Exemplary Technical Support
- ☐ Exemplary Leadership in Human Resources Management
- ☒ Award for Outstanding Leadership in Collaborative Problem-Solving
- ☐ James W. Craig Pollution Prevention Leadership Award
- ☐ Managerial Leadership Award
- ☐ Exemplary Customer Service Award
- ☐ Susanne E. Olive Award for Exemplary Leadership in National EEO
  - *(check category)*
  - ☐ Supervisory/Managerial ☐ Non-Managerial
- ☐ Award for Outstanding Performance Management
- ☐ Russell Train Sustainability Award
- ☐ Vivian Malone Jones Legacy Award
- ☐ Ira W. Leighton, Jr. Leadership Award
- ☐ Trudy A. Speciner Non-Supervisory Award for Advancing Environmental Protection
- ☐ Barbara M. Metzger Environmental Data Quality Assurance Manager Award
- ☐ Award for Sustained Outstanding Contributions to International Environmental Protection
- ☐ Contracts Management Award
- ☐ Joseph Seifter Award (Human Health Risk Assessment)
- ☐ James W. Akerman Award (Ecological Risk Award Assessment)
- ☐ Maryann Froehlich Financial Stewardship Award
- ☐ Exemplary Leadership in Records Management
- ☐ Science Achievement Awards
  - *(check category)*
  - ☐ Air Quality
  - ☐ Chemistry
  - ☐ Engineering
  - ☐ Water Quality
  - ☐ Environmental Economics
  - ☐ Biology/Ecology
  - ☐ Earth Sciences
  - ☐ Health Sciences
  - ☐ Waste Management

INFORMATION ON NOMINEE

Name (for a team nomination, provide the official team name and list the names of the team members **in alphabetical order** on the next pages) Flint Drinking Water Team	Position, Title, Series & Grade
Organization & Address (if a team, provide the full name and address of the Nominating office) REG/05/WD/GWDWB 77 W Jackson Blvd., Chicago, IL 60604	Telephone Number

Period of Service on which Award is based: From: 1/1/2015 To: 9/30/2015

APPROVALS

Nominating Official (Name and Title) Tinka Hyde, Director Water Division	Telephone Number (312) 886-9296
SIGN Signature Nonresponsive	Date *12/04/2015*
Approving Official (AA or RA – Name and Title) Susan Hedman, Regional Administrator	Telephone Number
SIGN Signature	Date

EPA Form 3130-16 (Rev 10/2014) Previous editions are obsolete.
(WebForms v3.8)

TEAM NOMINATION INFORMATION

Team nominations may not exceed 20 members, ***no exceptions***. Enter team names, ***in alphabetical order, precisely*** as they are to appear in the Ceremony program, on plaques, certificates, and the National Honor Awards website. If a nominee is an employee from another AAship or Region, the Nominating Official is responsible for notifying the Office or Region affected, and for providing complete information concerning the nominee. Support staff and individuals from other Federal Departments and agencies may be included. In cases where the team nomination does **not** include support staff, justification must be provided explaining the absence in the section of this form entitled, "Secretarial Support Statement."

1. Name Nonresponsive Discussion of Personal Matters / Ex. 6	Telephone Number (312) 886-5253
AAship, Region and Address (include Mail Code) REG/05/WD/GWDWB 77 West Jackson Blvd., MC: WG-15J Chicago, IL 60604	Position Title, Series & Grade Nonresponsive Discussion of Personal Matters / Ex. 6

2. Name Nonresponsive Discussion of Personal Matters / Ex. 6	Telephone Number (312) 886-0244
AAship, Region and Address (include Mail Code) REG/05/WD/GWDWB 77 West Jackson Blvd., MC: WG-15J Chicago, IL 60604	Position Title, Series & Grade Nonresponsive Discussion of Personal Matters / Ex. 6

3. Name Nonresponsive Discussion of Personal Matters / Ex. 6	Telephone Number (312) 886-5991
AAship, Region and Address (include Mail Code) REG/05/WD/GWDWB 77 West Jackson Blvd., MC: WG-15J Chicago, IL 60604	Position Title, Series & Grade Nonresponsive Discussion of Personal Matters / Ex. 6

4. Name	Telephone Number
AAship, Region and Address (include Mail Code)	Position Title, Series & Grade

5. Name	Telephone Number
AAship, Region and Address (include Mail Code)	Position Title, Series & Grade

6. Name	Telephone Number
AAship, Region and Address (include Mail Code)	Position Title, Series & Grade

7. Name	Telephone Number
AAship, Region and Address (include Mail Code)	Position Title, Series & Grade

8. Name	Telephone Number
AAship, Region and Address (include Mail Code)	Position Title, Series & Grade

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AAship, Region and Address (include Mail Code)	Position Title, Series & Grade

10. Name	Telephone Number
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11. Name	Telephone Number
AAship, Region and Address (include Mail Code)	Position Title, Series & Grade

12. Name	Telephone Number
AAship, Region and Address (include Mail Code)	Position Title, Series & Grade

13. Name	Telephone Number
AAship, Region and Address (include Mail Code)	Position Title, Series & Grade

14. Name	Telephone Number
AAship, Region and Address (include Mail Code)	Position Title, Series & Grade

15. Name	Telephone Number
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16. Name	Telephone Number
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AAship, Region and Address (include Mail Code)	Position Title, Series & Grade

18. Name	Telephone Number
AAship, Region and Address (include Mail Code)	Position Title, Series & Grade

19. Name	Telephone Number
AAship, Region and Address (include Mail Code)	Position Title, Series & Grade

20. Name	Telephone Number
AAship, Region and Address (include Mail Code)	Position Title, Series & Grade

SERVICE OR ACHIEVEMENT WHICH MERITS SPECIAL HONOR

Describe the service or achievement which merits a National Honor Award. Include the following: (1) indicate whether this achievement is completed or ongoing; and (2) describe how the achievement **exceeds** the person's or team members' normal duties. **Margins must be one inch (both sides) and typed in 12-point Times New Roman only.** Any narrative description which exceeds these two pages will be rejected in its entirety.

The Safe Drinking Water Act establishes standards and other requirements to protect the health of people who get their drinking water from a public water system. The requirements applicable to lead are complicated as the source of lead contamination in drinking water is often from the drinking water distribution system (especially service lines from the main line to homes and other users) and plumbing within homes and buildings. Furthermore, there is no "safe" level at which to set a standard. Consequently, the SDWA establishes requirements for water suppliers to ensure corrosion control, test for its effectiveness and take action if trigger levels are exceeded in drinking water at the tap. Under the SDWA these requirements are administered by states when they obtain "primacy" and EPA acts in an oversight role.

Up until April 2014, Flint, Michigan purchased drinking water from the Detroit Water and Sewerage District. The water was treated by Detroit to provide corrosion control for lead. Flint changed its source of drinking water to the Flint River in April 2014, and began treating the water at its own treatment plant before distribution to the public. Almost from the start, Flint experienced problems with its treated water, beginning with taste and odor complaints and concerns about rashes from users, followed by violations of bacteria standards and exceedance of disinfection byproducts standards for total trihalomethane compounds. In February 2015, one of the nominees was informed by a Flint resident of high lead levels in her drinking water and children's blood. This award recognizes the work of the three nominees to investigate and assess the lead in drinking water problems in Flint, identify its likely cause, and advise management in the State and Region of the situation, triggering a remedial response that continues to this day. While the lead issue has yet to be fully resolved in Flint, the actions of the nominees to bring it this far are award-worthy.

Miguel Del Toral is a nationally recognized expert on lead in drinking water and the lead and copper rule, with experience working throughout the Region on problems with sampling for lead in drinking water and controlling lead sources and using that experience to inform revisions to the rule. When notified by the resident, Miguel Del Toral began to work with her to better understand the extent of the problem and factors likely contributing. In the process, Miguel told the resident about Mark Edwards, a renowned lead expert who would also begin working with her to characterize her contamination problem, and he secured the assistance of the Region 5 laboratory to analyze water samples. Over the course of the late winter and spring, Miguel and Jennifer travelled to Flint to meet with the resident, assess the plumbing at her home, provide sample bottles for collection and analysis of her home tap water, and to collect a sample of the resident's service line when it was removed by the city.

Starting in February, together with Jennifer Crooks, the EPA drinking water program manager responsible for Michigan, Miguel immediately brought the matter to the State's attention and the two began to ask questions about how the State was advising Flint about compliance with the lead and copper rule and what sort of corrosion control treatment Flint was providing. The State initially indicated that Flint had an optimized corrosion control program. However, through their persistence and repeated communications with Michigan, by April Miguel and Jennifer were able to confirm that the state had not required Flint to provide corrosion control treatment, but instead simply required compliance testing to see if action levels would be exceeded. Finally, in light of the importance of the compliance testing, Miguel and Jennifer reiterated our long-standing concerns about the instructions the State provides to residents to pre-flush the water lines the night before sampling, knowing that the practice would have the effect of keeping sample results low.

NARRATIVE DESCRIPTION, *CONTINUED*

Tom Poy is the manager of the Ground Water and Drinking Water Branch, responsible for the SDWA programs in all of the Region 5 states. Throughout the process he supported the efforts of Miguel and Jennifer to understand the lead issues in Flint, and to communicate our concerns to Michigan. He also charged Miguel with compiling the results of the work at the Flint residence and other lead testing results from Flint into a report that could be used by management.

Miguel completed the interim report requested by Tom on June 24, and it provided the basis for a series of actions by Division and Regional leadership. The results to date have been compelling:

ò Michigan admitted that it made mistakes implementing the lead and copper rule;
ò Flint was directed by Michigan in August 2015 to begin treatment for corrosion control no later than January 2016; Flint subsequently switched back to Detroit water in October 2015 and is expected to begin providing additional corrosion control treatment in December 2015;
ò EPA nationally issued a clarifying memorandum confirming that corrosion control treatment must be maintained when drinking water sources are changes; and
ò Michigan has committed to eliminate the practice of pre-flushing the night before lead and copper rule compliance samples are taken by residents.

The efforts of the three nominated individuals brought the issues in Flint to light and prompted remedial action on the part of the city, state and EPA. The work described clearly went above and beyond their normal oversight role with a primacy state, and was critically important given the toxicity of lead especially to the young and the disadvantaged community affected by the problem. Throughout the process they have maintained a high degree of professionalism, even as one was branded a "rogue employee" by a State spokesperson. Finally, recognizing how much we rely on States to implement the SDWA, they have approached the issue as a public health problem that had to be resolved -- but resolved with the State, making improvements to the State program rather than condemning it.

CITATION

In 25 words or less, summarize the service or achievement for which this nomination is being submitted. This citation will appear on National Honor Award certificates, plaques, the Ceremony program, and the National Honor Awards website.

For Actions to Identify and Resolve a Public Health Crisis in Flint, Michigan

SUPPORT STAFF STATEMENT

Support staff must be permanent Federal Government employees. Senior Environmental Employment (SEE) program enrollees, students hired under the Student Temporary Employment Program (STEP), and contractors are **not** eligible to receive National Honor Awards.

The activities recognized by this award were conducted with minimal support staff involvement; that received was from a student trainee.

Audit Trail for

Recommendation for EPA National Honor Award

PDF Name:EPA3130-16v8.pdf
Form Number:EPA3130-16
Document Identifier:EPA3130-16-15337222547-TH

SUBMITTED on 12/03/2015 at 10:39:45 PM by CN=Timothy Henry/OU=R5/O=USEPA/C=US

APPROVED on 12/04/2015 at 01:54:16 PM by CN=Tinka Hyde/OU=R5/O=USEPA/C=US

To: Hyde, Tinka[hyde.tinka@epa.gov]; Nelson, Leverett[nelson.leverett@epa.gov]; Hedman, Susan[hedman.susan@epa.gov]; Kaplan, Robert[kaplan.robert@epa.gov]
From: Kelley, Jeff
Sent: Thur 12/17/2015 3:07:56 PM
Subject: From the Free Press: When did state know kids in Flint were lead poisoned?

http://www.freep.com/story/opinion/columnists/nancy-kaffer/2015/12/17/flint-water-lead/77365380/

When did state know kids in Flint were lead poisoned?

Nancy Kaffer, Detroit Free Press Columnist 12:04 a.m. EST December 17, 2015

When did the State of Michigan first learn that kids in Flint had been poisoned by lead in the city's drinking water?

This is one of the most critical questions to answer in the aftermath of a public health crisis that's still unfolding in one of the state's largest cities.

And it shouldn't be a hard question to answer.

But when I asked Gov. Rick Snyder this week, he said he couldn't recall.

Officials at the state department of health say they didn't know what was happening until a Flint pediatrician released her own analysis in September -- even though data previously collected by the state showed the same trend, a reversal in a decades-long decline in the percentage of kids with lead in their blood.

And the health department has been stalling a Virginia Tech University researcher who has been trying to get public records that could show who knew what, and when.

It's ridiculous. Immediately after Snyder acknowledged there was a problem in Flint, the Free Press editorial board encouraged him not to slow-walk the postmortem. Snyder has appointed an after-action task force to find out what happened, and he told the Free Press this week that he's waiting for that report to provide answers to many of these questions -- but answers should certainly be readily available for the man in charge of the state departments involved in this fiasco.

So inconsistency and obfuscation continue.

Regardless of individual culpability, the water crisis in Flint has shown that the state systems designed to ensure safe drinking water and healthy children tilt toward inertia: Despite mounds of data, despite understanding the consequences of lead exposure, Flint was allowed to pursue a reckless water treatment program with the approval of everyone from the Flint City Council to the state Treasurer's Office and the Michigan Department of Environmental Quality.

Flint switched its water supply in April 2014, drawing its drinking water from the Flint River while a new regional water system it plans to join next year is under construction. The local water treatment plant, with the approval of the Michigan Department of Environmental Quality, failed to add chemicals to the river water that would have prevented lead in aging service lines from leaching into the water. All of these decisions were made with the approval of a series of emergency managers, appointed by Snyder to guide the city back to financial stability.

Within months, the amount of lead in Flint's drinking water soared. Lead poisoning is irreversible, and can cause behavioral and developmental problems in children.

After an initial six-month round of testing was complete in January, results showed that the amount of lead in Flint's water was rising, although still within what state officials say they believed were federal safety guidelines. The U.S. Environmental Protection Agency got involved; a memo written by an EPA water regulations manager found fault with both Flint's water treatment and MDEQ's water testing protocol. But nothing happened. State officials continued to insist that Flint's drinking water was safe, even as internal documentation showed that it wasn't.

So, we know that state officials knew that lead in Flint's water was rising, months before officials publicly acknowledged what was happening. But when should the state have known that the percentage of Flint kids with elevated blood-lead levels was growing?

Virginia Tech's Marc Edwards, a MacArthur genius grant recipient who has tested water samples from hundreds of Flint homes, submitted a request under the state's Freedom of Information Act for documents related to elevated blood-lead levels in Flint kids to the state health department in early November. The department notified him later that month that the documents he'd requested were ready. He paid the state's tab, and waited. He's still waiting.

A health department lawyer wrote in an e-mail to Edwards that a "litigation hold" placed by state Attorney General Bill Schuette's office, because of a lawsuit filed by Flint residents alleging the state acted improperly when it switched to river water, meant she couldn't release the documents. But Schuette's office told a Free Press reporter that there was no "litigation hold" (a term Free Press lawyer Herschel Fink, who has decades of experience litigating the rules surrounding public documents, said he'd never heard).

When Edwards informed the lawyer that the AG's office hadn't supported the notion of a litigation hold, the health department lawyer said she needed to review the documents to see if any were subject to attorney-client privilege. Again, Fink looked askance at this explanation: Public documents don't become private by simply virtue of being associated with a lawsuit.

Why is the health department stalling? I'm not sure, and it would be irresponsible to speculate.

For months, state officials denied that the water in Flint had problems. In July, MDEQ spokesman Brad Wurfel told Michigan Radio that folks in Flint could "relax." In an internal e-mail, Wurfel wrote that community groups were keeping people in Flint "hopped up." When Mona Hanna-Attisha, the Flint pediatrician, released her analysis of Flint kids' blood-lead levels, the state's immediate response, across multiple departments, was to attempt to discredit her work. Snyder's spokeswoman said the data used by Hanna-Attisha -- a pediatrician with degrees in medicine and public health -- was "spliced and diced."

And the health department, in response to a Free Press request, sent over a batch of blood-lead testing data that it said would refute Hanna-Attisha's conclusions. But a straightforward reading of the data showed that the state's own blood-lead testing data confirmed the doctor's findings, Free Press data analyst Kristi Tanner found. Yet the state health department continued to deny that the spike in blood-lead levels the doctor identified were anything but a seasonal anomaly. A week later, the health department reversed course, completely endorsing Hanna-Attisha's findings.

Health department spokeswoman Jennifer Eisner wrote in an e-mail: "We work closely with our 45 local health departments across the state to provide public health services. Historically, a request would come to MDHHS from the local health department to conduct epidemiological analysis before our department would have stepped in. As part of our after-action report, we continue to review how we will conduct this process in the future."

But here's the thing: For months, state officials worked diligently, not to investigate the brewing public health crisis in Flint, but to discredit outside experts presenting test results contrary to the state's assertions that everything was fine. And all that time, data that would have shown what was happening was ignored.

Jeff Kelley
Director, Office of External Communications
U.S. EPA Region 5
ph: 312-353-1159

To: Hedman, Susan[hedman.susan@epa.gov]; Peter Grevatt[Grevatt.Peter@epa.gov]; Burneson, Eric[burneson.eric@epa.gov]; Cooper, Tiffany[Cooper.Tiffany@epa.gov]
Cc: Fortin, Denise[Fortin.Denise@epa.gov]; Eileen Deamer[Deamer.Eileen@epa.gov]; Beckmann, Ronna Erin[beckmann.ronna@epa.gov]; Distefano, Nichole[DiStefano.Nichole@epa.gov]; Asher, Jonathan[Asher.Jonathan@epa.gov]; Greene, Ashley[Greene.Ashley@epa.gov]; Kavlock, Robert[Kavlock.Robert@epa.gov]
From: Davis, CatherineM
Sent: Thur 12/17/2015 3:08:21 PM
Subject: Summary of Meetings on Flint with Sens. Stabenow and Peters and Cong. Lawrence

Good Morning,

The meetings yesterday went well and were productive. There were no specific follow ups – just a continued commitment to communicate with their staffs. The topline points were

- Need to prevent this from happening again
- Need to increase/improve outreach to residents to get filters, get water tested and flush lines before using water
- Want to know when the protective coating will be in place in the pipes
- Concern that Michigan does not have the expertise or will to ensure Flint establishes and maintains proper treatment in the long run

Specific questions/points from the meetings were

- Cong. Lawrence
  - This issue is coming from the citizens and people want answers
  - How does a resident know that their water is safe and is meeting standards? (Testing and Consumer Confidence Report)
  - What will come out of the audit of MDEQ's program? (Susan described the plan for the audit)
  - Were there gaps on EPA's end in identifying and/or correcting the problems? (We reviewed EPA's role, and we have been providing and continue to provide timely, critical technical support to the state and the city.)
- Sen. Stabenow

o The state is not doing helpful outreach. The information is not easy to get or easy to understand.

o Is there any kind of PSA that EPA can do? Need to do more to get the word out.

o Does Flint have to change from Detroit water to KWA? (They may be contractually obligated to switch.)

o Can the city really be ready to change water sources again? (The Task Force is working with the state and the city to begin planning for that now, including planning for a "shake-down" period to make sure that the treatment plant is fully operational before switching sources.)

•□□□□□□□□ Sen. Peters

o Has there ever been another system that did not add corrosion control? (This situation is unique, so the LCR did not account for it. The ambiguity of the rule, in terms of the need to continue corrosion control when switching sources, has been resolved.)

o How much will the switch to KWA cost, including the preparations? (We don't have dollar figure, yet, and Flint is still deciding on their approach.)

o Met with the City Administrator, and they do not have access to any funding.

o How soon do you think we'll be able to predict when the corrosion control coating will be in place? (There are too many variables to try to hazard a guess. In DC, it took months.)

Susan, Eric, Tiffany and Peter, please let me know if I left anything out or got anything wrong. Please let me know if you have any questions.

Regards,

Cathy Davis

Office of Congressional and

Intergovernmental Relations

202-564-2703

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Send mail to:

US Environmental Protection Agency

1200 Pennsylvania Ave, NW

MC: 1305A

Washington, DC 20460

To: Davis, CatherineM[Davis.CatherineM@epa.gov]; Hedman, Susan[hedman.susan@epa.gov]; Grevatt, Peter[Grevatt.Peter@epa.gov]; Burneson, Eric[Burneson.Eric@epa.gov]; Cooper, Tiffany[Cooper.Tiffany@epa.gov]
Cc: Fortin, Denise[Fortin.Denise@epa.gov]; Deamer, Eileen[deamer.eileen@epa.gov]; Beckmann, Ronna Erin[beckmann.ronna@epa.gov]; Asher, Jonathan[Asher.Jonathan@epa.gov]; Greene, Ashley[Greene.Ashley@epa.gov]; Kavlock, Robert[Kavlock.Robert@epa.gov]
From: Distefano, Nichole
Sent: Thur 12/17/2015 3:51:17 PM
Subject: RE: Summary of Meetings on Flint with Sens. Stabenow and Peters and Cong. Lawrence

Thanks Susan, Eric, Tiffany, Peter and Cathy for doing these meetings.

Nichole Distefano

Acting Associate Administrator

Office of Congressional and Intergovernmental Relations

Environmental Protection Agency

(202) 564-5200

Distefano.Nichole@epa.gov

From: Davis, CatherineM
Sent: Thursday, December 17, 2015 10:08 AM
To: Hedman, Susan <hedman.susan@epa.gov>; Grevatt, Peter <Grevatt.Peter@epa.gov>; Burneson, Eric <Burneson.Eric@epa.gov>; Cooper, Tiffany <Cooper.Tiffany@epa.gov>
Cc: Fortin, Denise <Fortin.Denise@epa.gov>; Deamer, Eileen <deamer.eileen@epa.gov>; Beckmann, Ronna Erin <beckmann.ronna@epa.gov>; Distefano, Nichole <DiStefano.Nichole@epa.gov>; Asher, Jonathan <Asher.Jonathan@epa.gov>; Greene, Ashley <Greene.Ashley@epa.gov>; Kavlock, Robert <Kavlock.Robert@epa.gov>
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Regards,

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To: Peterson, John[peterson.john@epa.gov]; Hedman, Susan[hedman.susan@epa.gov]; Kaplan, Robert[kaplan.robert@epa.gov]; Hyde, Tinka[hyde.tinka@epa.gov]
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From: Cassell, Peter
Sent: Thur 12/17/2015 5:30:11 PM
Subject: Re: Flint Water Clips Nov. 10, 2015

FLINT DRINKING WATER CLIPS

US. EPA REGION 5 – AS PREPARED BY PETER CASSELL (ORA/OEC/PA) ON DEC. 17, 2015

- EPA Flakes on Flint - Guest Post by Anjali Waikar (NRDC Blog)
- After ignoring and trying to discredit people in Flint, the state was forced to face the problem (Michigan Radio)
- Flint's Water Crisis Just Became A Double Emergency (Huffington Post)

EPA Flakes on Flint - Guest Post by Anjali Waikar (NRDC Blog)

I am thrilled to host this guest post from Anjali Waikar, staff attorney for NRDC's Environmental Justice Program:
If you haven't heard by now, there is an

existing public health crisis in Flint, Michigan, in which an entire city has been exposed to lead contamination. The source? The city's drinking water. The evidence is clear: no amount of lead exposure is considered safe. Even low lead exposures in childhood can lead to a range of lifelong consequences, including intellectual disabilities, lower IQs, and serious medical conditions.

Last month, NRDC notified the City of Flint and Michigan officials that we plan to sue them for violations of the Safe Drinking Water Act (SDWA), the federal law that requires public water systems to test, monitor, and treat drinking water to ensure that it's safe. We served the notice alongside a community group, Concerned Pastors for Social Action, the ACLU of Michigan, and Flint resident Melissa Mays, who have been among those leading the fight to expose this crisis.

In addition to notifying local and state officials about the lawsuit as required under the SDWA, NRDC also petitioned the federal Environmental Protection Agency (EPA) to use its emergency powers to step in and fix this public health crisis.
Astoundingly, last week - nearly two and a half months after we served the emergency petition

calling for immediate action - the EPA responded with a "status update" saying that it intends to hold off on acting on our emergency petition "until such time as the Agency determines that corrosion control treatment is fully optimized for the Flint system." In other words, EPA told us that it's not acting on the emergency petition until Flint deals with the issue on its own. Thanks, EPA.

Specifically, the 'ask' we made to EPA relates to the question of how lead appeared in the water in the first place. One way lead can appear is if the source water coursing through the pipes is corrosive; left untreated, corrosive water can result in lead leaching from the pipes until it makes its way to the faucet. This is what happened when Flint switched its water source from Lake Huron to the Flint River in 2014: the river water was highly corrosive, and the city and governmental officials failed to treat it. After the problem was uncovered, we asked EPA to step in to help Flint with this issue by "optimizing corrosion control" to help reduce that leaching effect, as the SDWA requires.

Make no doubt about it: this is a public-health disaster that requires city, state and federal leadership and cooperation, including more transparency about how Flint's drinking water is tested and treated. The state of Michigan and local officials have already made numerous missteps. For example, they had failed to acknowledge that the water wasn't safe to drink - even after testing found dangerously high lead levels in some residents' tap water. They had dismissed residents' concerns as "near hysteri[cal]" and "irresponsible," despite well-established evidence that there is no safe level of lead exposure. It took months of public outcry, led by community advocates like Melissa Mays, before city and state officials finally conceded that there was a problem with the water.

The EPA's reluctance to exhibit any meaningful leadership role in Flint reflects an unfortunate pattern of government officials in this case absolving themselves of any responsibility or wrongdoing. The people of Flint need less governmental mismanagement and more demonstrated leadership from the city, state and federal government. That is why we have given notice of our intent to sue. Adults are needed in the room--if EPA isn't going to do it, we will.

Flint, MI image by Axel Drainville via Flickr

After ignoring and trying to discredit people in Flint, the state was forced to face the problem (Michigan Radio)

By LINDSEY SMITH • 22 HOURS AGO

http://michiganradio.org/post/after-ignoring-and-trying-discredit-people-flint-state-was-forced-face-problem#stream/0

STEVE CARMODY / MICHIGAN RADIO
Listen
Listening...
18:31
Listen to part three of the Michigan Radio documentary Not Safe to Drink.

If you missed parts 1 or 2 of Not Safe to Drink, you can find them here.

Back in September, research scientists from Virginia Tech came to Flint to break some bad news.

Marc Edwards, PhD, of Virginia Tech University, holds two vials of water, one from Flint and the other from Detroit. Edwards' research helped uncover the serious problems affecting Flint's water supply.
CREDIT STEVE CARMODY / MICHIGAN RADIO
Their tests showed high levels of lead in people's tap water. Lead is especially harmful for young children.

It can lead to things like a lower IQ and attention problems. And once that lead gets into a kid's blood, the damage is done. You can't reverse it.

So the researchers from Virginia Tech warned people in Flint to stop drinking the tap water.

Meanwhile, city and state officials continued to say Flint's water was safe.

"I don't know how they're getting the results they're getting," Michigan Department of Environmental Quality spokesman Brad Wurfel said at the time. "I know that it doesn't match with any of the other surveillance in the area and I think that it, at the end, I don't necessarily think it's as important as the broader issue of reminding people that if you have lead service lines to your home or you've got lead pipes in your home, it's worth being concerned about."

The impression the state repeatedly gave is that the risk to Flint residents was no different than it was when Flint got water from Detroit. It was no different in Flint than any other Michigan city with lead service lines.

But there were big differences between the water Flint got from Detroit and the water it pumped from the Flint River.

The most important one was corrosion control treatment

Corrosion control treatment is what coats the inside of old lead pipes and plumbing, preventing water from corroding lead and other heavy metals from the pipes and getting into people's tap water. Think of it like Pepto Bismol but for pipes.

flint river water more corrosive
When Flint bought water from Detroit, it was treated to control corrosion. But when Flint started pumping water from the river, it didn't use any corrosion control treatment. That's because officials at Michigan's Department of Environmental Quality told the city it didn't need to.

Not right away, anyway.

MDEQ said Flint needed a year or so to test the water first to figure out the right treatment.

Wurfel put it this way:

“It's just a matter of getting it right. You know if I handed you a bag of chocolate chips and sack of flour and said ‘make chocolate chips cookies,’ we’d still need a recipe, right? And they need to get the results from that testing to understand how much of what to put in the water to address the water chemistry from the river which is different from the water chemistry in Lake Huron.”

But all the other water experts I talked to said this wait-and-see approach was a really bad idea.

Without treatment, the protective coating on the inside of the pipes that built up over the years from Detroit’s water likely disappeared. And that’s what caused lead levels to spike in many homes in Flint.

When Lee Anne Walters discovered Flint wasn’t treating for corrosion control last March, she told the federal Environmental Protection Agency. The EPA asked the state about it right away.

At first, the MDEQ said Flint was using corrosion control. But when the EPA asked what kind of treatment it was using, the state confessed: Flint wasn't doing anything.
And at first, the MDEQ said Flint was using corrosion

control. But when the EPA asked what kind of treatment it was using, the state confessed: Flint wasn't doing anything.

Peter Grevatt, who directs the EPA's Office of Groundwater and Drinking Water, says it's really unusual for a city to go from buying completely treated water (what Flint got from Detroit) to treating its own.

It's fair to say state regulators had not dealt with this situation in recent memory.

Because of the lead problems in Flint, Grevatt has sent a clarifying memo to all states, saying basically, you cannot not have corrosion control treatment. It's too important to skip, even for a little while.

"We have about 10 million lead service lines in the ground across the country," says Grevatt. "So we know for certain that there are many communities that have building materials in their distribution systems that could present a hazard to the population. More than 99% of the 52,000 drinking water systems across the country have been able to meet the requirements of the lead and copper rule and protect the public."

The water service line is the pipe that takes water from the water main, in front of your house, to your house. Before the 1960s, many water service lines were made of lead.

Many of the 10 million lead service lines that remain in the country are in older cities. Cities like Flint.

Flint should've tested for lead at homes with lead service lines. People who live in these homes have the highest risk of lead exposure from their water. If a city's water treatment isn't working, that's where it would show up first.

But here's the thing. Flint doesn't even know where its lead service lines are.

A century's worth of records on index cards

In Flint's public utility building, on the side of a hallway, there are six standard filing cabinets. On top of the cabinets is a stack of tattered, yellowing maps.

Flint's records of where its lead service lines are located are still on hundreds of index cards.
CREDIT STEVE CARMODY / MICHIGAN RADIO

Inside the filing cabinets are two incomplete sets of records. Some are like a time capsule, handwritten index cards going back a century.

These index cards, these yellow maps, these are Flint's records.

"It's not ideal but it is what we have," Flint's Water Distribution Supervisor, Robert Bincsik, admitted. "A lot of things that you, I know personally, I mean, I spent a lot of time in the field, so a lot of things you learn, I mean you, we just do from memory. I mean, a lot of this stuff there's a lot of things about the water system I know that are just in my personal memory. We do with what we have and we try to do the best we can and this is what we have."

Other Flint records are visibly decaying.
CREDIT STEVE CARMODY / MICHIGAN RADIO
So when Flint tested for lead in its water last summer, it wasn't testing the homes it was supposed to, mainly because Flint doesn't know exactly where those homes are. Its records of lead service lines live on 100-year-old index cards that aren't organized in any kind of helpful way.

Still, Flint officials relied on those records to pick which homes to test for lead. They also put a shout

out on Twitter. One employee canvassed his neighborhood, going door to door looking for water samples.

It got a little frantic the last weekend in June. Because by early July, Flint had to submit a report to the state.

This report was supposed to measure how much lead was getting into the water in neighborhoods with lead service lines. The numbers from each of those homes would get put through a math formula to arrive at one, very important, number.

That number would determine whether Flint's tap water was above or below a limit for lead set by the federal government.

What happened next kind of defies logic.

The state continues to say the water is safe

The state picked out two of Flint's samples that tested highest for lead -- and it invalidated them.

One of the samples the state tossed was from Lee Anne Walters' house. It was by far the highest lead sample in Flint's report.

“I was told by the EPA that they couldn’t throw my samples out,” she said. “That my samples had to be used.”

Officials with the MDEQ say they invalidated the sample for a technical reason - and of all reasons, it was that Walters had a water filter.

The bottom line is, by throwing these two high lead samples out, Flint’s number shifted. It went from being just above the federal limit, to just below the limit.

It meant city and state officials could continue saying the water was safe. It meant they wouldn’t have to mount a major campaign to tell residents how to protect themselves and their families from lead in their water.

I talked to Jim Sygo about this. He’s the guy the state put in charge of the MDEQ's water division after the department came under fire for its handling of Flint. I asked him -- even if it does turn out it was technically ok to throw out Lee Anne Walters’ sample, it just looks bad, right?

“Well, you know, there’s not a lot I can say about, a lot of things look bad to people until they understand what the process and the procedures are," he said. "I think our biggest point is we were following the requirements of the regulations basically in doing that."

So for awhile here, even after outside experts are raising the alarm about Flint's lead problem, the state kept sticking to its message that the water there was safe.

That is, until a Flint pediatrician decided to put her reputation on the line for Flint kids.

The percentage of kids with elevated lead levels nearly doubled

Dr. Mona Hanna-Attisha heads the Pediatric Residency program at Hurley Medical Center in Flint. She was the first to put together the data to find that blood lead levels of children in Flint had nearly doubled.
Less than a mile from the Flint River sits the Hurley Medical Center, where Dr. Mona Hanna-Attisha heads the Pediatric Residency Program.

She says a longtime friend of hers had heard about Flint's water problems, and suggested she take a look at lead levels in the city’s children.

She first ran the data on Hurley Children’s Clinic patients.

Right away, she noticed a significant increase in the percentage of kids with elevated blood lead levels when she compared samples from before the city switched its water source, and after.

“But our sample size was too small so I couldn’t go screaming from the rooftops,” she said. “This is such a politically messy issue. We are a city chartered hospital. And we get, you know, money from the state. It’s mayoral election season, so it is a mess.”

This group -- not politicians, not activists, but doctors -- called on the city to switch from the Flint River, back to Detroit's water
So Hanna-Attisha got her hands on more data. Pretty much all the data from the area, which goes to Hurley to get processed.

She ran those statistics, and her findings said after Flint switched to the river for its drinking water, the percentage of kids with elevated lead levels nearly doubled. That’s for children age five and younger, who live inside the city limits.

She rechecked her work over and over again.

Before she went public, she needed to be sure about this.

She gathered other area doctors together, and shared the information.

And on a Thursday in late September, they held a press conference to reveal their findings. And this group -- not politicians, not activists, but doctors -- called on the city to switch from the Flint River, back to Detroit’s water, to protect public health.

It was, forgive the pun, a watershed moment.

The dynamic begins to shift in Flint

Protestors in Flint
CREDIT STEVE CARMODY / MICHIGAN RADIO
“I was shocked to see so many people there. I think every mayoral candidate was at this press conference,” Hanna-Attisha remembers.

But state officials quickly tried to discredit Hanna-Attisha.

Over the next few days, state officials tried to convince reporters that Hanna-Attisha's numbers were wrong. Pretty quickly, she started getting calls and emails from reporters asking her to respond to numbers the state was releasing that tried to debunk her work.

Hanna-Attisha was sure she had it right. But she was basically getting a very public takedown from very powerful state agencies.

"I just started becoming almost physically ill," she said. "How can you not second guess yourself? How can you not feel like, oh my god, what did I do?"

She went back over the numbers. The numbers didn't lie.

It took several days, but eventually state officials came around. They rechecked their own numbers and found Hanna-Attisha was right.

Lee Anne Walters stood at the back of the room, during that first press conference, behind the TV cameras, watching Dr. Hanna-Attisha go through her slideshow. The slideshow featured a hypothetical Flint child.

Hanna-Attisha detailed the struggles this child might face after being exposed to high levels of lead.

This child would be at greater risk of needing special education. At greater risk of behavior problems, and ADHD. At greater risk of getting swept up into the criminal justice system.

The switch back to Detroit water came too late for Gavin Walters, whose blood lead level tests showed he has lead poisoning. His family has since moved down to Virginia, but his mom still uses bottled water, waiting on tests to confirm that the tap water there is safe.
CREDIT LINDSEY SMITH / MICHIGAN RADIO
Lee Anne Walters listened to all of these things about this hypothetical child. And she shed a few tears for a very real kid. Her four year old son, Gavin.

"The state nurse told me, oh, I understand your son has lead poisoning, but it's not as bad as it could be, he's only going to lose a few IQ points," she remembers. "No, that's my child. How would you feel if someone told you that about your child? How is that fair to him?"

It took a couple weeks, but eventually, officials in Lansing held their own press conference.

Michigan Governor Rick Snyder and other top state officials conceded. In the interest of public health in Flint, the city would stop using the Flint River for drinking water. After saying for months that Flint couldn't afford to switch back to Detroit's water system, the state, the city and the Mott Foundation managed to scrounge together $12 million.

And on October 16th, with much, much less fanfare, some Flint official pushed the tiny black button at the water plant to reopen the valve to Detroit water.

No more Flint River water.

It was a victory for the people in Flint who'd been fighting for this for more than a year now.

A victory too late for the Walters family

That came too late for Gavin, Lee Anne Walters' son.

In October, the Walters moved from Flint to Virginia. Walters' husband Dennis went from the Navy reserves, back to active duty. The Navy transferred them to Norfolk.

“A big, huge part of the reason why my husband went back to active duty was to get us out of Flint,” she said. “Because of what it was doing and the health concerns and the fact that we weren't being listened to with our child being poisoned.”

Gavin and Garrett Walters.
CREDIT LINDSEY SMITH / MICHIGAN RADIO
Her four year old twin boys are already doing better in Virginia. No more weird skin rashes. Gavin is putting back on some of the weight he lost.

In Virginia, even bath time has returned to normal.

In Flint, the lead levels in the Walters’ water were so high she was told not to let her kids even touch it. So once a week, she’d spend 45 minutes warming up jugs of bottled water on the stove to bathe her twin boys Gavin and Garrett.

Now, she just turns on the faucet. Makes sure the temperature is right. Plugs the tub. Throws in a few plastic Teenage Mutant Ninja Turtles. You know, like most any parent in America.

After everything this mom went through in Flint, you better believe she’s getting her water tested for lead in her new home, some 700 miles away.

But for now, Walters is still so wary about the safety of tap water, she doesn’t let the boys spend any more time in the tub than they need to.

“Look at me,” she tells them, when Gavin and Garrett protest an early end to bath time. “I promise you that once the tests come back and says it’s A-OK you will take a really, really, really long bath. Okay? Okay.”

So while bath time is back to normal in Virginia, the Walters still have a bottled water stash in the garage. She still uses bottled water to make everything from their morning coffee to the instant mashed potatoes at dinner.

“I will not drink it 'til it's tested,” she says. “I will never, ever trust a water source again, just because I'm told to.”

The struggle Lee Anne Walters went through as a mom, it’s put her in places she never imagined.

Countless late nights worrying. Confrontations with government officials, pediatricians, people who just didn't listen, refused to believe there was anything wrong.

Over the next few years, if Gavin has health problems or trouble at school, she'll be wondering: is this a symptom of his lead poisoning?
The experience has changed Walters, and her family too. It's not just the lead poisoning of one of her babies. Over the next few years, if Gavin has health problems or trouble at school, she'll be wondering: is this a symptom of his lead poisoning?

Even now, even though Walters is no longer in Flint, she's still fighting.

She's pushing for accountability from the state, she has testified in front of national panels, pestered U.S. congressmen, insisting the regulations on lead in water get tightened up; in the hopes that no other mom has to go through this nightmare again.

This is the third and final installment of Not Safe to Drink, a special documentary from Michigan Radio. Catch up with Part One and Part Two.

Flint's Water Crisis Just Became A Double Emergency (Huffington Post)

Turns out declaring an emergency doesn't make the emergency go away.
http://www.huffingtonpost.com/entry/flint-water-crisis_5670829de4b0e292150fb022
Arthur DelaneySenior Reporter, The Huffington Post
Philip LewisFellow, The Huffington Post
12/16/2015 01:09 pm ET | Updated 20 hours ago
JeCorey Hawkins had a scary moment with the water in Flint, Michigan, in September. The 22-year-old psychology student had stooped at a drinking fountain at his university when the water took on a grainy texture in his mouth.
"I was very creeped out because I didn't know if I would be sick," Hawkins told The Huffington Post on

Tuesday. He said he and his family, which lives in Flint, hadn't been drinking tap water since earlier this year, though he trusted the University of Michigan's efforts to test and treat water on its Flint campus.

Flint's water problems turned out to be worse than most people realized when a local pediatrician reported in September that more children were being poisoned with lead, a dangerous neurotoxin. The continued problems with the water prompted Flint Mayor Karen Weaver to declare an emergency Tuesday.

"I am requesting that all things be done necessary to address this state of emergency declaration, effective immediately," Weaver said.

It's the second emergency declaration over toxic water for the beleaguered city -- Genesee County, which surrounds Flint, declared an emergency for the same reason back in October.

Jamie Curtis, chairman of the Genesee County Board of Commissioners, told HuffPost he didn't understand what Weaver hoped to achieve with her declaration, saying the mayor hadn't been in touch with any demands. He said the commission would take it up at its Jan. 4 meeting.

"I'm not sure what her declaration is," Curtis said. "What I don't think the people of Flint need ... is nothing more than rhetoric saying, 'I've declared this emergency,' but nothing comes of it."

The county's Oct. 1 declaration warned Flint residents not to drink the water unless it had been specially filtered and confirmed not to have high levels of lead.

The trouble started in 2014 when emergency managers appointed by Michigan Gov. Rick Snyder (R) decided to try saving money by switching Flint's water supply from the Detroit system to the Flint River. Local officials toasted the decision, though residents immediately complained about the taste, smell and appearance of what came from their taps. Most importantly, the new water turned out to be more corrosive, causing lead to leach from Flint's old pipes -- and into the city's kids.

Research published by Flint pediatrician Mona Hanna-Attisha in September showed levels of lead in children's blood spiked at the same time as the water switch. Elevated blood lead levels are especially harmful for children, who can suffer stunted growth and irreversible brain damage. In October, after denying any problem, state officialsacknowledged they failed to treat the water to adjust for its corrosiveness, and Snydersigned legislation switching Flint back to Detroit's water. The city has told residents it could take as long as six months for the water lead levels to decline.

A Dec. 11 report from the Michigan Department of

Environmental Quality said the state found elevated blood lead in 39 of 1,836 Flint residents who had testing done since early October. Blood lead levels can decline in a matter of weeks after a person is exposed to lead.

This week, in response to Weaver's new disaster declaration, a spokesman for Snyder referred HuffPost to previous statements from the governor's office outlining actions already taken, including an Oct. 2 action plan and the Oct. 21 creation of a special task force to investigate what went wrong and recommend solutions.

Hawkins wasn't impressed by the latest emergency declaration.

"It's kinda scary, but at the same time, it's like, the water has been this bad, you know, for all this time," he said. "They just decided to put a name to it at this point."

Hawkins has two younger sisters, 10 and 7 years old, who he said have suffered some hair loss, which is a common complaint among Flint residents who can't avoid bathing with the water.

"There is no reason for them to be losing hair at their age," Hawkins said.

This article has been updated with information from a Department of Environmental Quality report.

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From: Cassell, Peter
Sent: Thur 12/17/2015 5:52:49 PM
Subject: Re: Flint Water Clips Nov. 10, 2015

One additional clip - sorry this didn't appear in my search today

When did state know kids in Flint were lead poisoned?

Michigan governor Rick Snyder talks about the Flint water situation with the editorial board of the Detroit Free Press on Monday, December 14, 2015. Romain Blanquart Detroit Free Press

Nancy Kaffer, **Detroit Free Press Columnist**12:04 a.m. EST December 17, 2015
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(Photo: Ryan Garza/Detroit Free Press)

When did the State of Michigan first learn that kids in Flint had been poisoned by lead in the city's drinking water?

This is one of the most critical questions to answer in the aftermath of a public health crisis that's still unfolding in one of the state's largest cities.

And it shouldn't be a hard question to answer.

But when I asked Gov. Rick Snyder this week, he said he couldn't recall.

Officials at the state department of health say they didn't know what was happening until a Flint pediatrician released her own analysis in September -- even though data previously collected by the state showed the same trend, a reversal in a decades-long decline in the percentage of kids with lead in their blood.

And the health department has been stalling a Virginia Tech University researcher who has been trying to get public records that could show who knew what, and when.

It's ridiculous. Immediately after Snyder acknowledged there was a problem in Flint, the Free Press editorial board encouraged him not to slow-walk the postmortem. Snyder has appointed an after-action task force to find out what happened, and he told the Free Press this week that he's waiting for that report to provide answers to many of these questions -- but answers should certainly be readily available for the man in charge of the state departments involved in this fiasco.

So inconsistency and obfuscation continue.

Regardless of individual culpability, the water crisis in Flint has shown that the state systems designed to ensure safe drinking water and healthy children tilt toward inertia: Despite mounds of data, despite understanding the consequences of lead exposure, Flint was allowed to pursue a reckless water treatment program with the approval of everyone from the Flint City Council to the state Treasurer's Office and the Michigan Department of Environmental Quality.

DETROIT FREE PRESS

Snyder must act on Flint lead crisis

Flint switched its water supply in April 2014, drawing its drinking water from the Flint River while a new regional water system it plans to join next year is under construction. The local water treatment plant, with the approval of the Michigan Department of Environmental Quality, failed to add chemicals to the river water that would have prevented lead in aging service lines from leaching into the water. All of these decisions were made with the approval of a series of emergency managers, appointed by Snyder to guide the city back to financial stability.

Within months, the amount of lead in Flint's drinking water soared. Lead poisoning is irreversible, and can cause behavioral and developmental problems in children.

After an initial six-month round of testing was complete in January, results showed that the amount of lead in Flint's water was rising, although still within what state officials say they believed were federal safety guidelines. The U.S. Environmental Protection Agency got involved; a memo written by an EPA water regulations manager found fault with both Flint's water treatment and MDEQ's water testing protocol. But nothing happened. State officials continued to insist that Flint's drinking water was safe, even as internal documentation showed that it wasn't.

So, we know that state officials knew that lead in Flint's water was rising, months before officials publicly acknowledged what was happening. But when should the state have known that the percentage of Flint kids with elevated blood-lead levels was growing?

Virginia Tech's Marc Edwards, a MacArthur genius grant recipient who has tested water samples from hundreds of Flint homes, submitted a request under the state's Freedom of Information Act for documents related to elevated blood-lead levels in Flint kids to the state health department in early November. The department notified him later that month that the documents he'd requested were ready. He paid the state's tab, and waited. He's still waiting.

DETROIT FREE PRESS

Doctor: Lead seen in more Flint kids since water switch

DETROIT FREE PRESS

MDEQ e-mails show stunning indifference to Flint peril

A health department lawyer wrote in an e-mail to Edwards that a "litigation hold" placed by state Attorney General Bill Schuette's office, because of a lawsuit filed by Flint residents alleging the state acted improperly when it switched to river water, meant she couldn't release the documents. But Schuette's office told a Free Press reporter that there was no "litigation hold" (a term Free Press lawyer Herschel Fink, who has decades of experience litigating the rules surrounding public documents, said he'd never heard).

When Edwards informed the lawyer that the AG's office hadn't supported the notion of a litigation hold, the health department lawyer said she needed to review the documents to see if any were subject to attorney-client privilege. Again, Fink looked askance at this explanation: Public documents don't become private by simply virtue of being associated with a lawsuit.

Why is the health department stalling? I'm not sure, and it would be irresponsible to speculate.

For months, state officials denied that the water in Flint had problems. In July, MDEQ spokesman Brad Wurfel told Michigan Radio that folks in Flint could "relax." In an internal e-mail, Wurfel wrote that community groups were keeping people in Flint "hopped up." When Mona Hanna-Attisha, the Flint pediatrician, released her analysis of Flint kids' blood-lead levels, the state's immediate response, across multiple departments, was to attempt to discredit her work. Snyder's spokeswoman said the data used by Hanna-Attisha -- a pediatrician with degrees in medicine and public health -- was "spliced and diced."

DETROIT FREE PRESS

State data confirms higher blood-lead levels in Flint kids

And the health department, in response to a Free Press request, sent over a batch of blood-lead testing data that it said would refute Hanna-Attisha's conclusions. But a straightforward reading of the data showed that the state's own blood-lead testing data confirmed the doctor's findings, Free Press data analyst Kristi Tanner found. Yet the state health department continued to deny that the spike in blood-lead levels the doctor identified were anything but a seasonal anomaly. A week later, the health department reversed course, completely endorsing Hanna-Attisha's findings.

Health department spokeswoman Jennifer Eisner wrote in an e-mail: "We work closely with our 45 local health departments across the state to provide public health services. Historically, a request would come to MDHHS from the local health department to conduct epidemiological analysis before our department would have stepped in. As part of our after-action report, we continue to review how we will conduct this process in the future."

But here's the thing: For months, state officials worked diligently, not to investigate the brewing public health crisis in Flint, but to discredit outside experts presenting test results contrary to the state's assertions that everything was fine. And all that time, data that would have shown what was happening was ignored.

Why?

Contact Nancy Kaffer: nkaffer@freepress.com. Follow her on Twitter @nancykaffer.

To: Cassell, Peter[cassell.peter@epa.gov]
From: Henry, Timothy
Sent: Thur 12/17/2015 6:11:10 PM
Subject: RE: Flint Water Clips Nov. 10, 2015

Thanks Pete –

There is a link to another article toward the end of this one (Free Press data analyst Kristi Tanner found). I tried to use it but it didn't work. Can you see if you can get the article and send it to me? Thanks, Tim

Tim Henry
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Flint switched its water supply in April 2014, drawing its drinking water from the Flint River while a new regional water system it plans to join next year is under construction. The local water treatment plant, with the approval of the Michigan Department of Environmental Quality, failed to add chemicals to the river water that would have prevented lead in aging service lines from leaching into the water. All of these decisions were made with the approval of a series of emergency managers, appointed by Snyder to guide the city back to financial stability.

Within months, the amount of lead in Flint's drinking water soared. Lead poisoning is irreversible, and can cause behavioral and developmental problems in children.

After an initial six-month round of testing was complete in January, results showed that the amount of lead in Flint's water was rising, although still within what state officials say they believed were federal safety guidelines. The U.S. Environmental Protection Agency got involved; a memo written by an EPA water regulations manager found fault with both Flint's water treatment and MDEQ's water testing protocol. But nothing happened. State officials continued to insist that Flint's drinking water was safe, even as internal documentation showed that it wasn't.

So, we know that state officials knew that lead in Flint's water was rising, months before officials publicly acknowledged what was happening. But when should the state have known that the percentage of Flint kids with elevated blood-lead levels was growing?

Virginia Tech's Marc Edwards, a MacArthur genius grant recipient who has tested water samples from hundreds of Flint homes, submitted a request under the state's Freedom of Information Act for documents related to elevated blood-lead levels in Flint kids to the state health department in early November. The department notified him later that month that the documents he'd requested were ready. He paid the state's tab, and waited. He's still waiting.

DETROIT FREE PRESS

Doctor: Lead seen in more Flint kids since water switch

DETROIT FREE PRESS

MDEQ e-mails show stunning indifference to Flint peril

A health department lawyer wrote in an e-mail to Edwards that a "litigation hold" placed by state Attorney General Bill Schuette's office, because of a lawsuit filed by Flint residents alleging the state acted improperly when it switched to river water, meant she couldn't release the documents. But Schuette's office told a Free Press reporter that there was no "litigation hold" (a term Free Press lawyer Herschel Fink, who has decades of experience litigating the rules surrounding public documents, said he'd never heard).

When Edwards informed the lawyer that the AG's office hadn't supported the notion of a litigation hold, the health department lawyer said she needed to review the documents to see if any were subject to attorney-client privilege. Again, Fink looked askance at this explanation: Public documents don't become private by simply virtue of being associated with a lawsuit.

Why is the health department stalling? I'm not sure, and it would be irresponsible to speculate.

For months, state officials denied that the water in Flint had problems. In July, MDEQ spokesman Brad Wurfel told Michigan Radio that folks in Flint could "relax." In an internal e-mail, Wurfel wrote that community groups were keeping people in Flint "hopped up." When Mona Hanna-Attisha, the Flint pediatrician, released her analysis of Flint kids' blood-lead levels, the state's immediate response, across multiple departments, was to attempt to discredit her work. Snyder's spokeswoman said the data used by Hanna-Attisha -- a pediatrician with degrees in medicine and public health -- was "spliced and diced."

DETROIT FREE PRESS

State data confirms higher blood-lead levels in Flint kids

And the health department, in response to a Free Press request, sent over a batch of blood-lead testing data that it said would refute Hanna-Attisha's conclusions. But a straightforward reading of the data showed that the state's own blood-lead testing data confirmed the doctor's findings, Free Press data analyst Kristi Tanner found. Yet the state health department continued to deny that the spike in blood-lead levels the doctor identified were anything but a seasonal anomaly. A week later, the health department reversed course, completely endorsing Hanna-Attisha's findings.

Health department spokeswoman Jennifer Eisner wrote in an e-mail: "We work closely with our 45 local health departments across the state to provide public health services. Historically, a request would come to MDHHS from the local health department to conduct epidemiological analysis before our department would have stepped in. As part of our after-action report, we continue to review how we will conduct this process in the future."

But here's the thing: For months, state officials worked diligently, not to investigate the brewing public health crisis in Flint, but to discredit outside experts presenting test results contrary to the state's assertions that everything was fine. And all that time, data that would have shown what was happening was ignored.

Why?

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From: Deltoral, Miguel
Sent: Fri 12/18/2015 12:02:36 PM
Subject: Latest Flint Articles

Latest Flint articles

For those that have only gotten snippets of what happened there, this hour-long Michigan Radio documentary has a good 'beginning to end' summary of the events in Flint.

[Michigan Radio]
Listen to "Not Safe to Drink," a special documentary about the Flint water crisis
http://michiganradio.org/post/listen-not-safe-drink-special-documentary-about-flint-water-crisis

Dec 18, 2015

[Huffington Post]
Why Flint's Water Crisis Is So Incredibly Bad
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Dec 17, 2015

[Detroit Free Press]
Harvey Hollins tapped to lead Flint water effort
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Flint's 'toxic soup' polluted water worse for children than thought, doctor says
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Governor's task force on Flint water crisis releases early recommendations
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Water task force wants the Govenor to speed up efforts in Flint
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12-16-2015

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Listen to "Not Safe to Drink," a special documentary about the Flint water crisis
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[NPR Radio]
Michigan Mayor Declares State Of Emergency Over Lead Levels
http://www.npr.org/sections/thetwo-way/2015/12/16/459983352/michigan-mayor-declares-state-of-emergency-over-lead-levels

[Huffington Post]
Flint's Water Crisis Just Became A Double Emergency
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Michigan mom feels "helpless" amid tainted water crisis
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12-15-2015

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In Flint, Mich., there’s so much lead in children’s blood that a state of emergency is declared
https://www.washingtonpost.com/news/morning-mix/wp/2015/12/15/toxic-water-soaring-lead-levels-in-childrens-blood-create-state-of-emergency-in-flint-mich/

[NBC News]
Flint, Michigan, Declares State of Emergency Amid Lead in Drinking Water Scare
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In Flint, Mich., there's so much lead in children's blood they've declared a state of emergency
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Lead levels in water prompt state of emergency in Flint, Michigan
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Flint Mayor Declares Disaster in Hopes of Getting Federal Aid
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From: Cassell, Peter
Sent: Fri 12/18/2015 2:25:17 PM
Subject: Flint Water Clips Dec. 18, 2015

FLINT DRINKING WATER CLIPS

US. EPA Region 5 – as prepared by Peter Cassell *(ORA/OEC/PA)* on DEC. 18, 2015

- □□□□□□□□ Harvey Hollins tapped to lead Flint water effort (Detroit Free Press)
- □□□□□□□□ Gov. Snyder names state point-man for Flint water crisis (Michigan Radio)
- □□□□□□□□ Flint Mayor Declares State of Emergency Due to Water Crisis (WNNT Radio)
- □□□□□□□□ Read letters from governor, task force on Flint water crisis (Flint Journal)
- □□□□□□□□ Governor's task force on Flint water crisis releases early recommendations (Flint Journal)
- □□□□□□□□ Reporter's notebook: Some state officials still in denial or misinformed over Flint River decision (Michigan Radio)
- □□□□□□□□ Michigan Mayor declares state of emergency over lead levels (NPR)
- □□□□□□□□ Why Flint's Water Crisis Is So Incredibly Bad (Huffington Post)

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http://www.freep.com/story/news/local/michigan/2015/12/17/flint-water-coordinator/77474574/

John Wisely, Detroit Free Press 7:46 p.m. EST December 17, 2015

Harvey Hollins, a former vice president of Wayne State University, has been tapped by Gov. Rick Snyder to coordinate the state's response to the Flint water crisis.

Snyder named Hollins this week after a task force recommended a single person or entity to lead the follow-up needed after lead was found in Flint's drinking water system. Experts concluded that the lead leached into the system from old pipes after the city began using Flint River water as its source supply. The city was under state emergency management when the switch was made.

"Harvey is well-versed in the issues and the challenges faced by our cities and will be effective in this role," Snyder said in a letter to a task force appointed to review the crisis. Hollins currently serves as Snyder's director of urban initiatives.

In October, Snyder rolled out a plan to conduct additional water and blood tests in Flint, expedite improvements to the city's water system and increase lead education for residents. Because the responses will come from several state departments, Hollins will coordinate them and inform the task force on their progress.

Snyder also agreed to a task force recommendation that "a readily understood dashboard should be developed that reports on the goals, timelines and assignments,"

Snyder created the task force in the wake of the Flint crisis, which saw lead levels rise in Flint drinking water and eventually in the blood of children.

In April 2013, Flint voted to join the newly formed Karegnondi Water Authority, which plans to draw water from Lake Huron and pipe it across Michigan's Thumb to Flint's water treatment plant. The day after the vote, the Detroit Water and Sewerage Department terminated a decades-long contract with Flint to supply water. Detroit gave the city one year to get a new source. The Karegnondi pipeline isn't scheduled for completion until 2016.

Flint switched to the Flint River water in April 2014 and almost immediately residents complained of foul smelling and tasting water. The city and the Michigan Department of Environmental Quality initially insisted the water was safe, but by September 2014, doctors had already detected a spike in the amount of lead seen in blood samples drawn from Flint children.

Experts found that the water leaving Flint's treatment plant was lead-free, but it was picking up lead from aging pipes in the system. Detroit had solved the problem by adding corrosion control chemicals to the water it sold to Flint, but the City of Flint wasn't adding them.

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http://michiganradio.org/post/gov-snyder-names-state-point-man-flint-water-crisis#stream/0

By Steve Carmody • 19 hours ago

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One man will lead the state’s efforts to deal with Flint’s water crisis.

Harvey Hollins, Office of Urban Initiatives, State of Michigan

Credit State of Michigan

Harvey Hollins is the director of the Office of Urban Initiatives. Gov. Snyder has appointed Hollins to oversee the state agencies responding to Flint’s water crisis.

Errors in how the water was treated (actually, how it wasn't treated) are blamed for unhealthy levels of lead in Flint’s drinking water going undetected for months.

State agencies insisted for more than a year that Flint’s drinking water was safe, after a switch from Detroit water to the Flint River. Outside groups disagreed, tracing rising lead levels in Flint tap water to the corrosive Flint River. Eventually, the state helped pay for the city to temporarily return to Detroit water.

But experts say the city’s tap water is not safe to drink.

The Michigan Department of Health and Human Services and the Michigan Department of Environmental Quality have been working with local agencies to respond to the ongoing crisis.

Hollins’ appointment follows a recommendation from the governor’s Flint water task force. The panel issued an interim list of recommendations this week. The task force says someone needs to coordinate state health and environmental agencies’ activities.

In a letter to the task force, Gov. Snyder describes Hollins as “well-versed” in the challenges facing Michigan cities.

Flint Mayor Karen Weaver welcomes the announcement.

“It should help to have one person be the point person because then you shouldn’t lose track of things. They shouldn’t fall through the cracks,” says Weaver.

Not everyone is happy with the governor's choice.

“Political appointees and public relations people are what got us into this mess, and they aren’t who we need leading us out of it,” says Flint State Senator Jim Ananich, “Anything less than a professional trained in emergency management or public health will not suffice.'

Ananich says he would like to see someone appointed from the Michigan State Police, the Federal Emergency Management Agency or the Department of Homeland Security.

The governor's Flint water task force also says there is a need to establish goals and set timelines now for fixing Flint’s water woes.

The panel’s final report on Flint’s water crisis is due next year.

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http://wwntradio.com/2015/12/18/flint-mayor-declares-state-of-emergency-due-to-water-crisis.html

Carrie Doyle | December 18, 2015, 1:57

Flint Mayor Declares State of Emergency Due to Water Crisis

The mayor of Flint, Michigan says her city is experiencing a "man-made disaster" after a 2014 switch to a new water source.

Officials in Flint, Michigan have declared a state of emergency due to the quality of the city's drinking water. So we know that Flint is not in a position to bear this burden alone and we are asking and looking for state assistance.

Weaver says as she promised during her campaign, she'll continue to fight the city's water issues - and getting a state or federal State of Emergency status will help offset some of the huge costs that have come along with water issues.

More than anything, a city-wide state of emergency is a step toward getting a state or federal declaration. He later told the same publication that the issue will receive a "full hearing" in front of the Genesee County Board of Commissioners on January 4.

The city has since switched its water source, but because Flint used inadequate corrosion controls, the tainted water so badly eroded pipes in the city that any water that flows through them is still unsafe to use.

Flint returned to Detroit's system in October.

Snyder created the task force in wake of the Flint crisis, which saw lead levels rise in Flint drinking water and eventually in the blood of children.

The damage is done.

Before the lawsuits start flying, Bolden said, "The first step is to get these kids tested, including the adults tested - because you know the kids - if you have lead poisoning, that leads to learning disabilities and other challenges". "Flint's water was so caustic; it was damaging auto parts at one of General Motors' engine plants", reporter Lindsey Smith said Tuesday in a documentary about Flint's water.

But experts say the city's tap water is not safe to drink. This comes after months of debate over Flint's water and medical evidence of elevated levels of lead in the blood of some children.

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http://www.mlive.com/news/flint/index.ssf/2015/12/read_letters_from_governor_tas.html

Print Email

By Ron Fonger | rfonger1@mlive.com
on December 17, 2015 at 2:21 PM, updated December 17, 2015 at 4:37 PM Gov. Rick Snyder announces support on Oct. 8 for the city of Flint's plan to switch back to Detroit water due to high lead levels.Flint Journal file photo

Read: FWATF letter to Governor Snyder.pdf

Read Gov. Snyder's response: 15.12.15 Flint Task Force Letter.pdf

FLINT, MI -- Gov. Rick Snyder and members of the Flint Water Advisory Task Force are exchanging ideas about how to handle the Flint lead in water crisis in letters released today, Dec. 17, including the potential appointment of a point person to coordinate ongoing work.

In a Dec. 7 letter to Snyder, who appointed the five-member task force in October, the group acknowledges steps that have been taken to carry out the governor's plan to address damage caused by elevated lead levels in the city's drinking water.

But the group also makes initial recommendations for how to improve the effort, and the governor responds to those suggestions in the letter.

Snyder appointed the task force in October. The group members are Ken Sikkema of Public Sector Consultants, Chris Kolb of the Michigan Environmental Council, Dr. Matthew Davis of the University of Michigan Health System, Eric Rothstein of the Galardi Rothstein Group and Dr. Lawrence Reynolds of Mott Children's Hospital.

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1 / 93

Students at Freeman Elementary School help unload a delivery of water bottles donated by Lanice Lawson, a Davison resident who started a GoFundMe.com page to raise money to bring bottled water to Flint kids on Thursday, Oct. 8, 2015, at Freeman Elementary School in Flint, Mich. At a news conference on Thursday, Michigan Department of Environmental Quality Director Dan Wyant announced that water at three Flint schools tested above 15 parts per billion for lead -- the federal safety standard. Freeman had a sample that tested over six times the federal limit for lead, Wyant said. Danny Miller | MLive.com

Danny Miller | dmille17@mlive.com

Print Email

By Ron Fonger | rfonger1@mlive.com
on December 17, 2015 at 11:04 AM, updated December 17, 2015 at 7:20 PM

FLINT, MI — Current actions to protect the public from lead in water appear to be taking place without a system to measure results and delineate responsibilities, according to a task force charged with reviewing Flint's lead-in-water crisis.

In a letter to Gov. Rick Snyder, who appointed the Flint Water Advisory Task Force in October, the group acknowledged steps, including distribution of free water filters, that have been taken to carry out the governor's plan to address lead levels in the city's drinking water.

But the group also makes initial recommendations for improvement, including that the state address:

The need for the Michigan Department of Health and Human Services and Department of Environmental Quality to set goals for actions in collaboration with local and federal agencies and organizations.

The need for a set of corresponding timelines for the goals.

The need to establish responsibility for meeting the goals in a timely fashion and for contingency plans for the state if the goals are not being met.

The need for clear, regular communication with the Flint community and stakeholder groups regarding action steps and updates.

That a single person or entity — "potentially independent of any one particular state agency" — serve as the point person to coordinate ongoing work.

"While the task force is far from done with our work, the initial review has presented a very disturbing situation that will require many actions to ... help those that have suffered," task force member Ken Sikkema said in a news release issued Thursday, Dec. 17.

The task force also released the governor's response to its letter. In it, Snyder said he has seen progress and recognizes "there is more work that must be done to ensure that this progress continues" regarding the Flint water crisis.

The task force letter said it is important that someone "potentially independent" of any state agency be appointed to coordinate ongoing activities and report on mitigation measures.

Snyder's letter recommends Harvey Hollins, the governor's director of the Office of Urban Initiatives, act as coordinator of Flint water work.

"Harvey is well-versed in the issues and the challenges faced by our cities and will be effective in this role," the letter said.

The governor's letter said he supports the suggestion of a dashboard approach to making information "about our work and progress more accessible to the Flint community" and that he has retained Chris DeWitt, a former Democratic strategist, to strengthen community outreach and "make sure residents have access to the information they need."

State Senate Minority Leader Jim Ananich, D-Flint, said in a statement Thursday that Flint needs a trained emergency management professional to coordinate assistance efforts here.

"Political appointees and PR people are what got us into this mess, and they aren't who we need leading us out of it," Ananich's statement said. "Anything less than a professional trained in emergency management or public health will not suffice."

The governor announced creation of the task force Oct. 21, the same day U.S. Rep. Dan Kildee, D-Flint, and Ananich called for the U.S. Environmental Protection Agency to carry out a similar review.

The EPA later agreed to carry out its own review, which also is ongoing.

Members of the state task force on Flint water are Sikkema, of Public Sector Consultants; Chris Kolb, of the Michigan Environmental Council; Dr. Matthew Davis, of the University of Michigan Health System; Eric Rothstein, of the Galardi Rothstein Group; and Dr. Lawrence Reynolds, of Mott Children's Hospital.

Sikkema and Kolb are co-chairmen of the task force.

Dave Murray, press secretary for Snyder, said in an email Thursday the governor and administration continue to cooperate with task force members, "who are making a thorough review of all city, state and federal responses and procedures related to water in Flint."

"We also expect members will make recommendations that could address potential challenges in other cities moving forward," the statement said. "Today's interim report and recommendations are one step in that process. We appreciate that the task force members are investing their time and expertise to help us ensure that people in Flint — and across our state — will have access to safe, clean water."

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http://michiganradio.org/post/reporter-s-notebook-some-state-officials-still-denial-or-misinformed-over-flint-river-decision#stream/0

By Lindsey Smith • 21 hours ago

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I don't blame the governor's press secretary for not understanding exactly who made the decision to have Flint pump its drinking water from the Flint River. It was a complicated-decision making process with multiple key players that lasted at least a few months.

Back in the spring of 2013, when this decision was made, Governor Rick Snyder's press secretary, Dave Murray, was one of "us"; a journalist working for The Grand Rapids Press/MLive.

He was one of the familiar faces around town among the smaller group of reporters in Michigan's second largest city. And let's face it; none of us were paying close attention to the water decision that was going on 100 miles away in Flint. It wasn't our beat, after all.

But for the last 12 weeks or so, pretty much all I've done is try to answer a single, important question: How in the world did the "Flint water crisis" happen?

The answer is so complex I couldn't cram all the details into the one hour-long documentary I was tasked to write. Shameless plug – you can listen to the documentary "Not Safe to Drink" here.

The first draft of the documentary included a very lengthy section detailing who made the decision to switch to the Flint River and the months long process that determined the city's fate.

But it got cut out.

It got cut because we decided that detailing the city and state officials who had a hand in that decision, to some degree, doesn't really matter. The bottom line is that the state regulatory agency responsible for overseeing water quality, the Michigan Department of Environmental Quality, should have ensured that water was safe to drink. The MDEQ failed on that front, we now know, to disastrous effect. We think it's in the public's interest to understand how that happened.

By not requiring Flint to treat the river water in a way that would've helped keep lead out of the drinking water, MDEQ became the most important focus for the "accountability" portion of this documentary.

Through months of research and lengthy, recorded interviews, my editors and I came to the conclusion that, had the water experts (specifically officials at MDEQ and the engineering firm Flint's emergency manager hired), done a better job, then who made the decision to go to the Flint River shouldn't have mattered. If they would've required corrosion control treatment, treatment any normal large city in America uses, treatment that the federal government has now made completely clear is absolutely required, the lead problems Flint has faced may not have ever happened.

I don't mean to be flip. Of course it matters who made the decision to switch to the river. But after that first edit, we decided we weren't going to spend one third of an hour-long documentary hashing out the "who-did-what-when" on the financial side of this decision if the more imperative complex issue we needed to convey was the major screw-up on the water treatment side of the decision.

So that five-page-long chunk in the first draft of the documentary about the financial decision that was made in the spring of 2013 got cut down to the following:

Flint was broke -- like “nearing bankruptcy” broke.

Flint had a string of these state-appointed financial hatchet men during this time -- trying to get the city’s finances straight.

They were looking for savings everywhere, and they had their eyes on the expensive water they buy from Detroit, so when Genesee County decided to build a new water system, one that’s separate from Detroit, Flint was definitely interested in joining.

Once it was clear Flint could save millions of dollars a year with the new system, Flint got on board.

But there was a catch. The new water system wasn’t built yet, and it wouldn’t be ready until the summer of 2016, at the earliest.

And once Detroit realized Flint was going to leave its system, it jacked Flint’s water rates up even more – to the tune of $10 million over the two years the new pipeline would be under construction.

So in the spring of 2013, Detroit kind of had Flint over a barrel.

It was state treasury officials who got creative.

Their solution?

Forget Detroit, Flint’s emergency manager said. Let Flint get really cheap water from the Flint River.

The governor’s press secretary, Dave Murray, called me Wednesday morning to take issue with this account. “That is simply not accurate,” he told me. With less than four hours until the documentary aired, I didn’t have time to argue. I had already had this discussion ad nauseam with his predecessor, Sara Wurfel, and with Treasury Department spokesman Terry Stanton. I referred Murray to my news director, Vincent Duffy.

The governor’s press office followed up on this call with a specific complaint to me and the news director. They didn’t think this part was accurate:

It was state treasury officials who got creative.

Their solution?

Forget Detroit, Flint’s emergency manager said. Let Flint get really cheap water from the Flint River.

In an email, the governor’s Deputy Press Secretary Anna Heaton wrote:

"That's not factual information for your readers and listeners. In fact, in the spring of 2013, the Flint City Council, and Mayor Walling, made the decision to switch to Karegnondi, and in the meantime, take some of its water from the Flint River. This was approved at the city council meeting in a 7-1 vote on Monday, March 25, 2013. Their decision was then sent to the emergency manager to approve. In fact, at the time, Flint City Council President Scott Kincaid said "I've never been a fan of staying with Detroit."

It is critical to note that Flint and Genesee Co. had been in discussions to start their own water authority for years before this decision was reached. They had been gathering information on a switch and leaning toward that decision far before the Gov. was even in office."

Here's what's true about what the governor's press folks are saying.

Yes, Flint had an interest in joining the new Karegnondi Water Authority before Governor Rick Snyder was in office.

Yes, Flint City Council voted on March 25, 2013 to join the Karegnondi Water Authority.

This is why I wrote "Once it was clear Flint could save millions of dollars a year with the new system, Flint got on board."

But the governor's press folks are either sorely misinformed or willfully blind to what happened after that vote.

Months and months after dealing with us reporters picking apart this decision, they still don't get it. I'm not breaking any news here. They should know this stuff by now.

Nowhere in that vote or other votes did Flint City Council say, "We support getting water from the Flint River." Yes, there was one councilman who did openly support that. But as a board, that vote never happened. Flint leaders never made that call (not that they had the authority to make such a call at that time anyway.)

Some state officials continue to confuse Flint's vote to join the Karegnondi Water Authority with the state appointed emergency manager's decision to temporarily switch to the Flint River.

I gotta be honest, after all the research I had done, I had a really rough time coming to terms with the fact that I simply did not have time in this documentary to recount the ins and outs of this decision more in depth. Even though it is super complicated, perhaps now is a good time to drag out the details.

For the sake of Michigan Radio's readers and listeners, and in response to the folks at the governor's press office, I've taken another crack at breaking down this part of the story.

Here's what happened when, and who was in charge:

July 2011: Rowe Engineering presents Flint City Council with a study evaluating the city's options for drinking water. The high cost of water prompts city officials to study their options. The study looks at three options; staying with Detroit's water, switching to the Flint River, and getting on board with the KWA, the new water system that's now being built in Genesee County. The study shows staying with Detroit is the most expensive option in the long run. Switching to the Flint River is cheaper than Detroit in the long run, but making it a permanent source would require more than $60 million up front; to remove dams, to find ways to dispose of residuals from the water treatment process, and to upgrade the city's water treatment plant. The most favorable option, the study found, was going to KWA.

December 2011: Financial reviews show Flint's finances are so bad, Governor Rick Snyder appoints Flint's first emergency manager. To start it was Michael Brown, but there are four different guys who hold this position over the next four years.

Fast forward a year, to **December 20, 2012.** Because of the financial emergency, the decision about the best, most affordable water for Flint hasn't been made yet. But according to a report commissioned by the state treasury's office, on this day, there was a meeting with treasury and city officials. They discuss Flint's water options again. The report says that, on this day, it was decided that treasury officials would study only two options; staying with Detroit water or switching to KWA. Here are the key paragraphs on page two of this report, which comes out in **February 2013**:

"… An option for the Flint (Water Treatment Plant) to supply the City of Flint without being supplied from either (Detroit) or KWA was initially considered. The preliminary investigation evaluated the cost associated with the required improvements to the plant and to the Flint River dam system. Although it appeared that this was a viable option, Flint in a meeting on December 20, 2012 with the Treasury, stated that the City did not want to pursue the option and it is no longer being considered."

One thing to note, Treasury Department Spokesman Terry Stanton did point out that they also tried to figure out a way to blend Detroit's water with the Flint River water, to save the city money. But those talks broke down.

Detroit Water and Sewer Department Board Chair Jim Fausone told me that's because Detroit was concerned that Flint wouldn't be able to treat the river water properly. If there were any problems at people's tap, it could be difficult to figure out which water source was causing problems.

March 2013: Flint City Council votes in favor of joining KWA. The board does this even though it has no authority with the state emergency manager in place.

April 2013: State treasury officials approve Flint's move to join KWA. The same month, Detroit sends Flint a letter announcing Detroit would end Flint's long term contract to buy water, citing a legal clause in the contract. Many times, spokespersons for

Michigan's Treasury Department, the Governor's Office, and even Flint's emergency managers themselves have erroneously claimed this is the point where Detroit "cut Flint off" from the water supply. Yes, Detroit notifies Flint it will give the city one year at the long term contract rate structure, but after that, it would need to negotiate another contract. The other, shorter term options were more expensive than the longer term deal. Detroit, by no means, kicked Flint off its water system, as many state officials have claimed.

June 2013: Flint Emergency Manager Ed Kurtz hires an engineering firm "for assistance in placing the Flint Water Plant into operation using the Flint River as a primary drinking water source for approximately two years and then converting to KWA." Later that week, people from that engineering firm, Michigan's Department of Environmental Quality, Genesee County and Flint's water department met to determine if temporarily switching to the Flint River was feasible. They decided "the Flint River would be more difficult to treat" but that it was a viable source. They said there would be "obstacles" to get everything in place before April 2014, when Flint's contract with Detroit would end, but that it was "reachable." Lastly, they decided, "with support from LAN engineering which works with several water systems around the state, quality control could be addressed." I tried to talk to LAN engineering. They declined to comment.

March 2014: Flint's Emergency Manager Darnell Earley sends a letter to Detroit's water system, refusing the final short term contract offer. It acknowledges the option to continue buying water from Detroit. But these short term offers would've cost Flint at least $10 million more over the two years it would take to build the new water system Flint will join next year. Instead, Earley writes, "the City of Flint has actively pursued using the Flint River as a temporary water source." The only people with any authority over this decision were Flint's string of emergency managers.

April 2014: Michigan's Department of Environmental Quality signs permits that approve "Improvements to the City of Flint Water Treatment Plant to enable treatment of Flint River water on an interim basis until the KWA Lake Huron Water Supply is available for connection and use by the City of Flint."

Again, I'm not breaking any major news with this.

The ACLU's Curt Guyette has been nailing this point home for a while now.

Flint officials toast each other as they flip the switch to get water for the city from the Flint River.

Credit WNEM-TV

Through his Freedom of Information Act Requests, he discovered the letter from Darnell Earley, declining Detroit's offer to purchase water.

He's also caught numerous officials on video saying Detroit "cut Flint off" from the water system. Here's a video that gives you an idea of the spin machine at work.

The Detroit Free Press did a breakdown in late November too. They couldn't find a document that determines exactly which person made the call to put the Flint River back on the table as a viable option. But, ultimately, Paul Egan highlighted the same two important documents I saw – the February 2013 report for treasury that says the Flint city leaders were no longer considering the river as an option and then the June 2013 decision from Ed Kurtz, to hire an engineering firm to prepare Flint's Water Treatment Plant for the Flint River.

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http://www.mprnews.org/story/2015/12/17/flint-michigan-mayor-lead-in-water-emergency

Environment Merrit Kennedy · NPR · Dec 16, 2015

A Flint resident cries out during the filing of a class action lawsuit against city and state government officials on Monday, Nov. 16, 2015. MLIVE.COM /Landov

The mayor of Flint, Michigan says her city is experiencing a "man-made disaster" after a 2014 switch to a new water source.

She says the city's usage of water from the Flint River elevated blood lead levels in children, leading to irreversible health effects.

In a televised interview on The Rachel Maddow Show on Tuesday, Mayor Karen Weaver called her choice to declare a state of emergency "the only step we could take at this point," adding that the city is seeking state and federal funds in light of health problems of the city's children.

"We know that Flint is not in a position to bear this burden alone, and we are asking and looking for state and federal assistance. And the only way that we were going to happen was to declare a state of emergency, and hopefully that gets it to the county which will get it to the state where the governor can make it federal."

But it's not clear that Genesee County will support Mayor Weaver's request for federal disaster aid, which is a crucial step in elevating the issue to the federal level, The Flint Journal-MLive reported Tuesday. County board Chairman had initially said "that there's no need for the state of emergency" because "nothing more can be done." He later told the same publication that the issue will receive a "full hearing" in front of the Genesee County Board of Commissioners on January 4.

The Wall Street Journal explained the problem began when Flint switched to a new water source:

"The city of nearly 100,000 has been battling a water crisis for months after it became increasingly clear that switching its water source to the Flint River in April 2014 caused lead levels in drinking water to rise. The temporary switch was part of a cost-cutting move away from Detroit's water system before Flint could begin receiving water from another authority in 2016.

The city stopped using the Flint River as its water source in the fall, after the extent of the contamination became apparent."

High levels of lead are especially harmful to children and pregnant women, and can cause "learning disabilities, behavioral problems and mental retardation," the World Health Organization says.

A study conducted by a local medical center released in September showed that 2.1% of children 5 and under had elevated blood lead levels before the switch to Flint River water, compared to 4.0% after the switch.

Dr. Mona Hanna-Attisha, a doctor in Flint who discovered the elevated lead levels, told NPR's Michel Martin in October that the health impact on these children will be permanent:

The damage is done. Lead is a irreversible neurotoxin, so once you are exposed, you're exposed. It crosses the blood-brain barrier. It impacts cognition and behavior and mental health and lifetime, you know, potential, so the damage is done. So the other thing - our research entirely underestimates the risk because lead in water disproportionally affects infants on formula.

Michigan Radio gives us a sense of just how destructive this water is. "Flint's water was so caustic; it was damaging car parts at one of General Motors' engine plants," reporter Lindsey Smith said Tuesday in a documentary about Flint's water.

The station reported last month that four families have filed a class action lawsuit against the city and state. Attorneys are "hoping to sign up tens of thousands" more to seek damages for their health problems.

And the situation is still dangerous for Flint residents, the city's mayor says. The problem with the new water source was that it was damaging and corroding the water pipes, releasing lead into the water. Mayor Weaver told Rachel Maddow that even though the city has switched back to their original water supply, "when the water comes through, the lead leaches out—and that's why there's still a problem with lead."

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http://www.huffingtonpost.com/entry/flint-lead-poisoning_56732a38e4b06fa6887ca710

An entire generation could suffer.

12/18/2015 06:00 am ET

Arthur Delaney Senior Reporter, The Huffington Post

Philip Lewis Fellow, The Huffington Post

An unknown number of children in Flint, Michigan, were exposed to dangerous amounts of lead in their drinking water because of a cheapskate decision to switch the city's water source in 2014.

Lead poisoning is less prominent as a public health concern than it used to be thanks to a decades-long effort to reduce lead exposure in children, especially from paint and gasoline. But lead poisoning itself is no less serious, because once a small child is poisoned, they can't be cured.

"We've been so aggressive about this because of what it can do to the whole life course trajectory of a child," Dr. Mona Hanna-Attisha, a Flint pediatrician, told "So That Happened," the HuffPost Politics podcast.

"Because [lead is] a neurotoxin, it affects your brain, it affects your development, it drops your IQ," Hanna-Attisha said. "It also causes problems with behavior. Increases the incidence or likelihood of violent offenses, aggressive behavior."

Indeed, researchers have shown a correlation between environmental lead levels and crime rates over the years.

When Flint switched its water source from the Detroit system to the Flint River last year as a way to save $5 million, the government failed to adjust for the corrosiveness of the new water. In August, Marc Edwards, a civil engineering professor from Virginia Tech, led a team that conducted its own sampling of water from Flint homes. Their investigation showed the water contained dangerous amounts of lead.

"In late August, we were hearing reports from a Virginia Tech team of elevated levels of lead in the water," Hanna-Attisha said. "We rightly freaked out, and that's when we decided to do our research."

Only after Hanna-Attisha reported elevated blood lead levels in Flint kids did the local government declare an emergency and tell people to stop drinking the water. Not that you needed a lab to know something was wrong with it.

"Right when the water switch happened, people complained about this water," Hanna-Attisha said. "It smelled gross, it looked gross."

Even Flint residents who may not have suffered acute lead poisoning, who aren't filing lawsuits against the city and state governments, have been burdened by the bad water.

"We have to buy bottled water to cook with, brush our teeth, drink," Flint resident Brion Morris, 31, told HuffPost. "And then we have two dogs, so, to keep my dogs from getting sick, I give them bottled water, too."

Morris' fiancee, Deshia Thompson, lamented that they can't avoid bathing with the water.

"We haven't been sick, but the water bothers my skin. It makes me itch whenever I come out the shower," Thompson, 38, said in an interview. Rashes and hair loss have been a common complaint among Flint residents.

In October, Michigan Gov. Rick Snyder (R) -- who had appointed the emergency managers that oversaw the switch -- signed legislation switching Flint back to Detroit's system. But it could take half a year for the lead levels to decline, and Morris said the water coming out of his taps is still nasty. Flint mayor Karen Weaver declared a state of emergency on Tuesday.

"It shouldn't have took this long for them to took responsibility and to let people know that this is serious," Morris said. "That's what we elect office to do, is to inform us of things that we need to know, and to help us to get those things rectified. If they can't do that, they shouldn't be in office."

As for the kids confirmed to have had high levels of lead in their blood, Dr. Hanna-Attisha said the repercussions will be felt over a lifetime.

"In seven years, when a kid gets diagnosed with ADHD, that mom is going to have that guilt -- was this because of the lead? Was this kid always going to have ADHD? We will never be able to pinpoint exactly what the lead caused."

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From: Deltoral, Miguel
Sent: Mon 12/21/2015 12:20:11 PM
Subject: Latest Flint Articles

and one older one that I missed...

12-20-2015

[m-live]
Mayor pins Flint's hopes on water disaster declaration
http://www.mlive.com/news/flint/index.ssf/2015/12/flint_mayor_karen_weaver_pin_h.html

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“Tens of thousands” damaged by Flint water crisis, class action lawsuit attorneys contend
http://www.eastvillagemagazine.org/2015/12/20/tens-of-thousands-damaged-by-flint-water-crisis-class-action-lawsuit-attorneys-contend/

12-19-2015

[NPR]
High Lead Levels Force State Of Emergency In Flint, Mich.
http://www.npr.org/2015/12/18/460234581/high-lead-levels-force-state-of-emergency-in-flint-mich

[Al-Jazeera]
Who’s responsible for poisoning Flint’s water supply?

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Michigan’s Water Problems Should Be a Wake-up Call to America
http://harvardkennedyschoolreview.com/michigans-water-problems-should-be-a-wake-up-call-to-america/

12-18-2015

[Rachel Maddow]
Flint toxic water tragedy points directly to Michigan Gov. Snyder
http://www.msnbc.com/rachel-maddow/watch/toxic-water-tragedy-points-directly-to-snyder-588635715518

10-29-2015

[eclectablog.com]
UPDATED: Flint Mayor Dayne Walling talks about Flint’s water crisis, Emergency Managers, and the State government [includes interview with Walling]
http://www.eclectablog.com/2015/10/interview-flint-mayor-dayne-walling-talks-about-flints-water-crisis-emergency-managers-and-the-state-government.html

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From: Bassler, Rachel
Sent: Mon 12/21/2015 5:36:07 PM
Subject: Flint News Clips

Flint Drinking Water Clips

Rachel Maddow Slams Rick Snyder For 'Poisoning Flint's Children' With Water Crisis

Mayor pins Flint's hopes on water disaster declaration

Rachel Maddow Slams Rick Snyder For 'Poisoning Flint's Children' With Water Crisis

http://detroit.cbslocal.com/2015/12/19/rachel-maddow-slams-rick-snyder-for-poisoning-flints-children-with-water-crisis-video/

December 19, 2015 9:44 PM

DETROIT (CBS Detroit) — The ongoing saga of Flint's struggles with its water supply has been well-documented in local circles, but is now getting some national attention.

Rachel Maddow of MSNBC hosted a segment on her show Friday that outlined the timeline of everything that's happened in Flint over the past 17 months. She also spoke about governor Rick Snyder's legislation calling for the appointment of managers as he sees fit.

Maddow said that Snyder's appointment of emergency managers in Flint was directly responsible for the crisis that saw rising levels of lead in drinking water when the city switched from the Detroit water supply to the Flint River.

"Michigan made a decision with Rick Snyder a few years ago to do something very, very radical to the way we govern ourselves as Americans, something that nobody else has done," Maddow said about the emergency manager law.

Flint mayor Karen Weaver declared a state of emergency this week after new blood test results showed that 21 and nine adults had elevated lead levels in their blood.

"This is the personal health equivalent of getting shot," Maddow said. "This is not something that happened over a long period of time. They flipped a switch to turn off the spigot last April and turn on a different spigot. The spigot they turned on poisoned the . The kids of Flint, Michigan have been poisoned by a policy decision.

"Is Flint habitable anymore?" Maddow asked.

Test results also showed that lead levels in the water are lower now than they were over the summer, before Flint switched back to Detroit's water supply in October.

"In Flint, remember what this problem is technically — corrosion by that river water that came through," Maddow said. "The pipes are scoured out by untreated river water. Who knows how long they're going to keep leaching lead."

Genesee County had earlier declared a public health emergency in the area and told residents not to drink unfiltered tap water. FEMA delivered about 7,400 gallons of bottled water to a local bank this week.

"Michigan made a decision with Rick Snyder a few years ago to do something very, very radical to the way we govern ourselves as Americans, something that nobody else has done," Maddow said. "Now we're getting in the first results of what they have done. I did not expect those to be blood test results from kids, but that's what they are, that's what Rick Snyder did.

Mayor pins Flint's hopes on water disaster declaration

http://www.mlive.com/news/flint/index.ssf/2015/12/flint_mayor_karen_weaver_pin_h.html

By Ron Fonger | rfonger1@mlive.com
on December 20, 2015 at 5:00 AM, updated December 21, 2015 at 8:53 AM

FLINT, MI -- The federal government may have never recognized a man-made water crisis like Flint's as a disaster before, but asking for the assistance has been Mayor Karen Weaver's plan since before she was elected Nov. 3.

"Our city is in a crisis -- a water crisis," Weaver said. "So far, what we've had are Band-Aid fixes, (and) it's not enough ... I don't see any other option."

On Monday, Dec. 21, the mayor plans to meet with Genesee County Board of Commissioners Chairman Jamie Curtis and others involved in emergency planning to discuss the city's incident response plan, a step-by-step outline aimed at addressing the water crisis.

"Things are falling together nicely," she said Friday, Dec. 18. "(The plan) is going to say, 'We need this, this and this,' and attach numbers where we can."

The Michigan Emergency Management Act outlines the process for seeking federal disaster assistance, which starts with the local declaration of a state of emergency. In that statement, a local jurisdiction says it has sustained widespread or severe damage, injury or loss of life.

Communities that have typically been granted disaster aid have suffered from natural disasters such as severe storms, flooding and fires, but Weaver believes that Flint's disaster with lead in its water is just as devastating.

There are cases in which less-common disasters have been recognized with federal aid, including one for severe hardship to the salmon industry in Alaska in 1953, a chlorine barge accident in

Louisiana in 1962 and dam failure in Colorado in 1973, according to FEMA records.

"The president can declare an emergency or major disaster for any natural or manmade event that the president determines has caused damage of such severity that it is beyond the combined capabilities of state and local governments to respond," FEMA spokesman Mark J. Peterson said in an email to The Flint Journal-MLive, "We're being positive and optimistic" with Flint's application, Weaver said.

The city's state of emergency says, "Flint children have experienced increased blood lead levels since the switch to the Flint River, and this damage to children is irreversible and can cause effects to a child's IQ ... (resulting) in learning disabilities and the need for special education and mental health services and an increase in the juvenile justice system."

Weaver has so far not assigned a dollar figure to damage done to children who drank Flint River water since April 2014, and she said this week that Flint's old water distribution system was also damaged by corrosive river water. "So that's where we are (also) going to need some help."

Although Flint City Council members have been generally supportive of Weaver seeking the disaster declaration, and the Michigan Legislative Black Caucus is supporting the request, Flint City Councilman Josh Freeman said he doesn't believe it will be granted.

"It's giving false hope to people that the problem is going to fixed" with a disaster declaration, Freeman said. "At some point we have to stop playing politics and start governing."

The councilman said state and federal officials are unlikely to send disaster relief to Flint because other parts of the county and the state have childhood blood lead levels -- from all sources -- that are similar to children in Flint.

"Maybe I'm wrong. Hopefully I'm wrong," he said.

FEMA's Web site shows 77 disaster declarations nationwide so far in 2015 and eight current disasters.

The current declarations cover damage caused by fire in California; severe storms and flooding in Wyoming; straight-line winds, flooding and severe storms on the Pine Ridge Indian Reservation in South Dakota; severe storms, tornadoes, straight-line winds and flooding in Texas; severe storms, tornadoes, straight-line winds and flooding in Oklahoma; severe storms, tornadoes, straight-line winds and flooding in Arkansas; and severe storms and flooding in South Carolina.

To reach the desk of President Obama, Weaver's disaster declaration must be approved by county Chairman Curtis and both officials must determine that the disaster is beyond the capabilities of the city or county to handle. Curtis has said he is "fully on board" to do whatever he can to help the city of Flint.

In Michigan, all requests for assistance are channeled through the Michigan State Police, Emergency Management and Homeland Security Division. The MSP reviews requests and makes recommendations to the governor, according to Ron Leix, a spokesman for the division.

The governor has the authority to mobilize state agencies to provide assistance, and if the state cannot cope with the disaster, Gov. Rick Snyder could request assistance through FEMA.

The federal agency makes disaster recommendations to the president.

State Rep. Sheldon Neeley, D-Flint, urged Snyder to get Flint's application for help to the president as quickly as possible.

"Issuing a health emergency is the most responsible thing to do," Neeley said in a news release. "This is a public health crisis, and our children are most at-risk. A state-declared health emergency will allow the city to access federal funding."

Flint water.pdf

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From: Kelley, Jeff
Sent: Mon 12/21/2015 6:51:49 PM
Subject: Al Jazeera: Will the water in Flint, Michigan, ever be safe again?

Video includes interview with Dan Wyant …

http://america.aljazeera.com/watch/shows/america-tonight/articles/2015/12/21/water-flint-michigan-safe.html

Will the water in Flint, Michigan, ever be safe again?

Michigan environmental agency head is "concerned" but won't apologize to Flint residents for tainted water

December 21, 2015 12:30PM ET

by Lori Jane Gliha & Sameen Amin

FLINT, Mich. – The head of Michigan's Department of Environmental Quality says he hasn't regained the public's trust after a water crisis in the city of Flint left tens of thousands of residents at risk of lead exposure.

Dan Wyant, the director of MDEQ, told America Tonight that his agency, which is tasked with ensuring safe drinking water in Michigan, must provide more transparency when it comes to the state's water testing processes.

"We all need to do better … the state, the city and the federal government, our partners at [the Environmental Protection Agency]," he said. "And we have a plan in place that is addressing the issue that will eliminate the lead exposure and ensure safe drinking water in Flint."

Wyant said the governor's 10-point plan, which includes offering water filters, lead education and water testing to Flint residents, will provide short-term and long-term relief.

"It's important that we recognize Flint deserves safe drinking water, and we're committed to ensuring that is the case," Wyant said. "What is at issue is lead-service lines [and] lead fixtures."

While many have pointed the finger at the state for the problems in Flint, Wyant stopped short of offering a public apology to residents.

"I recognize Flint is anxious and concerned about [the water situation]," he said "and I feel the plan that we have addresses the issue, and we're committed to seeing that plan through."

Wyant has also made changes to his department in the wake of the Flint water crisis while the department is under review. In an exclusive interview, he told America Tonight that he reassigned the department's chief of drinking water and municipal assistance, Liane Shekter Smith, to a new post. She now helps process Freedom of Information Act requests, despite the fact that some requests will likely pertain to her own actions, internal records and involvement in the Flint crisis.

Many Flint residents, health officials and clean-water advocates blame MDEQ for failure to adequately treat the water and protect an already vulnerable population from lead exposure.

Marc Edwards, a civil engineer who specializes in water treatment, said the state should have taken the public health risks more seriously by using corrosion control. The chemical treatment would've better protected the lead service lines that transport water to people's homes throughout the city, he said.

“If ever we don’t put chemicals in the water to keep the lead on the pipe and out of the water, it’s going to leach into the water,” he said. “We know from history that this can cause death, it can cause miscarriages, it can cause elevated blood lead – all kinds of health effects from that particular source of lead.”

In October, Edwards, a Virginia Tech professor who won a National Science Foundation grant to research the water situation in Flint, uncovered internal government documents, including emails and memos, that showed the state reacted slowly despite being aware for months of the EPA’s “concern about the lead situation in Flint” and that at least one EPA lead expert expressed a “major” public health concern about the lack corrosion control to keep the public safe. He has documented his work and findings at a website named the Flint Water Study.

During an October press conference, Wyant held assured the public the state was using corrosion control, but later said his statement was false.

“Corrosion control is a term of art and there are multiple control techniques,” he told America Tonight. “I want to be real clear: Flint needed more corrosion control, and we understand that and optimizing corrosion control is necessary and its part of what we’re doing to address the issue going forward.”

Edwards, who was first contacted by a local mother in April 2015, said the state also ignored worries from the public and water safety guidance from his independent team of researchers at Virginia Tech.

“The kindest thing you could possibly say is they were completely incompetent, sloppy, lazy and uncaring,” he said. “I think it goes a little bit beyond that, frankly.”

Edwards’ team, which received its grant in September, is independently testing hundreds of Flint homes for lead exposure. It has consistently found significantly higher levels of lead exposure when compared with testing overseen by the state.

Wyant said the state's testing methods were EPA-approved, but he said he now believes the protocol wasn't protective of public health.

"We recognize changes need to be made, but we are committed … to solving this problem," Wyant said. "And we'll stay through this action plan that addresses lead exposure to ensure that Flint has safe drinking water."

Curt Guyette, who works as an investigative reporter for the American Civil Liberties Union in Michigan, said the state downplayed the severity of the problem for months without taking action.

"They knew that it was a potential problem and their response was, 'People can just relax,'" he said. "That, to me, is unconscionable."

In November, the ACLU of Michigan announced plans for a federal lawsuit against the City of Flint and the State of Michigan for failure to protect Flint citizens.

The state is now being audited by the Environmental Protection Agency and reviewed by a bipartisan state task force.

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From: Bassler, Rachel
Sent: Tue 12/22/2015 7:09:21 PM
Subject: Flint News Clips 12/22/15

Flint Drinking Water Clips

Will the water in Flint, Michigan, ever be safe again?

Virginia Tech researcher accuses state health officials of "hiding" data on Flint's water

Who's responsible for poisoning Flint's water supply?

How the Flint, Michigan, water crisis is affecting its poorest residents

Michigan Ignored 'Conclusive Evidence' Of Flint Lead Poisoning, Researcher Says

Listen to "Not Safe to Drink," a special documentary about the Flint water crisis (in case this was not included before)

Will the water in Flint, Michigan, ever be safe again?

http://america.aljazeera.com/watch/shows/america-tonight/articles/2015/12/21/water-flint-michigan-safe.html

December 21, 2015 12:30PM ET by Lori Jane Gliha & Sameen Amin

Michigan environmental agency head is “concerned” but won't apologize to Flint residents for tainted water

FLINT, Mich. – The head of Michigan's Department of Environmental Quality says he hasn't regained the public's trust after a water crisis in the city of Flint left tens of thousands of residents at risk of lead exposure.

Dan Wyant, the director of MDEQ, told America Tonight that his agency, which is tasked with ensuring safe drinking water in Michigan, must provide more transparency when it comes to the state's water testing processes.

"We all need to do better … the state, the city and the federal government, our partners at [the Environmental Protection Agency]," he said. "And we have a plan in place that is addressing the issue that will eliminate the lead exposure and ensure safe drinking water in Flint."

Wyant said the governor's 10-point plan, which includes offering water filters, lead education and water testing to Flint residents, will provide short-term and long-term relief.

"It's important that we recognize Flint deserves safe drinking water, and we're committed to ensuring that is the case," Wyant said. "What is at issue is lead-service lines [and] lead fixtures."

While many have pointed the finger at the state for the problems in Flint, Wyant stopped short of offering a public apology to residents.

"I recognize Flint is anxious and concerned about [the water situation]," he said "and I feel the plan that we have addresses the issue, and we're committed to seeing that plan through."

Wyant has also made changes to his department in the wake of the Flint water crisis while the department is under review. In an exclusive interview, he told America Tonight that he reassigned the department's chief of drinking water and municipal assistance, Liane Shekter Smith, to a new post. She now helps process Freedom of Information Act requests, despite the fact that some requests will likely pertain to her own actions, internal records and involvement in the Flint crisis.

Exclusive: Flint water chief reassigned, helping with FOIA requests

Many Flint residents, health officials and clean-water advocates blame MDEQ for failure to adequately treat the water and protect an already vulnerable population from lead exposure.

Marc Edwards, a civil engineer who specializes in water treatment, said the state should have taken the public health risks more seriously by using corrosion control. The chemical treatment would've better protected the lead service lines that transport water to people's homes throughout the city, he said.

"If ever we don't put chemicals in the water to keep the lead on the pipe and out of the water, it's going to leach into the water," he said. "We know from history that this can cause death, it can cause miscarriages, it can cause elevated blood lead – all kinds of health effects from that particular source of lead."

In October, Edwards, a Virginia Tech professor who won a National Science Foundation grant to research the water situation in Flint, uncovered internal government documents, including emails and memos, that showed the state reacted slowly despite being aware for months of the EPA's "concern about the lead situation in Flint" and that at least one EPA lead expert expressed a "major" public health concern about the lack corrosion control to keep the public safe. He has documented his work and findings at a website named the Flint Water Study.

During an October press conference, Wyant held assured the public the state was using corrosion control, but later said his statement was false.

"Corrosion control is a term of art and there are multiple control techniques," he told America Tonight. "I want to be real clear: Flint needed more corrosion control, and we understand that and optimizing corrosion control is necessary and its part of what we're doing to address the issue going forward."

Edwards, who was first contacted by a local mother in April 2015, said the state also ignored worries from the public and water safety guidance from his independent team of researchers at Virginia Tech.

"The kindest thing you could possibly say is they were completely incompetent, sloppy, lazy and uncaring," he said. "I think it goes a little bit beyond that, frankly."- Marc Edwards, Civil engineer specializing in water treatment.

Edwards' team, which received its grant in September, is independently testing hundreds of Flint homes for lead exposure. It has consistently found significantly higher levels of lead exposure when compared with testing overseen by the state.

Wyant said the state's testing methods were EPA-approved, but he said he now believes the protocol wasn't protective of public health.

"We recognize changes need to be made, but we are committed … to solving this problem," Wyant said. "And we'll stay through this action plan that addresses lead exposure to ensure that Flint has safe drinking water."

Curt Guyette, who works as an investigative reporter for the American Civil Liberties Union in Michigan, said the state downplayed the severity of the problem for months without taking action.

"They knew that it was a potential problem and their response was, 'People can just relax,'" he said. "That, to me, is unconscionable."

In November, the ACLU of Michigan announced plans for a federal lawsuit against the City of Flint and the State of Michigan for failure to protect Flint citizens.

The state is now being audited by the Environmental Protection Agency and reviewed by a bipartisan state task force.

Local officials representing the city of Flint, which was under the control of a state-appointed emergency manager during the crisis, declined to comment on questions regarding its actions during the water crisis, citing pending litigation.

Guyette said a complete, independent investigation is necessary to find out how an entire city was put at risk.

"I don't think there's any doubt that there was negligence here," Guyette said. "The question at this point is: Was there gross negligence?"

Virginia Tech researcher accuses state health officials of "hiding" data on Flint's water

http://michiganradio.org/post/virginia-tech-researcher-accuses-state-health-officials-hiding-data-flints-water#stream/0

Virginia Tech researchers accuse Michigan health officials of trying to “stonewall” the investigation into lead in Flint’s drinking water.

The documents obtained through a Freedom of Information Act request are available online.

Marc Edwards says newly obtained internal documents show Department of Health and Human Services employees tried to hide evidence that matched the increased lead levels in children found by doctors at Hurley Medical Center.

“There are emails that show they reproduced the Hurley analysis very early on, and in a document they said is not to be distributed to the public, they noted they found the same thing as Hurley but they didn’t tell anyone,” says Edwards.

Edwards says state health department officials were following the lead of the Michigan Department of Environmental Quality in the handling of Flint’s water crisis.

The MDEQ initially downplayed the importance of the data from Virginia Tech and Hurley Medical Center.

The data suggested elevated lead levels, in the drinking water of some Flint homes and the blood of Flint children, could be linked to the city’s switch from Detroit water to the Flint River in April, 2014. Researchers claim the corrosive nature of the river and a lack of treatment resulted in damage to pipes, which then started leeching lead into the drinking water.

After 18 months, the city switched back to Detroit water in October. However, there is still concern lead may continue to be a problem, and Flint residents are advised to continue using filters or drink only bottled water.

There is no safe level of lead. Exposure to lead can have serious health effects, especially in young children.

The Department of Health and Human Services issued a written statement this afternoon defending the agency's handling of the blood lead level data. In the statement, the agency insists it "consistently provided information regarding blood lead levels in the city of Flint."

When initially looking at the citywide and county elevated blood lead level numbers, the increase appeared to be consistent with the routine seasonal fluctuation seen in the summer months. It wasn't until the Hurley report came out that our epidemiologists took a more in-depth look at the data by ZIP code, controlling for seasonal variation, and confirmed an increase outside of normal trends. As a result of this process, we have determined that the way we analyze data needs to be thoroughly reviewed. Additionally, Gov. Rick Snyder has created a Flint Water Task Force to review all city, state and federal responses and actions and is expected to make recommendations moving forward.

The statement went on to say DHHS will continue to work to ensure "appropriate case management and follow up is occurring in Flint."

Who's responsible for poisoning Flint's water supply?

http://america.aljazeera.com/opinions/2015/12/whos-responsible-for-poisoning-flints-water-supply.html

The struggling Michigan city is reeling from a lead-poisoning crisis caused by bad state policies

December 19, 2015

In October, Michigan Gov. Rick Snyder announced that the city of Flint would change its water source. This was in response to the discovery that temporarily pulling water from a local river produced high levels of lead in the water supply for Flint, aneconomically struggling community of 100,000 residents roughly an hour northwest of Detroit.

It was a crisis months in the making. Problems began as soon as officials decided in April 2014 to have Flint stop using Detroit's water system and begin drawing water from the Flint River.

This was billed as a measure that would save millions of dollars. But residents almost immediately raised concerns about the discolored and smelly water that was flowing from their taps. Tests revealed high levels of chemicals that could cause liver or kidney problems, and some complained of losing hair and getting rashes after drinking the water.

In response to the growing backlash and the evidence that residents were drinking poisoned water, state and city officials sought to quell concerns, insisting the water was safe to drink and continually disputing local studies published this fall that showed lead levels sharply increased in the bloodstreams of Flint residents, including children. (Research suggests that lead can cause irreversible cognitive and developmental damage to children.)

But even as Snyder and other state officials relented, a question has continued to linger among activists and residents with children who could face life-altering circumstances as a result of lead poisoning: Who's to blame for this mess?

At the October announcement that Flint would switch back to Detroit's water system, Snyder made clear that he was interested solely in finding a solution to fix the problem, not in revisiting mistakes. Nonprofit donations, along with appropriations from the state and city, would pay for the $12 million transition back to Detroit's system, he said.

"This isn't about blaming anyone," he said, "but are there recommendations to improve processes when you change water sources or are there ongoing things we should be looking at on a more frequent basis?"

Snyder is not the only official involved in the decision-making process to deflect blame.

At the time of the switch, Darnell Earley was Flint's state-appointed emergency manager, with near total control of day-to-day operations. He was the third appointee to oversee the financially unstable city since 2011. According to a letter obtained by the American Civil Liberties Union of Michigan, it was Earley who made the final call.

But he asserts he's not to blame. He claims the plan was presented to him by the city's mayor, Dayne Walling, and staff members after Earley was appointed in October 2013. Walling, who was defeated last month in his re-election bid, has said that's not the case. The head of Flint's Department of Public Works at the time, Howard Croft, claimed the decision came down from Snyder's office. Meanwhile, officials with the Michigan Department of Environmental Quality simply said that staffers applied the wrong federal standards to treat water from the Flint River, despite a 2011 study that showed residents would be at risk of lead contamination if the water supply wasn't treated properly. Asked about the report, a representative for the department told The Detroit Free Press to ask Flint officials why the recommendations were ignored.

"There are really no models on how to clean up a mess like this, especially given that none of the authorities have proven trustworthy."- Marc Edwards, Professor, Virginia Tech.

Snyder appointed a task force to issue what he characterized as an "after-action" report on what took place, though no completion date is set. It's unclear what, if anything, might result from the report.

The perceived lack of accountability from activists and residents is the motivating factor behind a federal lawsuit that was filed last month by several families who have accused more than a dozen state and city officials of negligence, said attorney Julie Hurwitz.

"The various and sundry statements of positions being taken by the players in this entire travesty is so overwhelmingly broad," she said, "that it's frankly hard to keep track of all the various ins and outs and nuances and positions that … these culprits are publicly taking from one day to the next."

Hurwitz added that the lawsuit, which she aims to make a class action, is intended to establish "some semblance of accountability for the wrong that was done."

Marc Edwards, a Virginia Tech professor and MacArthur genius grant recipient who helped lead an independent study of Flint's water supply with residents and the ACLU, said the situation has reached "uncharted territory."

"I never heard of a situation where the agencies … responsible for preventing this problem caused it … There are really no models on how to clean up a mess like this, especially given that none of the authorities have proven trustworthy," he said.

Months after acknowledging that lead levels in Flint's water supply increased, the state's only response so far has been to reassign an official with the environmental department and appoint a task force whose broad purpose is to "offer recommendations for future guidelines to protect the health and safety of all state residents." Croft has resigned.

As recently as last week, Snyder refused to call the task force's review an investigation. He again declined to set a deadline for completion of the review.

Flint residents have seen marked improvements, as Detroit's water system has flushed out what's left of the Flint River in the city's supply. But that hasn't allayed the concerns of city officials and residents still reeling from the fact that their water supply was poisoned on the state's watch.

Hours after Snyder struck an optimistic tone on the situation in Flint, the Federal Emergency Management Agency announced it was sending 28,000 liters of bottled water to the city.

And at a City Council meeting later that evening, newly elected Mayor Karen Weaver declared a state of emergency, a move that highlights the urgency many still feel is needed to address the situation. Her resolution doesn't mince words when describing the horrifying reality Flint parents may face with their kids, and it nods to the source of the city's crisis. It's a source she can address only in broad strokes.

"The city of Flint," she said, "has experienced a man-made disaster by switching to the use of the Flint River." It's a disaster that's unlikely to end anytime soon.

Ryan Felton is a journalist who lives in Detroit. His writing and reporting have appeared in The Guardian, FiveThirtyEight, Reuters, In These Times, Jalopnik and Pacific Standard.

The views expressed in this article are the author's own and do not necessarily reflect Al Jazeera America's editorial
policy.

How the Flint, Michigan, water crisis is affecting its poorest residents

http://america.aljazeera.com/watch/shows/america-tonight/articles/2015/12/18/flint-michigan-water-crisis-lead-residents.html

As residents await possible government disaster aid, how does their city recover?

FLINT, Mich. — A bottle of murky tap water — with swirling rust-colored pieces of sediment — still sits on Rhonda Kelso's kitchen counter in Flint.

In August of this year, despite information from government officials suggesting the water in Flint was safe to drink, she was still skeptical of its quality. So she collected the sample from her tap.

When a group of Virginia Tech researchers tested Kelso's water and discovered evidence of lead, Kelso, a 52-year-old stroke survivor, decided that was the last straw.

Now she's part of a class-action lawsuit filed **against Flint, the state of Michigan and various officials that claims the government is responsible for exposing** tens of thousands of Flint residents to lead-contaminated water**.**

In December **the mayor declared a state of emergency in Flint.**

"The city of Flint residents — they are not people that are disposable. We just are not," said Kelso, as tears welled in her eyes. "We're not a permanent underclass."

Water history

Before the discovery of lead in the water, Flint residents endured several months of irritating health problems, including hair loss and rashes, after the city started using the Flint River as a source for drinking water in April 2014.

For years, the community had sourced its water from Lake Huron by purchasing it from Detroit. The temporary switch was designed to save the cash-strapped city more than $3 million, but the corrosive nature of the Flint River did more harm than good.

Without adequate controls in place to protect the aging plumbing infrastructure throughout the city, the water started to eat away at the pipes. As a result, lead from the pipes leached into the water and worked its way into people's homes.

Kelso, who uses a cane to get around, is most concerned for her 12-year-old daughter, Kaylynn, who is developmentally delayed and has a heart condition.

"It was almost a year before I got my own filter," Kelso said. "So we were drinking the water. We were exposed. We were cooking with the water."

In October, the state said it would provide water filters and water testing to Flint residents. **It also** pledged more than $9 million **to help switch the Flint water system back to the Lake Huron source.**

However, for a financially troubled city with nearly 42 percent living in poverty, **the ongoing lead crisis is a mounting burden as people struggle to make ends meet.**

An impact "we see later"

Amber Whitman uses bottled water by the gallon when she cooks dinner for her fiancé, her grandmother and her 7-year-old daughter.

Flint residents have been urged to use certified filters to protect themselves while the city and state continue to work with the Environmental Protection Agency to ensure the water for all Flint citizens is safe to drink.

Whitman, who is pregnant, has yet to install the government-provided filter on her faucet, so she uses water from a jug on macaroni-and-cheese night. It is an extra expense she is trying to manage while she's not working.

"The city of Flint residents – they are not people that are disposable; we just are not. We're not a permanent under-class." - Rhonda Kelso, Flint resident.

"We were already having trouble trying to purchase just food, and now what little assistance I had from the state has to completely go towards water," she said. "In the meantime, our water bill — even though we're not using it — is like $120 a month."

Whitman said she uses food stamps to pay for the bottled water. Though health officials have said it is not dangerous to take showers, she isn't taking any chances.

"We are no longer doing hot showers. It's lukewarm or cool water to shower," she said, saying she worries about the long-term effects of lead exposure on her little girl. "I think it

would concern any parent because most of the damage that is caused from lead is irreversible.”

Dr. Mona Hanna-Attisha, the director of the pediatric residency program at Flint’s Hurley Hospital, said it's impossible to know the extent of the problem. She’s assuming every child in Flint has been exposed at some point, starting in April 2014 and until the water is safe again.

“The impact of lead poisoning we see later,” she said. “So, in five years, we’re going to have more kids who need early intervention and special education services. And in 10 years, there’s going to be more kids with ADHD diagnoses. And in 15 to 20 years, there’s going to be more kids with violent behavior … We don’t see the effects now.”

Michigan Ignored 'Conclusive Evidence' Of Flint Lead Poisoning, Researcher Says

http://www.huffingtonpost.com/entry/flint-michigan-water-lead_56784055e4b0b958f657595c

The state says it made an honest mistake.

12/21/2015 05:34 pm ET

Arthur Delaney Senior Reporter, The Huffington Post

Paul Sancya/Associated Press

Michigan state officials insisted that the water supply in Flint was safe even though they knew an unusual number of children had suffered lead poisoning, according to a scientist who helped blow the whistle on Flint's water crisis.

Through a public records request, Marc Edwards, a civil engineering professor at Virginia Tech, uncovered a July 2015 memo warning of elevated lead levels in Flint kids' blood.

An internal report from the Michigan Department of Health and Human Services warned that lead poisoning rates "were higher than usual for children under age 16 living in the City of Flint during the months of July, August and September, 2014."

In April 2014, city and state officials switched Flint's water source from Detroit's water system to the Flint River, immediately prompting citizen complaints about tap water quality.

Edwards led a team that conducted its own analysis of Flint's water, reporting high lead levels in early September of this year. Brad Wurfel, spokesman for the Michigan Department of Environmental Quality, essentially dismissed the allegations in an interview with Michigan Radio, saying the state's analysis of blood data didn't show any signs of a problem.

The government continued to insist that the water was safe until a Flint pediatrician with the Hurley Medical Center reported later in September that the water change corresponded with a significant spike in lead poisoning among city children.

However, the memo obtained by Edwards suggests the state knew about the lead poisoning weeks earlier, yet continued to say the water was okay.

"They discovered scientifically conclusive evidence of an anomalous increase in childhood lead poisoning," Edwards wrote Monday on the website he created to track Flint's water crisis, "but stood by silently as MDEQ officials repeatedly and falsely stated that no spike in blood lead levels (BLL) of children had occurred."

Reached for comment on Monday about the memo, Michigan's DHHS said it had made an honest mistake by attributing the spike in blood lead levels to seasonal variation.

"When initially looking at the citywide and county elevated blood lead level numbers, the increase appeared to be consistent with the routine seasonal fluctuation seen in the summer months," agency spokeswoman Jennifer Eisner said in an email. "It wasn't until the Hurley report came out that our epidemiologists took a more in-depth look at the data by zip code, controlling for seasonal variation, and confirmed an increase outside of normal trends."

The July 2015 memo didn't indicate definitively what had caused the higher lead levels in the children's blood, nor did it show elevated lead for subsequent months. Other emails obtained by Edwards indicate that the data had been sent to the director of the DHHS, as well as to the office of Gov. Rick Snyder (R), sometime between July and September.

The county declared a public health emergency and told people to stop drinking the water in October of this year. And Snyder, who appointed emergency managers overseeing the city's switch to the Flint River as its water source, has signed legislation returning Flint to Detroit's water system. The governor also appointed a task force to investigate what went wrong.

Lead poisoning can cause irreversible health and behavioral problems, and children exposed to too much lead can permanently lose IQ points.

Listen to "Not Safe to Drink," a special documentary about the Flint water crisis

By LINDSEY SMITH, DEC 16, 2015

http://michiganradio.org/post/listen-not-safe-drink-special-documentary-about-flint-water-crisis

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Sent: Wed 12/23/2015 8:21:46 PM
Subject: Flint Drinking Water News Clips 12/23/15
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•□□□□□□□□ Michigan Drinking Water Crisis Shows Limits Of EPA Lead Rule Changes (Inside EPA)

•□□□□□□□□ State health fund needed in response to Flint water crisis, congressman says (mlive.com)

•□□□□□□□□ State failed to sound alarm when it knew of rising Flint blood lead levels (mlive.com)

•□□□□□□□□ New study links tainted water, high lead levels in kids in Flint, Mich. (CBS)

•□□□□□□□□ Doctor: Strongest link yet between Flint water, kids' lead levels (Midland Daily News)

•□□□□□□□□ Toxic Water Isn't Just in Michigan (TIME)

•□□□□□□□□ Newly published study gives more evidence of elevated lead in Flint kids (mlive.com)

•□□□□□□□□ Was Lead Poisoning From Flint River Preventable? Research Implicates Water Supply (Medical Daily News)

•□□□□□□□□ Toxic Michigan Water Linked to High Lead Levels in Children, Study Finds (TIME)

Michigan Drinking Water Crisis Shows Limits Of EPA Lead Rule Changes (Inside EPA)

http://insideepa.com/inside-epa/michigan-drinking-water-crisis-shows-limits-epa-lead-rule-changes

Posted: December 22, 2015

The drinking water crisis in Flint, MI, is highlighting the potential shortcomings of EPA regulations in preventing lead increases when a water system changes the source of its water, with sources saying that even recommended changes to the lead and copper rule (LCR) may not be enough to prevent a similar situation in the future.

Flint Mayor Karen Weaver declared a state of emergency Dec. 14 for the city due to the elevated levels of lead in drinking water, which have sickened many infants and children, after the city switched its water source from the Detroit water system to the Flint River in 2014. The city has since switched back to Detroit's water.

The declaration comes after several residents filed a class action suit Nov. 13 that charges state and local officials knew that switching drinking water sources would increase lead levels, and after a coalition of environmental and other advocacy groups Nov. 16 issued a notice of intent to sue the same officials, alleging that they failed to properly implement EPA-mandated lead testing and corrosion control programs in Flint.

An EPA task force is working with the state and local officials to address the problem while Region 5 has launched a "full programmatic review" of Michigan drinking water programs. Region 5 Administrator Susan Hedman said in a Nov. 10 statement that the review will target the Michigan Department of Environmental Quality's (MDEQ) overall implementation of the Safe Drinking Water Act (SDWA) mandates as well as specific standards for total coliform and nitrates, EPA's LCR, and groundwater policies.

EPA's National Drinking Water Advisory Council (NDWAC) is recommending a number of changes to the LCR to further reduce national exposure to lead in drinking water, but the advisors said in November that the Flint crisis primarily was due to a failure to follow current LCR requirements for corrosion control testing. NDWAC included language in an "enhancement" letter to EPA Administrator Gina McCarthy along with the recommendations that says that "prior to the adoption of the new rule, compliance with the existing rule is essential" (*Inside EPA*, Nov. 27).

Under both the current rule and the recommended changes, water systems are not specifically required to conduct any additional testing when they switch water sources, although such testing is advised.

"When a system changes its source or treatment, and is required to consult with the state, the state primacy agency also may choose to require additional one-time monitoring to evaluate those changes if the degree of the change warrants," the draft NDWAC recommendation states. Some drinking water sources are more corrosive than others, increasing the likelihood that lead and copper from water pipes will leach into treated water.

MDEQ did not require the one-time monitoring, and one source with knowledge of the LCR process suggests that was one key mistake in Flint.

"I think everybody's culpable here," the source says. "It makes sense that the state primacy agency should have been involved. . . . The primacy agency does have a role to play, and there should have been some consultation, one would think. If I were creating a water supply, I'd consult with a water agency. They may have, and they may not have."

But the source acknowledges that the intent of the LCR was meant to monitor lead over time. "I don't know that there's an up-front testing requirement" in the rule for a circumstance like Flint, where the water source was switched, the source says. "Part of that gets left to the engineers to say, 'if our water source is going to be x, it's our obligation to do the work up front to figure out [if that will have lead]."

"We know lead is in the plumbing, we know how it gets mobilized, we know a lot about those factors, so in the case of Flint, one has to wonder how much testing was done to determine if there was potential" for contamination, the source says.

Rep. Dan Kildee (D-MI), who represents Flint, suggested at the Nov. 18 NDWAC meeting that EPA should not be left off the hook for the Flint crisis, particularly as it looks to finalize the new LCR.

"Ultimately, EPA has responsibility to ensure clean drinking water standards were followed. This rule must have greater transparency. Residents deserve to know why, for months, Michigan failed to follow federal safe drinking water laws," Kildee told the panel. He added that he hoped EPA Region 5's audit of MDEQ's implementation of SDWA could be included in revisions to the rule.

In the class action suit, *Melissa Mays, et al. v. Rick Snyder, et al.*, the plaintiffs allege that state and local officials deprived citizens of their 14th Amendment rights "in that they deprived plaintiffs of life, liberty and property without due process of law when they took from plaintiffs safe drinking water and replaced it with what they knew to be a highly toxic alternative solely for fiscal purposes." The suit is pending in the U.S. District Court for the Eastern Division of Michigan. *The suit is available on InsideEPA.com. (Doc. ID: 187372)*

The plaintiffs claim officials knew that the water pumped from the Flint River exposed residents to heightened levels of lead, based on a 2013 MDEQ report which warned that the Flint River water was highly corrosive and could not be safely used without an anti-corrosive agent that would prevent lead and copper from leading into the water lines: "Beginning in April 2014, Defendants were fully aware that the required and necessary anti-corrosive was not being used during the distribution of Flint River water to Flint residents, families and homeowners," the plaintiffs write, adding that the daily cost of such an anti-corrosive agent would have been $60.

But in addition to the lack of an anti-corrosive agent, many observers have charged that MDEQ's oversight of Flint was insufficient and that both Flint and MDEQ officials failed to follow EPA rules for monitoring lead levels, including SDWA sampling procedures and the LCR mandate to implement a strategy to reduce corrosion of its drinking water pipes.

A spokesman for EPA Region 5 noted in a recent email to *Inside EPA* that Mayor Weaver had met with Region 5 and MDEQ officials Dec. 11, prior to the state of emergency declaration. -- *Amanda Palleschi*

Inside EPA - 12/25/2015 , Vol. 36, No. 51

State health fund needed in response to Flint water crisis, congressman says (mlive.com)

http://www.mlive.com/news/flint/index.ssf/2015/12/us_rep_dan_kildee_calls_for_st.html

By Gary Ridley | gridley@mlive.com
Follow on Twitter
on December 23, 2015 at 5:30 AM, updated December 23, 2015 at 10:54 AM

U.S. Rep. Dan Kildee, D-Flint Township, meets with The Flint Journal Editorial Board on Tuesday, Dec. 22, 2015.Jake May | MLive.com

FLINT, MI -- As questions continue to swirl about who should be held responsible for the Flint water crisis, U.S. Rep. Dan Kildee said the state needs to step forward and fund a program to benefit the health of the city's youngest residents.

Kildee, D-Flint Township, continued to call for a state-financed program during a Tuesday, Dec. 22, meeting with The Flint Journal editorial board that would be used to continually monitor potential health ramifications for those exposed to elevated lead levels in the city's water supply.

News organizations from around the country have brought a renewed spotlight to the city's water issues after newly-elected Mayor Karen Weaver called declared a state of emergency.

However, Kildee said not enough focus has been paid to helping those potentially harmed by the water woes.

"My focus is on getting the kids help," Kildee said, adding that such a health fund would be unprecedented.

Kildee said he has met with members of the medical community, including Dr. Mona Hanna-Attisha, the director of Hurley Medical Center's Pediatric Residency Program, whose initial research first showed rising levels of lead in the blood of Flint children, to try and develop a medical response to what he called a "failure of government."

Flint changed its water source from Lake Huron water purchased from the Detroit water system to the Flint River in April 2014, a decision made while the city was being run by a state-appointed emergency manager.

State regulators never required that the river water be treated to make it less corrosive, causing lead from plumbing and pipes to leach into the water supply. Even though the city reconnected to the Detroit water system in October, local officials have advised Flint residents not to drink city water unless they are using a lead-clearing filter.

Earlier this month, Hanna-Attisha told The Flint Journal-MLive that she was continuing to analyze data comparing the blood lead levels of Flint children under 5 years old from January to September 2013 and from January to September 2015, nine months in which the city was using the Flint River as its water source.

My focus is on getting the kids help.

"The percentage of children with elevated blood levels significantly increased after the water source changed," Hurley said in a new release. "Results showed the incidence of elevated blood lead levels increased from 2.4 to 4.9 percent ... and city areas with the highest water lead levels experienced a 6.6 percent increase."

The Centers for Disease Control and Prevention says children under 6 are among those at high risk for the effects of lead poisoning. U.S. Census Bureau estimates show there are between 6,000 and 8,000 children under 5 in the city.

Though funded by the state, Kildee said the health fund would be managed locally.

State officials say they have been active in their response to the situation, and pointed to Gov. Rick Snyder's creation of a five-member task force in October charged with reviewing the response to the water crisis and making recommendations.

"We are committed to protecting the health of children in Flint now and into the future, and helping anyone who has been affected by the water challenges in Flint," said Snyder Press Secretary Dave Murray. We're already taking steps called for in Gov. Snyder's action plan, and are working with the Flint Water Task Force to see what additional actions it recommends to help children and adults and address any issues that were created b this situation."

However, some Democratic leaders have claimed the Republican-led state government hasn't done enough to address the situation in Flint.

U.S. Sen. Debbie Stabenow, who was in Flint Tuesday to announce potential new anti-blight funding, called on Lansing to take a larger role in tackling Flint's lead issue.

"The State of Michigan, where the negligence rose, has to step up in a much-bigger way to help Flint," Stabenow said.

Murray said the state is continuing to work with city leaders in addressing the issue and has offered $10 million in grants and other financial assistance to help facilitate the city's switch back to Detroit water, improve the city's water infrastructure and provide filters for residents.

"Flint residents need to have access to safe, clean water," Murray said. "Gov. Snyder and administration members continue to work closely with Mayor Weaver and other city leaders to focus on health issues affecting children and other city residents, and address water infrastructure challenges."

State failed to sound alarm when it knew of rising Flint blood lead levels (mlive.com)

http://www.mlive.com/news/flint/index.ssf/2015/12/documents_show_state.html

By Ron Fonger | rfonger1@mlive.com
on December 22, 2015 at 5:55 PM, updated December 23, 2015 at 8:00 AM

FLINT, MI -- State officials found evidence of rising blood lead levels in Flint two months before the problem was exposed by a Flint pediatrician, but didn't immediately inform the public, according to documents released by a water researcher.

Michigan public health officials said today, Dec. 22, that they did not sound an alarm about the spike, which coincided with use of the Flint River for drinking water, because they initially believed the numbers represented a "seasonal fluctuation."

As a result of what happened in Flint, state officials now say that the way the state analyzes the data they collect needs to be "thoroughly reviewed."

Virginia Tech Professor Marc Edwards, a key figure in the Flint water crisis, released 159 pages of public records on his Web site this week, documents received in response to a Freedom of Information Act request to the state.

The records are a collection of emails and attachments, primarily from officials at the Michigan Department of Health & Human Services, about Flint water.

The documents show:

- Emails about blood lead levels in Flint date back to at least July 23 and by July 28, inner-office correspondence says the city's rising numbers warrant further investigation and that "there does appear to be a higher proportion of (elevated blood lead levels) last summer (2014) than usual."
- A report prepared by the state DHHS's Child Health Epidemiology Section, which included data up to July 27, concluded "positive tests for (elevated blood lead levels) were higher than usual for children under age 16 living in the city of Flint during the months of July, August and September 2014."
- A Sept. 11 email from Robert L. Scott of DHHS' Childhood Lead Poisoning Program tells others in the department that he has received a request for information about blood lead levels in Flint. "Sounds like there might be more to this than what we learned previously. Yikes," the email says.

Edwards said today, Dec. 22, that the documents show the state had evidence of elevated blood lead levels in Flint while the Michigan Department of Environmental Quality and the city of Flint denied a public health problem with lead in the city's water supply.

After Edwards reported his testing showed a serious problem with lead in Flint water, a DEQ spokesman questioned the credibility of his research and former Flint mayor Dayne Walling assured residents it was safe to drink until September when a Flint pediatrician reported her findings.

Those denials would not have continued as long as they did had state health officials told the public what it had discovered, the professor said.

"Everything they looked at, they found a problem, and they never told anyone," Edwards said of the agency.

Dr. Eden Wells, chief medical executive for the DHHS, said today that the documents do show missed opportunities for the state to have addressed Flint's lead in water crisis earlier, but do not show an effort to withhold information.

"I have done this a lot after (disease) outbreaks ... You always go back, and learn from them, (including whether evidence) could have allowed for an earlier response," she said.

Wells, who was named by Gov. Rick Snyder to be Flint's drinking water public health adviser, said state health officials initially concluded that spikes in blood lead lead levels immediately after the city changed its water source to the Flint River were seasonal and not related to water.

DHHS officials initially questioned the findings by a Hurley Medical Center pediatrician, Dr. Mona Hanna-Attisha, who on Sept. 24 showed blood lead levels of children in some parts of the city tripled after the switch to Flint River water.

The released emails show that on Sept. 28, in preparation for a news conference on Hanna-Attisha's findings, the director of the state health department said he needed an analysis of the Flint doctor's data and her conclusions.

"I would like to make a strong statement with a demonstration of proof that the lead blood levels seen are not out of the ordinary and are attributable to seasonal fluctuations," the email from DHHS Director Nick Lyon said.

Blood lead levels above 5 micrograms per deciliter are considered elevated by the Center for Disease Control and Prevention.

Wells said only after reviewing the state's own data further, examining it based on zip codes and focusing on young children, who are most susceptible to lead poisoning, could she conclude blood lead levels were rising among Flint children under 5 years old.

Jennifer Eisner, a spokeswoman for DHHS, said the department initially believed higher blood lead levels were due to seasonal fluctuations.

"As a result of this process, we have determined that the way we analyze data collected needs to be thoroughly reviewed," Eisner said in an email to The Flint Journal-MLive.

Wells was involved in a follow-up examination of state data after Hanna-Attisha made her research public in late September. Wells eventually agreed with the Flint doctor.

Edwards said he spent weeks in an effort to get access to state blood lead level data after testing of Flint water by Virginia Tech found lead levels in water rising as well.

The professor said he encountered resistance from state agencies in releasing blood lead data, delaying efforts to address the problem.

Edwards' experiments on the river water found it was far more corrosive than Lake Huron water that had been purchased from the Detroit water system and used in Flint for decades.

Flint reconnected to the Detroit system in October, using state, local and grant funds to end its use of the Flint River after 17 months.

State and federal reviews of how the Flint's water crisis was allowed to happen are ongoing.

New study links tainted water, high lead levels in kids in Flint, Mich. (CBS)

http://www.cbsnews.com/news/tainted-water-high-lead-levels-kids-flint-michigan/

A new study provides the strongest evidence yet of a link between elevated blood-lead levels in children living in Flint, Michigan, and the struggling city's water system, a pediatrician who first raised alarms about the matter said Monday.

Dr. Mona Hanna-Attisha, director of pediatric residency at Hurley Children's Hospital, and other experts compiled the report using a more refined analysis. It showed that areas in Flint with the highest levels of lead in tap water corresponded with where young children with the highest blood-lead levels lived.

The study also confirmed her earlier assessment that the percentage of children with abnormally high blood-lead levels had at least doubled after the city stopped tapping Detroit's water system to save money in 2014, and began using water from the nearby Flint River.

The findings "strongly implicate the water source change as the probable cause for the dramatic increase," according to the report published in the American Journal of Public Health. The report said the results probably understate the danger because testing is not conducted before birth and during infancy, when numbers likely would be higher. Screenings usually are performed between ages 1 and 2.

"Everybody who drank this water or cooked with this water was exposed to lead," said Hanna-Attisha, the report's lead writer and an assistant professor at Michigan State University.

Flint and Genesee County have declared public health emergencies amid public outrage over the tainted water. Lead is a powerful toxin that can damage human nervous systems and is particularly harmful for young children, causing lower intelligence, developmental delays and behavior problems.

"Lead at any level can be associated with decreases in IQ, behavioral disorders, even an association with certain juvenile delinquency as these children get older," Dr. Eden Wells, Chief Medical Executive for the Michigan Department of Health and Human Services, told CBS News.

The city of about 99,000 residents started using the Flint River as an interim water source until it could hook up to a new system drawing water from Lake Huron that is scheduled for completion next year. The cost-cutting move was made while the city was under state emergency financial management.

But the river water drew complaints about its taste, smell and appearance.

Hanna-Attisha announced in September that data from blood tests routinely administered to young children showed that lead levels had jumped since the water systems were changed. State officials initially challenged, but later acknowledged, the findings, and Flint resumed using Detroit water. The state has approved millions of dollars in aid to address the crisis.

For their updated study, Hanna-Attisha and her colleagues refined their data, focusing specifically on children under age 5 within the city limits and excluding those who live outside the city but within Flint ZIP codes, where no significant changes in blood-lead levels were found.

The researchers found that the proportion of children with at least five milligrams of lead per deciliter - the point considered elevated - had risen from 2.4 percent in the nine months before the water switch to 4.9 percent in the nine months afterward.

In neighborhoods with the highest water lead levels, the increase was even bigger: to 6.6 percent. And in one section of town, the percentage of children with elevated levels went from 4.9 percent to 15.7 percent.

No reason for the higher blood-lead levels except the water was found, the study said.

Health problems from lead can be hard to spot in young children, said Dr. Marcie Billings of the Mayo Clinic Children's Center in Rochester, Minnesota, who did not participate in the study. But parents should watch for future red flags such as anemia, low academic achievement and unusual behavioral changes, she said.

Although lead exposure is irreversible and no level is safe, not every affected child will suffer the worst results, Hanna-Attisha said. Good nutrition can help the body excrete toxins instead of absorbing them. Effective early-childhood education and relief from stresses such as poverty and violence are important.

"We have an opportunity to build a model public health program so we don't see these consequences," she said.

Concerned families can visit their pediatrician's office or go to their local health department for free blood level testing. Medicaid pays for lead tests.

"We really worry about pregnant women and infants. We know that long-standing lead exposure can lead to some long-term effects," said Dr. Carlos Lerner, medical director of the Children's Health Center at the Mattel Children's Hospital UCLA,

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Toxic Water Isn't Just in Michigan (TIME)

http://time.com/4156867/toxic-water-michigan/

Nancy Loeb

Dec. 21, 2015

Nancy Loeb is an assistant clinical professor of Law and the director of the Environmental Advocacy Clinic at Northwestern University Law School's Bluhm Legal. She is an OpEd Project Public Voices fellow.

4 lessons we must learn from the tragedy in Flint

The water supply in Flint, Mich., contains toxic levels of lead that are particularly harmful to children. The costs needed to begin to fix this led Flint Mayor Karen Weaver to declare a state of emergency in mid-December.

This is a tragedy—one that was entirely avoidable. The poisoning is the result of short-sighted changes by the government that were focused on saving money and that were made without adequate consideration of potential consequences. If we don't start addressing the underlying problems, there will likely be more Flints to come.

What happened in Flint?

Flint management decided to switch the city's water source from water supplied by Detroit to a new source from Lake Huron. But because the pipelines needed were a year and a half away from being completed, Flint residents were switched temporarily in April 2014 to cheaper water from the Flint River.

Changing drinking water sources isn't as simple as changing a budget number and flipping a switch. The pipes that deliver water within Flint—like the pipes in many cities throughout the U.S.—are old and made of or contain lead. The chemical makeup of the water from the Flint River makes it more corrosive than Detroit's water, causing lead to leach from the aging pipes, contaminating Flint's water with dangerous levels of lead.

A study presented in September by the Hurley Medical Center showed that blood lead levels in children under 5 years of age living in Flint zip codes that were supplied by the Flint River water increased dramatically in the year and a half that Flint's water was sourced from the Flint River. Further, the number of Flint children in those zip codes with dangerously elevated blood levels more than doubled in just that year and a half.

Lead is toxic, especially for children. Children exposed to lead face significantly increased risks of impaired brain development and cognitive functions, lower IQs, attention-related behavior problems, lower levels of academic achievement, and violent tendencies. Flint's children now face these risks.

We can't undo what happened in Flint. But we can learn from it and protect potentially millions of children throughout the U.S. Here are four lessons from Flint.

1. The drinking water infrastructure in the U.S. is aging to the point of danger. In Chicago, where I live, for example, some of the pipes that deliver drinking water to homes are 100 years old. We drink water from Lake Michigan that is treated for safety from chemicals and disease, but between the water treatment plant and our taps, that water runs through old pipes that can leach lead. Chicago is now replacing 900 miles of water mains in a process that will take 10 years. Today, we know better than to use lead pipes to transport water. But millions of people in the U.S. are still getting water from old lead pipes. Until those pipes are replaced, the lead hazard will remain.

2. Short-term budget "fixes" often cost more in the long-run. After the lead issue was discovered, Flint was hooked back up to Detroit's water supply for the short time left until the new Lake Huron pipelines are available. The cost to switch back is reported to be $12 million. In addition, there will be the costs of testing, monitoring and treating Flint's children. These costs are what led Flint's mayor to seek federal disaster relief.

3. We are not testing water at the tap enough to know whether it contains dangerously high levels of lead. Regulations issued by the Environmental a Protection Agency (EPA) to implement the Safe Drinking Water Act, which is supposed to protect public water sources, are insufficient to detect all lead problems. Under EPA's Lead and Copper Rule, only 100 taps must be tested for lead in a public water system that serves more than one hundred thousand people. The failure to detect dangerously high levels of lead in Flint's water clearly calls into question the adequacy of EPA's requirements for testing at the tap.

4. The EPA is failing to adopt the most current health standard, set by a panel of experts convened by the Centers for Disease Control, for childhood lead exposures. The only good news coming out of the Flint tragedy is that officials there based the declaration of a health emergency on the more protective health standards adopted by the CDC in 2012. EPA still has not adopted that standard. They need to; our children deserve better.

It's easy to put our heads in the sand and pretend that problems don't exist or that we can't afford to fix them. But we owe it to the children of Flint and all American children to face into these problems and allocate the funds needed to fix them.

Strong Link Between Lead & Flint Water (WILX 10)

http://www.wilx.com/home/headlines/Strong-Link-Between-Lead--Flint-Water-363220161.html

Posted: Tue 3:00 AM, Dec 22, 2015

By: AP

Researchers say they have the strongest evidence yet that links elevated blood-lead levels in children in Flint, Michigan, to the city's water system.
A report by a pediatrician found that city children who have the highest levels of lead in their blood live in areas that have the highest levels of lead in tap water.
And the number of children with high levels of lead in their blood doubled after Flint stopped tapping into Detroit's water system in 2014.

Newly published study gives more evidence of elevated lead in Flint kids (mlive.com)

http://www.mlive.com/news/flint/index.ssf/2015/12/health_journal_publishes_blood.html

By Ron Fonger | rfonger1@mlive.com
on December 21, 2015 at 5:44 PM, updated December 22, 2015 at 9:13 AM

FLINT, MI -- The American Journal of Public Health has published research by Dr. Mona Hanna-Attisha that further details the rise in blood lead levels in children who drank Flint River water for as long as 17 months.

Hanna-Attisha, the director of Hurley Medical Center's Pediatric Residency Program, whose initial research first showed rising levels of lead in the blood of Flint children, said the most recent findings support that first study.

"It's a little more detailed. It solidifies the reseach, (and) it's a finer analysis," Hanna-Attisha said today, Dec. 21.

The American Journal of Public Health Research was conducted by Hanna-Attisha; Jenny LaChance of Hurley Research Center; Richard Sadler of the College of Human Medicine Division of Public Health; and Dr. Allison Champney Schnepp, pediatric resident at Hurley Children's Hospital and Michigan State University.

Flint changed its water source from Lake Huron water purchased from the Detroit water system to the Flint River in April 2014, a decision made while the city was being run by a state-appointed emergency manager.

State regulators never required that the river water be treated to make it less corrosive, causing lead from plumbing and pipes to leach into the water supply.

Even though the city reconnected to the Detroit water system in October, local officials have advised Flint resident not to drink city water unless they are using a lead-clearing filter.

Earlier this month, Hanna-Attisha told The Flint Journal-MLive that she was continuing to analyze data comparing the blood lead levels of Flint children from January to September 2013 and from January to September 2015, nine months in which the city was using the Flint River as its water source.

By spending more time with her initial data, the doctor said the evidence of elevated lead levels in the blood of children younger than 5 became even stronger.

Researchers were able to include only children exposed to Flint River water, removing data for kids who lived in home with Flint zip codes but who actually lived in neighboring cities or township and who were not exposed to river water.

"The percentage of children with elevated blood levels significantly increased after the water source changed," Hurley said in a new release. "Results showed the incidence of elevated blood lead levels increased from 2.4 to 4.9 percent ... and city areas with the highest water lead levels experienced a 6.6 percent increase.

"No significant change was seen outside the city of Flint," the release says. "Most striking, in one area within Flint (blood lead levels) more than tripled ... increasing from 4.9 to 15.7 percent."

Doctor: Strongest link yet between Flint water, kids' lead levels (Midland Daily News)

http://www.ourmidland.com/news/doctor-strongest-link-yet-between-flint-water-kids-lead-levels/article_3d0658bc-a85e-11e5-9a57-0789c0b1bc41.html

Associated Press

Updated Dec 21, 2015

A new study provides the strongest evidence yet of a link between elevated blood-lead levels in children living in Flint, Michigan, and the struggling city's water system, a pediatrician who first raised alarms about the matter said Monday.

Dr. Mona Hanna-Attisha, director of pediatric residency at Hurley Children's Hospital, and other experts compiled the report using a more refined analysis. It showed that areas in Flint with the highest levels of lead in tap water corresponded with where young children with the highest blood-lead levels lived.

The study also confirmed her earlier assessment that the percentage of children with abnormally high blood-lead levels had at least doubled after the city stopped tapping Detroit's water system to save money in 2014, and began using water from the nearby Flint River.

The findings "strongly implicate the water source change as the probable cause for the dramatic increase," according to the report published in the American Journal of Public Health. The report said the results probably understate the danger because testing is not conducted before birth and during infancy, when numbers likely would be higher. Screenings usually are performed between ages 1 and 2.

"Everybody who drank this water or cooked with this water was exposed to lead," said Hanna-Attisha, the report's lead writer and an assistant professor at Michigan State University.

Flint and Genesee County have declared public health emergencies amid public outrage over the tainted water. Lead is a powerful toxin that can damage human nervous systems and is particularly harmful for young children, causing lower intelligence, developmental delays and behavior problems.

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No reason for the higher blood-lead levels except the water was found, the study said.

Health problems from lead can be hard to spot in young children, said Dr. Marcie Billings of the Mayo Clinic Children's Center in Rochester, Minnesota, who did not participate in the study. But parents should watch for future red flags such as anemia, low academic achievement and unusual behavioral changes, she said.

Although lead exposure is irreversible and no level is safe, not every affected child will suffer the worst results, Hanna-Attisha said. Good nutrition can help the body excrete toxins instead of absorbing them. Effective early-childhood education and relief from stresses such as poverty and violence are important.

"We have an opportunity to build a model public health program so we don't see these consequences," she said.

Was Lead Poisoning From Flint River Preventable? Research Implicates Water Supply (Medical Daily News)

http://www.medicaldaily.com/was-lead-poisoning-flint-river-preventable-research-implicates-water-supply-366452

Dec 22, 2015 01:31 PM By Stephanie Castillo

Just a week after Michigan mayor Karen Weaver declared a state of emergency over elevated levels of lead in children's blood, a new study published in the *American Journal of Public Health* reveals the strongest evidence of a link between elevated blood-lead levels and the city of Flint's poor water system.

Researchers cited in April 2014, the post-industrial city of Flint — the largest city in Michigan's Genesee Country — changed its water supply from the Detroit-supplied Lake Huron water to the Flint River. The change was meant to save the city money and was only temporary; they were awaiting a new pipeline to Lake Huron in 2016. But shortly after the switch, residents voiced concern about the new water's color, taste, odor, and their health. Some were experiencing skin rashes, and water tests detected *Escherichia coli* in the distribution system. Also around this time an unusual number of children had elevated levels of lead in their blood.

Lead is a potent neurotoxin, and in children, elevated blood levels (BLLs) can have developmental and biological effects, researchers said; "most notably intelligence, behavior, and overall life achievement." The Centers for Disease Control and Prevention cited BLLs increased the likelihood of learning disabilities; poorer performance on tests; and being non-proficient in math, science, and reading.

The Huffington Post cited Michigan State officials dismissed more than one report from the Michigan Department of Health and Human Services warning against "higher than usual" lead poisoning rates among children under the age of 16 living in Flint. But is the water change solely to blame?

That's what the present study set out to find. Researchers received BLLs for children younger than 5 years before and after the water source change in Flint in an effort to assess the percentage of elevated BLLs in both time periods. They used medical records to calculate the age they were tested and geocoded the data with a dual-range address locator, though they "derived overall neighborhood-level socioeconomic disadvantage from census block group variables intended to measure material and social deprivation."

The results revealed a "statistically significant increase" in the number of children living in Flint with BLLs from before the water change to the Flint children in the post-period. Before the change, 2.4 percent of children had higher BLLs compared to 4.9 percent of children after the water change.

What's more is in urban areas with high levels of socioeconomic disadvantage and minority populations, there seemed to be a problem with higher BLLs. "A review of alternative sources of lead exposure reveals no other potential environmental confounders during the same time period," researchers said.

Since no alternative source could point to another cofounder, the present findings offer the strongest evidence for the link between Flint's water source change and children's higher BLLs. Dr. Mona Hanna-Attisha, the report's lead writer and an assistant professor at Michigan State University, told AP everybody who drank or cooked with Flint's new water was exposed to lead.

"Lead in drinking water is different from lead from other sources, as it disproportionately affects developmentally vulnerable children and pregnant mothers," Hanna-Attisha and her team explained in their report. "Children can absorb 40 percent to 50 percent of an oral dose of water-soluble lead compared with 3 percent to 10 percent for adults. In a dose–response relationship for children aged 1 to 5 years, for every 1-ppb increase in water lead, blood lead increases 35 percent. The greatest risk of lead in water may be to infants on reconstituted formula."

While AP reported "lead exposure is irreversible and no level is safe," it doesn't affect all children the same. Hanna-Attisha pointed to "good nutrition" as a method of prevention given this better helps "the body excrete toxins instead of absorbing them."

Perhaps better than adhering to a healthy diet is the development of public health programs that educate both children and parents on the signs and side effects of lead poisoning, including but not limited to anemia, low academic achievement, and any unusual behavior changes. In fact, early childhood education was considered a primary method of prevention in the CDC's April 2015 report on children affected by lead.

"Primary prevention strategies that control or eliminate lead sources before children are exposed remain the pre-eminent public health approach to the problem of lead poisoning and are the only effective way to prevent the neurodevelopmental and behavioral abnormalities associated with lead exposure," Dr. Patrick N. Breysse, director of the CDC's National Center for Environmental Health and Agency for Toxic Substance and Disease Registry, prefaced the report's findings.

Since hundreds of thousands of children already have experienced blood lead levels known to impair academic performance and affect life success, in and outside of Flint, Breysse said we need "strategies that restore individuals to an optimal level of functioning after damage is done."

The report concluded everyone from the government, to pediatric health care providers and children's parents need more opportunities to learn the "importance of age appropriate blood lead testing and of primary prevention efforts. They may also need to be informed about the need for vigilance in the period after a test result and at critical transition points in educational expectations such as first, fourth, and sixth grades, and about early intervention programs and the merits of accepting a referral to them."

Source: Attisha MH, et al. Elevated Blood Lead Levels in Children Associated With the Flint Drinking Water Crisis: A Spatial Analysis of Risk and Public Health Response. *American Journal of Public Health*. 2015.

Toxic Michigan Water Linked to High Lead Levels in Children, Study Finds (TIME)

http://time.com/4159128/flint-michigan-lead-levels-water/

Melissa Chan @melissalchan

Dec. 22, 2015

"Everybody who drank this water or cooked with this water was exposed to lead"

Toxic levels of lead in the water supply in Flint, Mich., have been linked to elevated blood-lead levels in children, a new study has found.

The new findings "strongly implicate the water source change as the probable cause for the dramatic increase," the Flint *Journal* reports, citing the study published in the American Journal of Public Health.

The report found the highest levels of lead in tap water corresponded with where young children with the highest blood-lead levels lived, according to the *Journal*. It also found "no significant change" in blood-lead levels outside of the city.

Dr. Mona Hanna-Attisha, the director of pediatric residency at Hurley Children's Hospital and the study's lead researcher had previously found that the percentage of children with abnormally high blood-lead levels nearly doubled after Flint switched its water source in April 2014 to cheaper water from the Flint River—a discovery that the new study has confirmed. Flint Mayor Karen Weaver declared a state of emergency in mid-December.

"Everybody who drank this water or cooked with this water was exposed to lead," said Dr. Hanna-Attisha.

Flint Drinking Water News Clips December 23, 2015

- **Michigan Drinking Water Crisis Shows Limits Of EPA Lead Rule Changes (Inside EPA)**
- **State health fund needed in response to Flint water crisis, congressman says (mlive.com)**
- **State failed to sound alarm when it knew of rising Flint blood lead levels (mlive.com)**
- **New study links tainted water, high lead levels in kids in Flint, Mich. (CBS)**
- **Doctor: Strongest link yet between Flint water, kids' lead levels (Midland Daily News)**
- **Toxic Water Isn't Just in Michigan (TIME)**
- **Newly published study gives more evidence of elevated lead in Flint kids (mlive.com)**
- **Was Lead Poisoning From Flint River Preventable? Research Implicates Water Supply (Medical Daily News)**
- **Toxic Michigan Water Linked to High Lead Levels in Children, Study Finds (TIME)**

Michigan Drinking Water Crisis Shows Limits Of EPA Lead Rule Changes (Inside EPA)

http://insideepa.com/inside-epa/michigan-drinking-water-crisis-shows-limits-epa-lead-rule-changes

Posted: December 22, 2015

The drinking water crisis in Flint, MI, is highlighting the potential shortcomings of EPA regulations in preventing lead increases when a water system changes the source of its water, with sources saying that even recommended changes to the lead and copper rule (LCR) may not be enough to prevent a similar situation in the future.

Flint Mayor Karen Weaver declared a state of emergency Dec. 14 for the city due to the elevated levels of lead in drinking water, which have sickened many infants and children, after the city switched its water source from the Detroit water system to the Flint River in 2014. The city has since switched back to Detroit's water.

The declaration comes after several residents filed a class action suit Nov. 13 that charges state and local officials knew that switching drinking water sources would increase lead levels, and after a coalition of environmental and other advocacy groups Nov. 16 issued a notice of intent to sue the same officials, alleging that they failed to properly implement EPA-mandated lead testing and corrosion control programs in Flint.

An EPA task force is working with the state and local officials to address the problem while

Region 5 has launched a "full programmatic review" of Michigan drinking water programs. Region 5 Administrator Susan Hedman said in a Nov. 10 statement that the review will target the Michigan Department of Environmental Quality's (MDEQ) overall implementation of the Safe Drinking Water Act (SDWA) mandates as well as specific standards for total coliform and nitrates, EPA's LCR, and groundwater policies.

EPA's National Drinking Water Advisory Council (NDWAC) is recommending a number of changes to the LCR to further reduce national exposure to lead in drinking water, but the advisors said in November that the Flint crisis primarily was due to a failure to follow current LCR requirements for corrosion control testing. NDWAC included language in an "enhancement" letter to EPA Administrator Gina McCarthy along with the recommendations that says that "prior to the adoption of the new rule, compliance with the existing rule is essential" (*Inside EPA*, Nov. 27).

Under both the current rule and the recommended changes, water systems are not specifically required to conduct any additional testing when they switch water sources, although such testing is advised.

"When a system changes its source or treatment, and is required to consult with the state, the state primacy agency also may choose to require additional one-time monitoring to evaluate those changes if the degree of the change warrants," the draft NDWAC recommendation states. Some drinking water sources are more corrosive than others, increasing the likelihood that lead and copper from water pipes will leach into treated water.

MDEQ did not require the one-time monitoring, and one source with knowledge of the LCR process suggests that was one key mistake in Flint.

"I think everybody's culpable here," the source says. "It makes sense that the state primacy agency should have been involved. . . . The primacy agency does have a role to play, and there should have been some consultation, one would think. If I were creating a water supply, I'd consult with a water agency. They may have, and they may not have."

But the source acknowledges that the intent of the LCR was meant to monitor lead over time. "I don't know that there's an up-front testing requirement" in the rule for a circumstance like Flint, where the water source was switched, the source says. "Part of that gets left to the engineers to say, 'if our water source is going to be x, it's our obligation to do the work up front to figure out [if that will have lead]."

"We know lead is in the plumbing, we know how it gets mobilized, we know a lot about those factors, so in the case of Flint, one has to wonder how much testing was done to determine if there was potential" for contamination, the source says.

Rep. Dan Kildee (D-MI), who represents Flint, suggested at the Nov. 18 NDWAC meeting that EPA should not be left off the hook for the Flint crisis, particularly as it looks to finalize the new LCR.

"Ultimately, EPA has responsibility to ensure clean drinking water standards were followed. This rule must have greater transparency. Residents deserve to know why, for months, Michigan failed to follow federal safe drinking water laws," Kildee told the panel. He added that he hoped EPA Region 5's audit of MDEQ's implementation of SDWA could be included in revisions to the rule.

In the class action suit, *Melissa Mays, et al. v. Rick Snyder, et al.*, the plaintiffs allege that state and local officials deprived citizens of their 14th Amendment rights "in that they deprived plaintiffs of life, liberty and property without due process of law when they took from plaintiffs safe drinking water and replaced it with what they knew to be a highly toxic alternative solely for fiscal purposes." The suit is pending in the U.S. District Court for the Eastern Division of Michigan. *The suit is available on InsideEPA.com. (Doc. ID: 187372)*

The plaintiffs claim officials knew that the water pumped from the Flint River exposed residents to heightened levels of lead, based on a 2013 MDEQ report which warned that the Flint River water was highly corrosive and could not be safely used without an anti-corrosive agent that would prevent lead and copper from leading into the water lines: "Beginning in April 2014, Defendants were fully aware that the required and necessary anti-corrosive was not being used during the distribution of Flint River water to Flint residents, families and homeowners," the plaintiffs write, adding that the daily cost of such an anti-corrosive agent would have been $60.

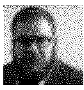
But in addition to the lack of an anti-corrosive agent, many observers have charged that MDEQ's oversight of Flint was insufficient and that both Flint and MDEQ officials failed to follow EPA rules for monitoring lead levels, including SDWA sampling procedures and the LCR mandate to implement a strategy to reduce corrosion of its drinking water pipes.

A spokesman for EPA Region 5 noted in a recent email to *Inside EPA* that Mayor Weaver had met with Region 5 and MDEQ officials Dec. 11, prior to the state of emergency declaration. -- *Amanda Palleschi*

Inside EPA - 12/25/2015 , Vol. 36, No. 51

State health fund needed in response to Flint water crisis, congressman says (mlive.com)

http://www.mlive.com/news/flint/index.ssf/2015/12/us_rep_dan_kildee_calls_for_st.html

By Gary Ridley | gridley@mlive.com
Follow on Twitter
on December 23, 2015 at 5:30 AM, updated December 23, 2015 at 10:54 AM

U.S. Rep. Dan Kildee, D-Flint Township, meets with The Flint Journal Editorial Board on Tuesday, Dec. 22, 2015.Jake May | MLive.com

FLINT, MI -- As questions continue to swirl about who should be held responsible for the Flint water crisis, U.S. Rep. Dan Kildee said the state needs to step forward and fund a program to benefit the health of the city's youngest residents.

Kildee, D-Flint Township, continued to call for a state-financed program during a Tuesday, Dec. 22, meeting with The Flint Journal editorial board that would be used to continually monitor potential health ramifications for those exposed to elevated lead levels in the city's water supply.

News organizations from around the country have brought a renewed spotlight to the city's water issues after newly-elected Mayor Karen Weaver called declared a state of emergency.

However, Kildee said not enough focus has been paid to helping those potentially harmed by the water woes.

"My focus is on getting the kids help," Kildee said, adding that such a health fund would be unprecedented.

Kildee said he has met with members of the medical community, including Dr. Mona Hanna-Attisha, the director of Hurley Medical Center's Pediatric Residency Program, whose initial research first showed rising levels of lead in the blood of Flint children, to try and develop a medical response to what he called a "failure of government."

Flint changed its water source from Lake Huron water purchased from the Detroit water system to the Flint River in April 2014, a decision made while the city was being run by a state-appointed emergency manager.

State regulators never required that the river water be treated to make it less corrosive, causing lead from plumbing and pipes to leach into the water supply. Even though the city reconnected to the Detroit water system in October, local officials have advised Flint residents not to drink city water unless they are using a lead-clearing filter.

Earlier this month, Hanna-Attisha told The Flint Journal-MLive that she was continuing to analyze data comparing the blood lead levels of Flint children under 5 years old from January to September 2013 and from January to September 2015, nine months in which the city was using the Flint River as its water source.

My focus is on getting the kids help.

"The percentage of children with elevated blood levels significantly increased after the water source changed," Hurley said in a new release. "Results showed the incidence of elevated blood lead levels increased from 2.4 to 4.9 percent ... and city areas with the highest water lead levels experienced a 6.6 percent increase."

The Centers for Disease Control and Prevention says children under 6 are among those at high risk for the effects of lead poisoning. U.S. Census Bureau estimates show there are between 6,000 and 8,000 children under 5 in the city.

Though funded by the state, Kildee said the health fund would be managed locally.

State officials say they have been active in their response to the situation, and pointed to Gov. Rick Snyder's creation of a five-member task force in October charged with reviewing the response to the water crisis and making recommendations.

"We are committed to protecting the health of children in Flint now and into the future, and helping anyone who has been affected by the water challenges in Flint," said Snyder Press Secretary Dave Murray. We're already taking steps called for in Gov. Snyder's action plan, and are working with the Flint Water Task Force to see what additional actions it recommends to help children and adults and address any issues that were created b this situation."

However, some Democratic leaders have claimed the Republican-led state government hasn't done enough to address the situation in Flint.

U.S. Sen. Debbie Stabenow, who was in Flint Tuesday to announce potential new anti-blight funding, called on Lansing to take a larger role in tackling Flint's lead issue.

"The State of Michigan, where the negligence rose, has to step up in a much-bigger way to help Flint," Stabenow said.

Murray said the state is continuing to work with city leaders in addressing the issue and has offered $10 million in grants and other financial assistance to help facilitate the city's switch back to Detroit water, improve the city's water infrastructure and provide filters for residents.

"Flint residents need to have access to safe, clean water," Murray said. "Gov. Snyder and administration members continue to work closely with Mayor Weaver and other city leaders to focus on health issues affecting children and other city residents, and address water infrastructure challenges."

State failed to sound alarm when it knew of rising Flint blood lead levels (mlive.com)

http://www.mlive.com/news/flint/index.ssf/2015/12/documents_show_state.html

By Ron Fonger | rfonger1@mlive.com
on December 22, 2015 at 5:55 PM, updated December 23, 2015 at 8:00 AM

FLINT, MI -- State officials found evidence of rising blood lead levels in Flint two months before the problem was exposed by a Flint pediatrician, but didn't immediately inform the public, according to documents released by a water researcher.

Michigan public health officials said today, Dec. 22, that they did not sound an alarm about the spike, which coincided with use of the Flint River for drinking water, because they initially believed the numbers represented a "seasonal fluctuation."

As a result of what happened in Flint, state officials now say that the way the state analyzes the data they collect needs to be "thoroughly reviewed."

Virginia Tech Professor Marc Edwards, a key figure in the Flint water crisis, released 159 pages of public records on his Web site this week, documents received in response to a Freedom of Information Act request to the state.

The records are a collection of emails and attachments, primarily from officials at the Michigan Department of Health & Human Services, about Flint water.

The documents show:

- Emails about blood lead levels in Flint date back to at least July 23 and by July 28, inner-office correspondence says the city's rising numbers warrant further investigation and that "there does appear to be a higher proportion of (elevated blood lead levels) last summer (2014) than usual."
- A report prepared by the state DHHS's Child Health Epidemiology Section, which included data up to July 27, concluded "positive tests for (elevated blood lead levels) were higher than usual for children under age 16 living in the city of Flint during the months of July, August and September 2014."

- A Sept. 11 email from Robert L. Scott of DHHS' Childhood Lead Poisoning Program tells others in the department that he has received a request for information about blood lead levels in Flint. "Sounds like there might be more to this than what we learned previously. Yikes," the email says.

Edwards said today, Dec. 22, that the documents show the state had evidence of elevated blood lead levels in Flint while the Michigan Department of Environmental Quality and the city of Flint denied a public health problem with lead in the city's water supply.

After Edwards reported his testing showed a serious problem with lead in Flint water, a DEQ spokesman questioned the credibility of his research and former Flint mayor Dayne Walling assured residents it was safe to drink until September when a Flint pediatrician reported her findings.

Those denials would not have continued as long as they did had state health officials told the public what it had discovered, the professor said.

"Everything they looked at, they found a problem, and they never told anyone," Edwards said of the agency.

Dr. Eden Wells, chief medical executive for the DHHS, said today that the documents do show missed opportunities for the state to have addressed Flint's lead in water crisis earlier, but do not show an effort to withhold information.

"I have done this a lot after (disease) outbreaks ... You always go back, and learn from them, (including whether evidence) could have allowed for an earlier response," she said.

Wells, who was named by Gov. Rick Snyder to be Flint's drinking water public health adviser, said state health officials initially concluded that spikes in blood lead lead levels immediately after the city changed its water source to the Flint River were seasonal and not related to water.

DHHS officials initially questioned the findings by a Hurley Medical Center pediatrician, Dr. Mona Hanna-Attisha, who on Sept. 24 showed blood lead levels of children in some parts of the city tripled after the switch to Flint River water.

The released emails show that on Sept. 28, in preparation for a news conference on Hanna-Attisha's findings, the director of the state health department said he needed an analysis of the Flint doctor's data and her conclusions.

"I would like to make a strong statement with a demonstration of proof that the lead blood levels seen are not out of the ordinary and are attributable to seasonal fluctuations," the email from DHHS Director Nick Lyon said.

Blood lead levels above 5 micrograms per deciliter are considered elevated by the Center for Disease Control and Prevention.

Wells said only after reviewing the state's own data further, examining it based on zip codes and focusing on young children, who are most susceptible to lead poisoning, could she conclude blood lead levels were rising among Flint children under 5 years old.

Jennifer Eisner, a spokeswoman for DHHS, said the department initially believed higher blood lead levels were due to seasonal fluctuations.

"As a result of this process, we have determined that the way we analyze data collected needs to be thoroughly reviewed," Eisner said in an email to The Flint Journal-MLive.

Wells was involved in a follow-up examination of state data after Hanna-Attisha made her research public in late September. Wells eventually agreed with the Flint doctor.

Edwards said he spent weeks in an effort to get access to state blood lead level data after testing of Flint water by Virginia Tech found lead levels in water rising as well.

The professor said he encountered resistance from state agencies in releasing blood lead data, delaying efforts to address the problem.

Edwards' experiments on the river water found it was far more corrosive than Lake Huron water that had been purchased from the Detroit water system and used in Flint for decades.

Flint reconnected to the Detroit system in October, using state, local and grant funds to end its use of the Flint River after 17 months.

State and federal reviews of how the Flint's water crisis was allowed to happen are ongoing.

New study links tainted water, high lead levels in kids in Flint, Mich. (CBS)

http://www.cbsnews.com/news/tainted-water-high-lead-levels-kids-flint-michigan/

A new study provides the strongest evidence yet of a link between elevated blood-lead levels in children living in Flint, Michigan, and the struggling city's water system, a pediatrician who first raised alarms about the matter said Monday.

Dr. Mona Hanna-Attisha, director of pediatric residency at Hurley Children's Hospital, and other experts compiled the report using a more refined analysis. It showed that areas in Flint with the highest levels of lead in tap water corresponded with where young children with the highest blood-lead levels lived.

The study also confirmed her earlier assessment that the percentage of children with abnormally high blood-lead levels had at least doubled after the city stopped tapping Detroit's water system to save money in 2014, and began using water from the nearby Flint River.

The findings "strongly implicate the water source change as the probable cause for the dramatic increase," according to the report published in the American Journal of Public Health. The report said the results probably understate the danger because testing is not conducted before birth and during infancy, when numbers likely would be higher. Screenings usually are performed between ages 1 and 2.

"Everybody who drank this water or cooked with this water was exposed to lead," said Hanna-Attisha, the report's lead writer and an assistant professor at Michigan State University.

Flint and Genesee County have declared public health emergencies amid public outrage over the tainted water. Lead is a powerful toxin that can damage human nervous systems and is particularly harmful for young children, causing lower intelligence, developmental delays and behavior problems.

"Lead at any level can be associated with decreases in IQ, behavioral disorders, even an association with certain juvenile delinquency as these children get older," Dr. Eden Wells, Chief Medical Executive for the Michigan Department of Health and Human Services, told CBS News.

The city of about 99,000 residents started using the Flint River as an interim water source until it could hook up to a new system drawing water from Lake Huron that is scheduled for completion next year. The cost-cutting move was made while the city was under state emergency financial management.

But the river water drew complaints about its taste, smell and appearance.

Hanna-Attisha announced in September that data from blood tests routinely administered to young children showed that lead levels had jumped since the water systems were changed. State officials initially challenged, but later acknowledged, the findings, and Flint resumed using Detroit water. The state has approved millions of dollars in aid to address the crisis.

For their updated study, Hanna-Attisha and her colleagues refined their data, focusing specifically on children under age 5 within the city limits and excluding those who live outside the city but within Flint ZIP codes, where no significant changes in blood-lead levels were found.

The researchers found that the proportion of children with at least five milligrams of lead per deciliter - the point considered elevated - had risen from 2.4 percent in the nine months before the water switch to 4.9 percent in the nine months afterward.

In neighborhoods with the highest water lead levels, the increase was even bigger: to 6.6 percent. And in one section of town, the percentage of children with elevated levels went from 4.9 percent to 15.7 percent.

No reason for the higher blood-lead levels except the water was found, the study said.

Health problems from lead can be hard to spot in young children, said Dr. Marcie Billings of the Mayo Clinic Children's Center in Rochester, Minnesota, who did not participate in the study. But parents should watch for future red flags such as anemia, low academic achievement and unusual behavioral changes, she said.

Although lead exposure is irreversible and no level is safe, not every affected child will suffer the worst results, Hanna-Attisha said. Good nutrition can help the body excrete toxins instead of absorbing them. Effective early-childhood education and relief from stresses such as poverty and violence are important.

"We have an opportunity to build a model public health program so we don't see these consequences," she said.

Concerned families can visit their pediatrician's office or go to their local health department for free blood level testing. Medicaid pays for lead tests.

"We really worry about pregnant women and infants. We know that long-standing lead exposure can lead to some long-term effects," said Dr. Carlos Lerner, medical director of the Children's Health Center at the Mattel Children's Hospital UCLA,

Toxic Water Isn't Just in Michigan (TIME)

http://time.com/4156867/toxic-water-michigan/

Nancy Loeb

Dec. 21, 2015

Nancy Loeb is an assistant clinical professor of Law and the director of the Environmental Advocacy Clinic at Northwestern University Law School's Bluhm Legal. She is an OpEd Project Public Voices fellow.

4 lessons we must learn from the tragedy in Flint

The water supply in Flint, Mich., contains toxic levels of lead that are particularly harmful to children. The costs needed to begin to fix this led Flint Mayor Karen Weaver to declare a state of emergency in mid-December.

This is a tragedy—one that was entirely avoidable. The poisoning is the result of short-sighted changes by the government that were focused on saving money and that were made without adequate consideration of potential consequences. If we don't start addressing the underlying problems, there will likely be more Flints to come.

What happened in Flint?

Flint management decided to switch the city's water source from water supplied by Detroit to a new source from Lake Huron. But because the pipelines needed were a year and a half away from being completed, Flint residents were switched temporarily in April 2014 to cheaper water from the Flint River.

Changing drinking water sources isn't as simple as changing a budget number and flipping a switch. The pipes that deliver water within Flint—like the pipes in many cities throughout the U.S.—are old and made of or contain lead. The chemical makeup of the water from the Flint River makes it more corrosive than Detroit's water, causing lead to leach from the aging pipes, contaminating Flint's water with dangerous levels of lead.

A study presented in September by the Hurley Medical Center showed that blood lead levels in children under 5 years of age living in Flint zip codes that were supplied by the Flint River water increased dramatically in the year and a half that Flint's water was sourced from the Flint River. Further, the number of Flint children in those zip codes with dangerously elevated blood levels more than doubled in just that year and a half.

Lead is toxic, especially for children. Children exposed to lead face significantly increased risks of impaired brain development and cognitive functions, lower IQs, attention-related behavior problems, lower levels of academic achievement, and violent tendencies. Flint's children now face these risks.

We can't undo what happened in Flint. But we can learn from it and protect potentially millions of children throughout the U.S. Here are four lessons from Flint.

1. The drinking water infrastructure in the U.S. is aging to the point of danger. In Chicago, where I live, for example, some of the pipes that deliver drinking water to homes are 100 years old. We drink water from Lake Michigan that is treated for safety from chemicals and disease, but between the water treatment plant and our taps, that water runs through old pipes that can leach lead. Chicago is now replacing 900 miles of water mains in a process that will take 10 years. Today, we know better than to use lead pipes to transport water. But millions of people in the U.S. are still getting water from old lead pipes. Until those pipes are replaced, the lead hazard will remain.

2. Short-term budget "fixes" often cost more in the long-run. After the lead issue was discovered, Flint was hooked back up to Detroit's water supply for the short time left until the new Lake Huron pipelines are available. The cost to switch back is reported to be $12 million. In addition, there will be the costs of testing, monitoring and treating Flint's children. These costs are what led Flint's mayor to seek federal disaster relief.

3. We are not testing water at the tap enough to know whether it contains dangerously high levels of lead. Regulations issued by the Environmental a Protection Agency (EPA) to implement the Safe Drinking Water Act, which is supposed to protect public water sources, are insufficient to detect all lead problems. Under EPA's Lead and Copper Rule, only 100 taps must be tested for lead in a public water system that serves more than one hundred thousand people. The failure to detect dangerously high levels of lead in Flint's water clearly calls into question the adequacy of EPA's requirements for testing at the tap.

4. The EPA is failing to adopt the most current health standard, set by a panel of experts convened by the Centers for Disease Control, for childhood lead exposures. The only good news coming out of the Flint tragedy is that officials there based the declaration of a health emergency on the more protective health standards adopted by the CDC in 2012. EPA still has not adopted that standard. They need to; our children deserve better.

It's easy to put our heads in the sand and pretend that problems don't exist or that we can't afford to fix them. But we owe it to the children of Flint and all American children to face into these problems and allocate the funds needed to fix them.

Strong Link Between Lead & Flint Water (WILX 10)

http://www.wilx.com/home/headlines/Strong-Link-Between-Lead--Flint-Water-363220161.html

Posted: Tue 3:00 AM, Dec 22, 2015

By: AP

Researchers say they have the strongest evidence yet that links elevated blood-lead levels in children in Flint, Michigan, to the city's water system.
A report by a pediatrician found that city children who have the highest levels of lead in their blood live in areas that have the highest levels of lead in tap water.
And the number of children with high levels of lead in their blood doubled after Flint stopped tapping into Detroit's water system in 2014.

Newly published study gives more evidence of elevated lead in Flint kids (mlive.com)

http://www.mlive.com/news/flint/index.ssf/2015/12/health_journal_publishes_blood.html

By Ron Fonger | rfonger1@mlive.com
on December 21, 2015 at 5:44 PM, updated December 22, 2015 at 9:13 AM

FLINT, MI -- The American Journal of Public Health has published research by Dr. Mona Hanna-Attisha that further details the rise in blood lead levels in children who drank Flint River water for as long as 17 months.

Hanna-Attisha, the director of Hurley Medical Center's Pediatric Residency Program, whose initial research first showed rising levels of lead in the blood of Flint children, said the most recent findings support that first study.

"It's a little more detailed. It solidifies the reseach, (and) it's a finer analysis," Hanna-Attisha said today, Dec. 21.

The American Journal of Public Health Research was conducted by Hanna-Attisha; Jenny LaChance of Hurley Research Center; Richard Sadler of the College of Human Medicine Division of Public Health; and Dr. Allison Champney Schnepp, pediatric resident at Hurley Children's Hospital and Michigan State University.

Flint changed its water source from Lake Huron water purchased from the Detroit water system to the Flint River in April 2014, a decision made while the city was being run by a state-appointed emergency manager.

State regulators never required that the river water be treated to make it less corrosive, causing lead from plumbing and pipes to leach into the water supply.

Even though the city reconnected to the Detroit water system in October, local officials have advised Flint resident not to drink city water unless they are using a lead-clearing filter.

Earlier this month, Hanna-Attisha told The Flint Journal-MLive that she was continuing to analyze data comparing the blood lead levels of Flint children from January to September 2013 and from January to September 2015, nine months in which the city was using the Flint River as its water source.

By spending more time with her initial data, the doctor said the evidence of elevated lead levels in the blood of children younger than 5 became even stronger.

Researchers were able to include only children exposed to Flint River water, removing data for kids who lived in home with Flint zip codes but who actually lived in neighboring cities or township and who were not exposed to river water.

"The percentage of children with elevated blood levels significantly increased after the water source changed," Hurley said in a new release. "Results showed the incidence of elevated blood lead levels increased from 2.4 to 4.9 percent ... and city areas with the highest water lead levels experienced a 6.6 percent increase.

"No significant change was seen outside the city of Flint," the release says. "Most striking, in one area within Flint (blood lead levels) more than tripled ... increasing from 4.9 to 15.7 percent."

Doctor: Strongest link yet between Flint water, kids' lead levels (Midland Daily News)

http://www.ourmidland.com/news/doctor-strongest-link-yet-between-flint-water-kids-lead-levels/article_3d0658bc-a85e-11e5-9a57-0789c0b1bc41.html

Associated Press

Updated Dec 21, 2015

A new study provides the strongest evidence yet of a link between elevated blood-lead levels in children living in Flint, Michigan, and the struggling city's water system, a pediatrician who first raised alarms about the matter said Monday.

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The study also confirmed her earlier assessment that the percentage of children with abnormally high blood-lead levels had at least doubled after the city stopped tapping Detroit's water system to save money in 2014, and began using water from the nearby Flint River.

The findings "strongly implicate the water source change as the probable cause for the dramatic increase," according to the report published in the American Journal of Public Health. The report said the results probably understate the danger because testing is not conducted before birth and during infancy, when numbers likely would be higher. Screenings usually are performed between ages 1 and 2.

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Mayo Clinic Children's Center in Rochester, Minnesota, who did not participate in the study. But parents should watch for future red flags such as anemia, low academic achievement and unusual behavioral changes, she said.

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"We have an opportunity to build a model public health program so we don't see these consequences," she said.

Was Lead Poisoning From Flint River Preventable? Research Implicates Water Supply (Medical Daily News)

http://www.medicaldaily.com/was-lead-poisoning-flint-river-preventable-research-implicates-water-supply-366452

Dec 22, 2015 01:31 PM By Stephanie Castillo

Just a week after Michigan mayor Karen Weaver declared a state of emergency over elevated levels of lead in children's blood, a new study published in the *American Journal of Public Health* reveals the strongest evidence of a link between elevated blood-lead levels and the city of Flint's poor water system.

Researchers cited in April 2014, the post-industrial city of Flint — the largest city in Michigan's Genesee Country — changed its water supply from the Detroit-supplied Lake Huron water to the Flint River. The change was meant to save the city money and was only temporary; they were awaiting a new pipeline to Lake Huron in 2016. But shortly after the switch, residents voiced concern about the new water's color, taste, odor, and their health. Some were experiencing skin rashes, and water tests detected *Escherichia coli* in the distribution system. Also around this time an unusual number of children had elevated levels of lead in their blood.

Lead is a potent neurotoxin, and in children, elevated blood levels (BLLs) can have developmental and biological effects, researchers said; "most notably intelligence, behavior, and overall life achievement." The Centers for Disease Control and Prevention cited BLLs increased the likelihood of learning disabilities; poorer performance on tests; and being non-proficient in math, science, and reading.

The Huffington Post cited Michigan State officials dismissed more than one report from the Michigan Department of Health and Human Services warning against "higher than usual" lead poisoning rates among children under the age of 16 living in Flint. But is the water change solely to blame?

That's what the present study set out to find. Researchers received BLLs for children younger than 5 years before and after the water source change in Flint in an effort to assess the percentage of elevated BLLs in both time periods. They used medical records to calculate the age they were tested and geocoded the data with a dual-range address locator, though they "derived overall neighborhood-level socioeconomic disadvantage from census block group variables intended to measure material and social deprivation."

The results revealed a "statistically significant increase" in the number of children living in Flint with BLLs from before the water change to the Flint children in the post-period. Before the change, 2.4 percent of children had higher BLLs compared to 4.9 percent of children after the water change.

What's more is in urban areas with high levels of socioeconomic disadvantage and minority populations, there seemed to be a problem with higher BLLs. "A review of alternative sources of lead exposure reveals no other potential environmental confounders during the same time period," researchers said.

Since no alternative source could point to another cofounder, the present findings offer the strongest evidence for the link between Flint's water source change and children's higher BLLs. Dr. Mona Hanna-Attisha, the report's lead writer and an assistant professor at Michigan State University, told AP everybody who drank or cooked with Flint's new water was exposed to lead.

"Lead in drinking water is different from lead from other sources, as it disproportionately affects developmentally vulnerable children and pregnant mothers," Hanna-Attisha and her team explained in their report. "Children can absorb 40 percent to 50 percent of an oral dose of water-soluble lead compared with 3 percent to 10 percent for adults. In a dose–response relationship for children aged 1 to 5 years, for every 1-ppb increase in water lead, blood lead increases 35 percent. The greatest risk of lead in water may be to infants on reconstituted formula."

While AP reported "lead exposure is irreversible and no level is safe," it doesn't affect all children the same. Hanna-Attisha pointed to "good nutrition" as a method of prevention given this better helps "the body excrete toxins instead of absorbing them."

Perhaps better than adhering to a healthy diet is the development of public health programs that educate both children and parents on the signs and side effects of lead poisoning, including but not limited to anemia, low academic achievement, and any unusual behavior changes. In fact, early childhood education was considered a primary method of prevention in the CDC's April 2015 report on children affected by lead.

"Primary prevention strategies that control or eliminate lead sources before children are exposed remain the pre-eminent public health approach to the problem of lead poisoning and are the only effective way to prevent the neurodevelopmental and behavioral abnormalities associated with lead exposure," Dr. Patrick N. Breysse, director of the CDC's National Center for Environmental Health and Agency for Toxic Substance and Disease Registry, prefaced the report's findings.

Since hundreds of thousands of children already have experienced blood lead levels known to impair academic performance and affect life success, in and outside of Flint, Breysse said we need "strategies that restore individuals to an optimal level of functioning after damage is done."

The report concluded everyone from the government, to pediatric health care providers and children's parents need more opportunities to learn the "importance of age appropriate blood lead testing and of primary prevention efforts. They may also need to be informed about the need for vigilance in the period after a test result and at critical transition points in educational expectations such as first, fourth, and sixth grades, and about early intervention programs and the merits of accepting a referral to them."

Source: Attisha MH, et al. Elevated Blood Lead Levels in Children Associated With the Flint Drinking Water Crisis: A Spatial Analysis of Risk and Public Health Response. *American Journal of Public Health*. 2015.

Toxic Michigan Water Linked to High Lead Levels in Children, Study Finds (TIME)

http://time.com/4159128/flint-michigan-lead-levels-water/

Melissa Chan @melissalchan

Dec. 22, 2015

"Everybody who drank this water or cooked with this water was exposed to lead"

Toxic levels of lead in the water supply in Flint, Mich., have been linked to elevated blood-lead levels in children, a new study has found.

The new findings "strongly implicate the water source change as the probable cause for the dramatic increase," the Flint *Journal* reports, citing the study published in the American Journal of Public Health.

The report found the highest levels of lead in tap water corresponded with where young children with the highest blood-lead levels lived, according to the *Journal*. It also found "no significant change" in blood-lead levels outside of the city.

Dr. Mona Hanna-Attisha, the director of pediatric residency at Hurley Children's Hospital and the study's lead researcher had previously found that the percentage of children with abnormally high blood-lead levels nearly doubled after Flint switched its water source in April 2014 to cheaper water from the Flint River—a discovery that the new study has confirmed. Flint Mayor Karen Weaver declared a state of emergency in mid-December.

"Everybody who drank this water or cooked with this water was exposed to lead," said Dr. Hanna-Attisha.

To: Kaplan, Robert[kaplan.robert@epa.gov]; Hedman, Susan[hedman.susan@epa.gov]; Henry, Timothy[henry.timothy@epa.gov]; Hyde, Tinka[hyde.tinka@epa.gov]; Rowan, Anne[rowan.anne@epa.gov]
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From: Kelley, Jeff
Sent: Thur 12/24/2015 12:41:43 AM
Subject: Re: FW: Task Force one pager

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Jeff Kelley
Director, Office of External Communications
U.S. EPA Region 5
ph: 312-353-1159

From: Hedman, Susan <hedman.susan@epa.gov>
Sent: Wednesday, December 23, 2015 6:09 PM
Subject: FW: Task Force one pager
To: Kaplan, Robert <kaplan.robert@epa.gov>, Henry, Timothy <henry.timothy@epa.gov>,

Hyde, Tinka <hyde.tinka@epa.gov>, Kelley, Jeff <kelley.jeff@epa.gov>, Rowan, Anne <rowan.anne@epa.gov>
Cc: Beckmann, Ronna Erin <beckmann.ronna@epa.gov>, Fortin, Denise <fortin.denise@epa.gov>, Deamer, Eileen <deamer.eileen@epa.gov>

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From: Hedman, Susan
Sent: Thur 12/24/2015 1:39:14 AM
Subject: RE: FW: Task Force one pager

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From: Kelley, Jeff
Sent: Wednesday, December 23, 2015 6:42 PM
To: Kaplan, Robert <kaplan.robert@epa.gov>; Hedman, Susan <hedman.susan@epa.gov>; Henry, Timothy <henry.timothy@epa.gov>; Hyde, Tinka <hyde.tinka@epa.gov>; Rowan, Anne <rowan.anne@epa.gov>
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From: Kelley, Jeff
Sent: Thur 12/24/2015 4:08:57 PM
Subject: RE: FW: Task Force one pager

Allison just posted the updated information: http://www.epa.gov/mi/flint-safe-drinking-water-task-force-activities

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U.S. EPA Region 5
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On Wed, Dec 23, 2015 at 5:39 PM -0800, "Hedman, Susan" <hedman.susan@epa.gov> wrote:

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From: Hedman, Susan
Sent: Thur 12/24/2015 4:44:03 PM
Subject: Re: Task Force one pager

Thanks very much! Hope you are all getting some well-deserved time off over the holidays.

Sent from my iPhone

On Dec 24, 2015, at 10:09 AM, Kelley, Jeff <kelley.jeff@epa.gov> wrote:

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From: Singer, Joshua
Sent: Thur 12/24/2015 4:51:59 PM
Subject: Flint Drinking Water News Clips 12/24/15

FLINT DRINKING WATER CLIPS

dECEMBER 24, 2015

State's handling of Flint water samples delayed action (Detroit Free Press)

Questions over emergency manager law arise in Flint water rates lawsuit (mlive.com)

Flint judge sides with city over water shutoffs (WLNS 6)

Congressman calls for state water crisis health fund on Rachel Maddow show (mlive.com)

Suffer, Flint's Children (Dissident Voice)

State's handling of Flint water samples delayed action (Detroit Free Press)

http://www.freep.com/story/news/politics/2015/12/23/states-handling-flint-water-samples-delayed-action/77367872/

Paul Egan, Detroit Free Press 10:09 a.m. EST December 24, 2015

LANSING — Lead levels in Flint's drinking water would have spurred action months sooner if the results of city testing that wrapped up in June had not been revised by the Michigan Department of Environmental Quality to wrongly indicate the water was safe to drink, e-mails show.

The records — obtained by the Michigan ACLU and by Marc Edwards, a Virginia Tech researcher who helped raise concerns about Flint's water — show how state officials first appear to have encouraged the City of Flint to find water samples with low lead levels and later told Flint officials to disqualify two samples with high readings. The move changed the overall lead level results to acceptable from unacceptable.

The e-mails also show that DEQ district coordinator Stephen Busch told the U.S. Environmental Protection Agency on Feb. 27 that Flint had "an optimized corrosion control program" to prevent lead from leaching into the drinking water from pipes, connections and fixtures. In fact, the city — disastrously — had no corrosion control program.

Why those DEQ officials took the actions they did is a question at the center of a tragedy that has left an unknown number of children and other Flint residents poisoned by lead, and has led to a federal lawsuit and calls for a U.S. Justice Department investigation. The questions surrounding the testing are in addition to the broader question of why Flint, which was under the control of a state-appointed emergency manager at the time, switched its drinking water source, starting in April 2014, from Lake Huron water supplied by Detroit to the much more polluted and corrosive water from the Flint River.

Brad Wurfel, a spokesman for DEQ Director Dan Wyant, declined to say Tuesday why Busch gave inaccurate information to the EPA, why another DEQ official told Flint officials he was hoping they would send him water samples showing low lead levels, or why the DEQ was strict in disqualifying certain water samples with high lead readings but not strict in disqualifying other samples showing low lead levels that did not appear to meet the sampling criteria.

"Most of these questions regard issues presently before the governor's independent after-action review panel," Wurfel told the Free Press in an e-mail. "We don't want to get in front of that review."

On June 25, Adam Rosenthal, of the DEQ's Office of Drinking Water and Municipal Assistance, sent an e-mail about the water samples, required under the federal Lead and Copper Rule, to Michael Glasgow, a utilities administrator with the City of Flint.

The Michigan Department of Environmental Quality revised downward the results of water samples in Flint. (Photo: Detroit Free Press file photo)

"Just wanted to remind you/confirm that Flint is on track for a few items," Rosenthal wrote in the e-mail, which he copied to two other DEQ officials.

"We hope you have 61 more lead/copper samples collected and sent to the lab by 6/30/15, and that they are will be (sic) below the AL (action level) for lead," the e-mail said. "As of now with 39 results, Flint's 90th percentile is over the AL for lead."

If 100 lead-in-water samples were listed in ascending order, the 90th percentile would be the 90th sample, meaning 10 samples would have higher readings. To stay below the "action level," which triggers requirements for public notification and steps to reduce the amount of lead in the water, the 90th percentile for Flint's drinking water samples had to be at or below 15 parts per billion. To put it another way, Flint's water would reach an action level if more than 10% of the samples exceed 15 parts per billion.

Melissa Mays, a Flint resident who drank the contaminated water along with her three boys, said there is only one way to read the Rosenthal e-mail.

"The MDEQ informed the City of Flint that they were in danger of going in violation, and they asked for low samples," Mays told the Free Press.

Wurfel wouldn't comment when asked if that's how the e-mail should be interpreted. Rosenthal did not respond to an e-mail seeking comment. Busch, who was copied on the e-mail Rosenthal sent to Flint, sent an automated e-mail reply that said he is out of the office until Jan. 4.

Had Flint's water sampling come in above the action level, it would have triggered action in July. Instead, it was not until October, after blood test results showed elevated lead levels in Flint children, that the DEQ admitted making a mistake about failing to require the addition of needed corrosion control chemicals to the Flint River water. The state also provided funds to help Flint reconnect to Lake Huron water supplied by Detroit.

The EPA requires that water sampling be done at "high-risk" locations whenever possible. To comply with that, the American Water Works Association says cities such as Flint should collect 50% of samples from homes with lead service lines. For the samples taken in 2015, the EPA rules also required that Flint sample the same 100 homes it sampled the previous year, between July and December of 2014.

But the City of Flint didn't get 100 samples in 2015. After receiving Rosenthal's e-mail expressing a hope for samples below the action level, the city in the next five days collected 30 additional samples, all of which were below the action level.

The DEQ decided that fewer than 100 samples would suffice because Flint's population had dropped below 100,000.

But Edwards said the smaller number of samples the DEQ allowed still should have come from the group of 100 homes tested a year earlier and should have all come from homes at high risk for lead.

The Michigan ACLU, and later the Flint Journal has reported that seven of the additional samples the city collected, or nearly 25% of them, came from a single stretch of Flushing Road in Flint, where the city had replaced a lengthy session of water main in 2007. Not surprisingly, all of those samples measured very low for lead.

In all, the newspaper reported, only 13 of the homes sampled were from the same list of 100 homes tested in 2014. All the homes that were sampled for a second time in 2015 had tested low for lead in 2014. None of the homes that in 2014 had lead levels above the 15 parts per billion action level were sampled a second time.

Edwards told the Free Press the samples were "cherry-picked," and that's a violation of federal law.

Wurfel would not comment when asked if that was the case.

Even then, the 71 samples Flint relied on would have put the city's water above the action level under the original report Flint prepared, dated July 28. Only after two high lead samples were disqualified at the direction of the DEQ, bringing the total number of samples used down to 69, was the water found to be at 11 parts per billion for lead, below the action level.

The revised report, dated Aug. 20, included the following comment from Flint utilities administrator Michael Glasgow: "Revised report after conference call with DEQ staff. Two samples were removed from list for not meeting sample criteria ..."

One of the disqualified samples, which showed lead at more than 100 parts per billion, came from the home of LeeAnne Walters. Walters had subsequently been retested with results coming back even worse and was visited by an EPA official in April. That EPA official, Miguel Del Toral, found that Walters' indoor plumbing was plastic and could not be the source of the high lead readings, as the DEQ had suggested to him.

The DEQ disqualified another high lead-level sample because it did not come from a single-family residence.

On Aug. 4, Walters, other community activists, and concerned pastors met at the Capitol with top aides to the governor and officials from the DEQ. Walters asked why her sample wasn't used and didn't get an explanation. She and others at the meeting say Harvey Hollins, an aide to Gov. Rick Snyder who was last week named the state's point man on the Flint water issue, instructed DEQ officials to get back to her on why her sample wasn't used.

Walters says she never received that explanation, but the DEQ produced a letter sent to Walters by e-mail in response to a FOIA request from Edwards.

In the Aug. 25 e-mail, Liane Shekter Smith, who at the time was the chief of the DEQ's Office of Drinking Water and Municipal Assistance but was reassigned in October after the DEQ acknowledged oversight mistakes in connection with Flint's drinking water, tells Walters her results were disqualified because she uses a water filter.

Walters said that she had been instructed to remove the filter before taking any water samples and always did so.

Though it was strict in disqualifying the high samples from Walters, the DEQ did not strictly enforce other requirements related to the samples, such as that they all come from the same group of homes sampled a year earlier, or that they come from homes at high risk for lead.

"The state is the one monitoring these decisions," Walters said. "They should be doing their job accurately. Someone should be holding them accountable for not doing things the way they were supposed to."

Contact Paul Egan: 517-372-8660 or pegan@freepress.com. Follow him on Twitter @paulegan4.

Questions over emergency manager law arise in Flint water rates lawsuit (mlive.com)

http://www.mlive.com/news/flint/index.ssf/2015/12/questions_arise_regarding_publ.html

By Amanda Emery | aemery@mlive.com

on December 23, 2015 at 10:47 AM, updated December 23, 2015 at 8:51 PM

FLINT, MI — A Genesee County judge has ruled the city can continue shutting off water to Flint customers who haven't paid their bills since September.

Circuit Court Judge Archie Hayman on Tuesday, Dec. 22, said the city of Flint is mostly complying with some portions of his injunction in a lawsuit over Flint's past water rate increases but needs to complete others.

In September, the city started sending water bills reflecting the lower rates ordered by Hayman. In December, the city started sending shut-off notices to residents who hadn't paid the new lower bills.

Attorney Val Washington, who is representing Flint residents in the class-action lawsuit, which claims the city illegally raised rates, has questioned whether the city is complying with Hayman's August injunction.

Hayman ruled Tuesday there could be no shut-offs for past-due delinquencies, with the exception of those who haven't paid their bills since September.

Hayman also said, although the city has adjusted rates from Sept. 16, 2011, to July 1, 2012, those adjustments applied only to the water commodity and not the service charges for that period.

"The courts' intent was to have that 35 percent applied for both," Hayman said.

Hayman also ordered the city and Washington to meet to negotiate on how to pay back $15.7 million that was "wrongfully taken" from water and sewer funds. He said the City Council should meet to discuss the transfer of the funds.

"As it stands right now, I want my injunction complied with," Hayman said in court.

The water rate saga will continue in court over questions on whether the water rates set by an emergency manager are valid after an earlier version of Michigan's emergency manager law was repealed.

"It raises the issue about Public Act 4," Washington said. "Any actions taken ... they went away when the law went away."

Washington argues that the actions under the law are not valid, so a rate set July 1, 2012, wouldn't survive the repeal of the act.

City Administrator Natasha Henderson said the city is pleased with the decision.

"The city is pleased that Judge Hayman reconsidered the determination made in his preliminary injunction and looks forward to the financial stability his revised ruling will provide the city," Henderson said in a statement. "The city appreciates the work of City Attorney Anthony Chubb and his team."

Flint City Councilman Eric Mays said he looks forward to a special meeting or executive session to discuss the transfer of the water funds.

The judge also ordered the city to set up a separate account for water funds so it can be seen what the funds are used for. Hayman said the funds could not be used to pay general obligations of the city and are to be used for operations, maintenance and administration.

The next court date to discuss the impact of the repeal of the emergency manager law and how that will affect the improper rate increase might be in the coming month, Washington said.

Flint judge sides with city over water shutoffs (WLNS 6)

http://wlns.com/2015/12/23/flint-judge-sides-with-city-over-water-shutoffs/

WLNS Web Staff Published: December 23, 2015, 9:32 pm

FLINT, MI (WLNS) – A Flint judge has sided with the city in a legal battle over disconnecting water for those who haven't paid their bills.

Back in August Genesee County circuit court judge ordered flint to cease water shut-offs until it rolled back a 2011 rate hike.

The city sent out bills reflecting the court-ordered lower rate in back in September and also gave shut-off notices for those who didn't pay their new, lower bills.

But now some legal experts say the city has not compiled with a judge's original orders.

This ruling comes as the city continues to re-solve a water crisis after it was discovered there was un-safe amounts of lead in the drinking water.

Congressman calls for state water crisis health fund on Rachel Maddow show (mlive.com)

http://www.mlive.com/news/flint/index.ssf/2015/12/congressman_continues_call_for.html

By Gary Ridley | gridley@mlive.com

on December 24, 2015 at 9:33 AM, updated December 24, 2015 at 9:40 AM

FLINT, MI – U.S. Rep. Dan Kildee took to the Rachel Maddow show to continue his call for the state to create a health fund to help Flint's youngest residents potentially affected by the city's water crisis.

Kildee, D-Flint Township, appeared on the MSNBC pundit's program Wednesday, Dec. 23, and called on Gov. Rick Snyder to provide funding for a program that would provide continued health assistance for Flint children who have been diagnosed with elevated blood lead levels.

"We need more than an apology and an acknowledgement that they failed," Kildee said of state leaders. "We need them to make it right."

It was the fourth time in the past two weeks that Flint's water crisis has been prominently featured on the Rachel Maddow show.

Kildee said he hasn't yet put a price tag on the health fund program, but he said it should provide health, nutritional and educational support for children under 5 years old. He said he has plans to continue meeting with health officials to develop the specifics of the fund.

Flint changed its water source from Lake Huron water purchased from the Detroit water system to the Flint River in April 2014, a decision made while the city was being run by a state-appointed emergency manager.

We need more than an apology and an acknowledgement that they failed.

State regulators never required that the river water be treated to make it less corrosive, causing lead from plumbing and pipes to leach into the water supply. Even though the city reconnected to the Detroit water system in October, local officials have advised Flint residents not to drink city water unless they are using lead-clearing filters.

Earlier this month, Hanna-Attisha told The Flint Journal-MLive that she was continuing to analyze data comparing the blood lead levels of Flint children younger than 5 from January to September 2013 and from January to September 2015, nine months in which the city was using the Flint River as its water source.

"The percentage of children with elevated blood levels significantly increased after the water source changed," Hurley said in a new release. "Results showed the incidence of elevated blood lead levels increased from 2.4 to 4.9 percent ... and city areas with the highest water lead levels experienced a 6.6 percent increase."

The Centers for Disease Control and Prevention said children younger than 6 are among those at high risk for the effects of lead poisoning. U.S. Census Bureau estimates show there are 6,000 to 8,000 children younger than 5 in the city.

Snyder's office said they are continuing to work with local leaders to provide a solution to the city's water problem.

"Gov. Snyder is committed to working with Mayor Weaver and city leaders to do what is necessary to protect the health of Flint residents," said Snyder's Press Secretary Dave Murray. "We're working to build upon the work that is already in progress as part of the Governor's action plan and the $10 million provided for the reconnection to Detroit water, filters for residents and efforts to improve the city's water infrastructure."

- Maddow, reported Tuesday, Dec. 22, on documents released this week by Virginia Tech university professor Marc Edwards, which show state health officials didn't immediately inform the public after finding evidence of rising blood lead levels in Flint two months before the problem was exposed by a Flint pediatrician.
- On Friday, Dec. 18, Maddow interviewed Hanna-Attisha, director of Hurley Medical Center's Pediatric Residency Program and the doctor whose study on rising blood lead levels in Flint children helped force the city and state to stop use of the Flint River for drinking water.
- On Dec. 15, Flint Mayor Karen Weaver appeared on the Maddow show to discuss her push to have Flint declared a federal disaster area because of damage river water has caused to Flint children and to the city's infrastructure.

Maddow's entire interview can be viewed here.

Suffer, Flint's Children (Dissident Voice)

http://dissidentvoice.org/2015/12/suffer-flints-children/

by James Hoover / December 24th, 2015

It is quite shocking that no one from the Rick Snyder administration in Michigan is on trial, impeached or in jail for charges such as felony child endangerment. Such charges involve a person engaged in conduct that places a child in imminent danger of death, bodily injury, or physical or mental impairment. It is a charge that can involve an act or even an omission.

The determination usually looks at two different aggravating factors, the first being intent. Was the conduct merely negligent or reckless, or willful or intentional? The former is a misdemeanor, the latter, a felony. The second factor is the degree of risk: the higher the risk, the higher the charge.

Such should be the consideration in the lead poisoning of children by corrosive Flint River water in Flint, Michigan. The switch to Flint River water was perpetrated by an emergency manager in Flint, who changed Flint's water source to the Flint River without treating the river water, something experience teaches us is almost always necessary. He was appointed by and reported to Michigan Governor Rick Snyder. Conditions of risk were perpetuated over some 13 months after symptoms and subsequent blood tests showed high levels of lead poisoning in Flint children.

Such deleterious results too often come with a tyranny that suspension of democracy can bring. In a number of Michigan cities, emergency managers appointed under the authority of Michigan's so-called Emergency Manager Law, replace elected representatives, making changes impacting the health and welfare of citizens. In effect, citizens of affected cities and school districts become chattels of one would-be autocrat, appointed by Governor Rick Snyder.

A temporary solution has become permanent in such principalities in an area suffering under a shift in political power that brought labor's decline and management's ascent as money took hold of government.

An area nicknamed the Rust Belt, formerly known as the industrial heartland of America, is a belt that stretches along the Southern boundaries of the Great Lakes, also covering the Midwest States, New York areas and eastern Wisconsin. It is marked by economic decline, fleeing populations, and urban decay due to numerous economic factors, including automation, globalization, the *Wall Street* recession, and technological change. But many of the factors were politically imposed by the exigencies of shifting power from middle class citizens to Wall Street and crony capitalists.

In 2008, such a shift was evident when the financial abuse of Wall Street bankers resulted in the threatened bankruptcies of giant banks. The reaction of the federal government was multi-billion dollar bailouts, this while stricken consumers were forgotten, as well as citizens of already bankrupt cities throughout the so-called Rust Belt who went even deeper into economic ruin. Such troubled citizens were met with even further cuts, a result of GOP-driven austerity measures, most involving cuts to federal support for local economic services.

The unequal treatment played out with bailouts of monolithic banks and the smack-down of citizens of cities and schools considered wasteful and reckless.

Emergency management laws have been Michigan's answer to financial decline in many cities throughout the state. Currently, Hamtramck, Detroit, Flint, Pontiac, Benton Harbor, Allen Park and the school districts of Muskegon Heights, Highland Park and Detroit are under the control of an emergency manager.

You might argue that the elected leaders of such bankrupt Michigan cities must be replaced with responsible leaders, but such leadership seems to be an excuse for imposing the conservative ideology of governors such as Snyder and a GOP legislature, an ideology which blames the economically stricken for their decline, not Wall Street malfeasance or the crony favoritism practiced by leaders indebted to corporate contributors.

In late 2012, the current Emergency Manager Law was passed by the GOP-controlled Michigan legislature and signed into law by Gov. Rick Snyder. It went into effect in early 2013, after the prior Emergency Manager Law was rejected in a Michigan voter referendum of November, 2012. The new law pointedly blocked any future voter referendums.

Generally you can decry such measures as tyrannical due to the seemingly arbitrary suspension of democracy in such principalities, but events that transpired in Flint, Michigan, one of the captive cities, this over the last two years, speaks volumes of the vicious and mindless cruelty of emergency managers and their overseers in state government, indicated by a lack of nurture or concern for the people.

In April 2014, officials in the city of Flint, namely the emergency manager who is only accountable to Governor Rick Snyder, switched Flint's water source from Detroit's water system of lake water to the Flint River to save money. Although river water is known to be more corrosive, "no water treatment was needed," the emergency manager and Snyder opined. In fact, the emergency manager sold the pipe between Flint and Detroit, severing any connection to the safe Detroit water.

Sure enough, the lead soldering in the Flint pipes began leaching, mixing lead with the corrosive river water. It was immediately determined by the General Motors plant in Flint that the water from the Flint River was so caustic that it was corroding car parts, so they adopted an alternative source. The people of Flint did not have the same resources to switch.

Skin lesions, hair loss, learning disabilities and behavioral problems became more common.

Blood tests began revealing the presence of lead in the blood of children. During the months of July, August and September, 2014, the Michigan Department of Health and Human Services (DHHS) internally revealed that lead poisoning rates "were higher than usual for children under age 16 living in the City of Flint. When the Michigan department of Environmental Quality (MDEQ) officials, who reported directly to Governor Rick Snyder, repeatedly and falsely stated that no spike in blood lead levels (BLL) of children had occurred, DHHS officials did not object.

For a whole year DHHS officials stonewalled efforts by outside researchers, and even released incomplete data to cover up the evidence. Only when the incidence of childhood lead poisoning skyrocketed above 10% in the two Flint zip codes with the highest water lead risk did they reveal the truth, and it wasn't until October of 2015 that the county declared a public health emergency.

The Rick Snyder administration was aware that the lead level in the drinking water went from 6 parts per million to 11 parts per million in just 6 months in 2014 and 2015. Even so in July of 2015 Brad Wurfel of the Michigan Department of Environmental Quality, reporting directly to Rick Snyder, announced, "relax … There is no broad problem right now that we've seen with lead in the drinking water in Flint."

Governor Rick Snyder allowed Flint to drink toxic water despite repeated warnings. He knew that there were elevated lead levels in the blood and had to know that brain damage in children is life-long and irreversible, most especially for children under age six. Flint pediatrician, Dr. Mona Hanna-Attista did painstaking research showing unsafe lead levels in Flint's children. Her September of 2015 report even then was denounced by Michigan state agencies.

"Lead is probably one of the most damning things you can do to a population," Hanna-Attisha said.

In contrast to the Snyder administration's insulting denunciations and bluster, her words were measured in sadness for the many stricken children, "We wouldn't expect this to happen in 2015, especially when we could have easily used corrosion control to prevent it."

Meanwhile Rick Snyder distanced himself from the suffering by appointing a communication professional to handle the Flint lead poisoning debacle, while his Board of State Canvassers voted to reject a recall petition filed by a Detroit pastor.

To: Hedman, Susan[hedman.susan@epa.gov]; Kaplan, Robert[kaplan.robert@epa.gov]; Hyde, Tinka[hyde.tinka@epa.gov]
Cc: Kelley, Jeff[kelley.jeff@epa.gov]; Rowan, Anne[rowan.anne@epa.gov]; Cassell, Peter[cassell.peter@epa.gov]; Beckmann, Ronna Erin[beckmann.ronna@epa.gov]; Harrison, Melissa[Harrison.Melissa@epa.gov]; Abrams, Dan[Abrams.Dan@epa.gov]; Poy, Thomas[poy.thomas@epa.gov]; Peterson, John[peterson.john@epa.gov]; Arcaute, Francisco[Arcaute.Francisco@epa.gov]; Cannon, Phillippa[Cannon.Phillippa@epa.gov]; Deamer, Eileen[deamer.eileen@epa.gov]; Fortin, Denise[Fortin.Denise@epa.gov]; Nowotarski, Allison[nowotarski.allison@epa.gov]; Reshkin, Karen[Reshkin.Karen@epa.gov]; Loop, Travis[Loop.Travis@epa.gov]; Purchia, Liz[Purchia.Liz@epa.gov]; Henry, Timothy[henry.timothy@epa.gov]; Grantham, Nancy[Grantham.Nancy@epa.gov]; Lee, Monica[Lee.Monica@epa.gov]; Bassler, Rachel[Bassler.Rachel@epa.gov]; Davis, CatherineM[Davis.CatherineM@epa.gov]
From: Singer, Joshua
Sent: Thur 12/24/2015 5:31:52 PM
Subject: RE: Flint Drinking Water News Clips 12/24/15

Here is one more clip.

Editorial: Hasten help to Flint (Detroit News)

http://www.detroitnews.com/story/opinion/editorials/2015/12/22/editorial-hasten-help-flint/77778316/

The Detroit News 11:30 p.m. EST December 22, 2015

Flint’s financial crisis became a health crisis with the decision to unhook from the Detroit water system and start delivering water to residents itself. Since the city was under state emergency management at the time, much of the responsibility for fixing the problem rests with Lansing.

One way it could help the city find the resources to address its lead-tainted water pipes is to help seek relief from debts owed to the federal government.

When Flint switched away from using Detroit water, it began drawing water from the Flint River. To put it mildly, it was a mistake that residents are paying in several ways.

Random testing found high levels of lead in children with the source traced to the Flint water system. An estimated 30,000 of the city’s 102,000 residents were using and drinking contaminated water. That includes pregnant women, patients at hospitals, schoolchildren and seniors.

Switching back to the Detroit water system was just the first step. Now, the city has to work out the financial details to improve the safety of the water and replace thousands of lead-contaminated pipes that connect the main water lines to individual homes.

It also has to deal with the lingering effects of lead on the health of its children.

Some assistance is on the way in a two-pronged effort to forgive about $22 million in federal loans Flint has had to take out, and also secure future loans that can be forgiven.

State officials, who administer the federal funds, say this is being done but have not given a timetable.

Rep. Dan Kildee, D-Flint, is working at the federal level to get loan forgiveness. He notes that this in itself will help reduce water rates for residents because of what they were paying to eliminate the debt. Water rates increased 35 percent because of the switch.

The state is expected to provide some help. Gov. Rick Snyder wants to cover half — $6 million — of the cost for switching back to Detroit water. Flint will pay $2 million, and $4 million will come from the Charles Stewart Mott Foundation.

But the debt relief is also a critical financial factor and one that should be hastened.

Kildee stresses that local officials and citizens had no say in the water system switch because it was authorized by an emergency manager, who was making all of the economic decisions.

“It was just a bean counter decision, but he should have started with the question is the water safe? Safety should have been paramount,” Kildee says.

“None of the residents had anything to do with this, but they’re paying the highest price.”

Recovering from the decision will be expensive and warrants considerable help from the state.

From: Singer, Joshua
Sent: Thursday, December 24, 2015 10:52 AM
To: Hedman, Susan <hedman.susan@epa.gov>; Kaplan, Robert <kaplan.robert@epa.gov>; Hyde, Tinka <hyde.tinka@epa.gov>
Cc: Kelley, Jeff <kelley.jeff@epa.gov>; Rowan, Anne <rowan.anne@epa.gov>; Cassell, Peter <cassell.peter@epa.gov>; Beckmann, Ronna Erin <beckmann.ronna@epa.gov>; Harrison, Melissa <Harrison.Melissa@epa.gov>; Abrams, Dan <Abrams.Dan@epa.gov>; Poy, Thomas <poy.thomas@epa.gov>; Peterson, John <peterson.john@epa.gov>; Arcaute, Francisco <Arcaute.Francisco@epa.gov>; Cannon, Phillippa <Cannon.Phillippa@epa.gov>; Deamer,

Eileen <deamer.eileen@epa.gov>; Fortin, Denise <Fortin.Denise@epa.gov>; Nowotarski, Allison <nowotarski.allison@epa.gov>; Reshkin, Karen <Reshkin.Karen@epa.gov>; Loop, Travis <Loop.Travis@epa.gov>; Purchia, Liz <Purchia.Liz@epa.gov>; Henry, Timothy <henry.timothy@epa.gov>; Grantham, Nancy <Grantham.Nancy@epa.gov>; Lee, Monica <Lee.Monica@epa.gov>; Bassler, Rachel <Bassler.Rachel@epa.gov>; Davis, CatherineM <Davis.CatherineM@epa.gov>
Subject: Flint Drinking Water News Clips 12/24/15

FLINT DRINKING WATER CLIPS

dECEMBER 24, 2015

State's handling of Flint water samples delayed action (Detroit Free Press)

Questions over emergency manager law arise in Flint water rates lawsuit (mlive.com)

Flint judge sides with city over water shutoffs (WLNS 6)

Congressman calls for state water crisis health fund on Rachel Maddow show (mlive.com)

Suffer, Flint's Children (Dissident Voice)

State's handling of Flint water samples delayed action (Detroit Free Press)

http://www.freep.com/story/news/politics/2015/12/23/states-handling-flint-water-samples-delayed-action/77367872/

Paul Egan, Detroit Free Press 10:09 a.m. EST December 24, 2015

LANSING — Lead levels in Flint's drinking water would have spurred action months sooner if the results of city testing that wrapped up in June had not been revised by the Michigan Department of Environmental Quality to wrongly indicate the water was safe to drink, e-mails show.

The records — obtained by the Michigan ACLU and by Marc Edwards, a Virginia Tech researcher who helped raise concerns about Flint's water — show how state officials first appear to have encouraged the City of Flint to find water samples with low lead levels and later told Flint officials to disqualify two samples with high readings. The move changed the overall lead level results to acceptable from unacceptable.

The e-mails also show that DEQ district coordinator Stephen Busch told the U.S. Environmental Protection Agency on Feb. 27 that Flint had "an optimized corrosion control program" to prevent lead from leaching into the drinking water from pipes, connections and fixtures. In fact, the city — disastrously — had no corrosion control program.

Why those DEQ officials took the actions they did is a question at the center of a tragedy that has left an unknown number of children and other Flint residents poisoned by lead, and has led to a federal lawsuit and calls for a U.S. Justice Department investigation. The questions surrounding the testing are in addition to the broader question of why Flint, which was under the control of a state-appointed emergency manager at the time, switched its drinking water source, starting in April 2014, from Lake Huron water supplied by Detroit to the much more polluted and corrosive water from the Flint River.

Brad Wurfel, a spokesman for DEQ Director Dan Wyant, declined to say Tuesday why Busch gave inaccurate information to the EPA, why another DEQ official told Flint officials he was hoping they would send him water samples showing low lead levels, or why the DEQ was strict in disqualifying certain water samples with high lead readings but not strict in disqualifying other samples showing low lead levels that did not appear to meet the sampling criteria.

"Most of these questions regard issues presently before the governor's independent after-action review panel," Wurfel told the Free Press in an e-mail. "We don't want to get in front of that review."

On June 25, Adam Rosenthal, of the DEQ's Office of Drinking Water and Municipal Assistance, sent an e-mail about the water samples, required under the federal Lead and Copper Rule, to Michael Glasgow, a utilities administrator with the City of Flint.

The Michigan Department of Environmental Quality revised downward the results of water samples in Flint. (Photo: Detroit Free Press file photo)

"Just wanted to remind you/confirm that Flint is on track for a few items," Rosenthal wrote in the e-mail, which he copied to two other DEQ officials.

"We hope you have 61 more lead/copper samples collected and sent to the lab by 6/30/15, and that they are will be (sic) below the AL (action level) for lead," the e-mail said. "As of now with 39 results, Flint's 90th percentile is over the AL for lead."

If 100 lead-in-water samples were listed in ascending order, the 90th percentile would be the

90th sample, meaning 10 samples would have higher readings. To stay below the "action level," which triggers requirements for public notification and steps to reduce the amount of lead in the water, the 90th percentile for Flint's drinking water samples had to be at or below 15 parts per billion. To put it another way, Flint's water would reach an action level if more than 10% of the samples exceed 15 parts per billion.

Melissa Mays, a Flint resident who drank the contaminated water along with her three boys, said there is only one way to read the Rosenthal e-mail.

"The MDEQ informed the City of Flint that they were in danger of going in violation, and they asked for low samples," Mays told the Free Press.

Wurfel wouldn't comment when asked if that's how the e-mail should be interpreted. Rosenthal did not respond to an e-mail seeking comment. Busch, who was copied on the e-mail Rosenthal sent to Flint, sent an automated e-mail reply that said he is out of the office until Jan. 4.

Had Flint's water sampling come in above the action level, it would have triggered action in July. Instead, it was not until October, after blood test results showed elevated lead levels in Flint children, that the DEQ admitted making a mistake about failing to require the addition of needed corrosion control chemicals to the Flint River water. The state also provided funds to help Flint reconnect to Lake Huron water supplied by Detroit.

The EPA requires that water sampling be done at "high-risk" locations whenever possible. To comply with that, the American Water Works Association says cities such as Flint should collect 50% of samples from homes with lead service lines. For the samples taken in 2015, the EPA rules also required that Flint sample the same 100 homes it sampled the previous year, between July and December of 2014.

But the City of Flint didn't get 100 samples in 2015. After receiving Rosenthal's e-mail expressing a hope for samples below the action level, the city in the next five days collected 30 additional samples, all of which were below the action level.

The DEQ decided that fewer than 100 samples would suffice because Flint's population had dropped below 100,000.

But Edwards said the smaller number of samples the DEQ allowed still should have come from the group of 100 homes tested a year earlier and should have all come from homes at high risk for lead.

The Michigan ACLU, and later the Flint Journal has reported that seven of the additional samples the city collected, or nearly 25% of them, came from a single stretch of Flushing Road in Flint, where the city had replaced a lengthy session of water main in 2007. Not surprisingly, all of those samples measured very low for lead.

In all, the newspaper reported, only 13 of the homes sampled were from the same list of 100 homes tested in 2014. All the homes that were sampled for a second time in 2015 had tested low for lead in 2014. None of the homes that in 2014 had lead levels above the 15 parts per billion action level were sampled a second time.

Edwards told the Free Press the samples were "cherry-picked," and that's a violation of federal law.

Wurfel would not comment when asked if that was the case.

Even then, the 71 samples Flint relied on would have put the city's water above the action level under the original report Flint prepared, dated July 28. Only after two high lead samples were disqualified at the direction of the DEQ, bringing the total number of samples used down to 69, was the water found to be at 11 parts per billion for lead, below the action level.

The revised report, dated Aug. 20, included the following comment from Flint utilities administrator Michael Glasgow: "Revised report after conference call with DEQ staff. Two samples were removed from list for not meeting sample criteria ..."

One of the disqualified samples, which showed lead at more than 100 parts per billion, came from the home of LeeAnne Walters. Walters had subsequently been retested with results coming back even worse and was visited by an EPA official in April. That EPA official, Miguel Del Toral, found that Walters' indoor plumbing was plastic and could not be the source of the high lead readings, as the DEQ had suggested to him.

The DEQ disqualified another high lead-level sample because it did not come from a single-family residence.

On Aug. 4, Walters, other community activists, and concerned pastors met at the Capitol with top aides to the governor and officials from the DEQ. Walters asked why her sample wasn't used and didn't get an explanation. She and others at the meeting say Harvey Hollins, an aide to Gov. Rick Snyder who was last week named the state's point man on the Flint water issue, instructed DEQ officials to get back to her on why her sample wasn't used.

Walters says she never received that explanation, but the DEQ produced a letter sent to Walters by e-mail in response to a FOIA request from Edwards.

In the Aug. 25 e-mail, Liane Shekter Smith, who at the time was the chief of the DEQ's Office of Drinking Water and Municipal Assistance but was reassigned in October after the DEQ acknowledged oversight mistakes in connection with Flint's drinking water, tells Walters her results were disqualified because she uses a water filter.

Walters said that she had been instructed to remove the filter before taking any water samples and always did so.

Though it was strict in disqualifying the high samples from Walters, the DEQ did not strictly enforce other requirements related to the samples, such as that they all come from the same group of homes sampled a year earlier, or that they come from homes at high risk for lead.

"The state is the one monitoring these decisions," Walters said. "They should be doing their job accurately. Someone should be holding them accountable for not doing things the way they were supposed to."

Contact Paul Egan: 517-372-8660 or pegan@freepress.com. Follow him on Twitter @paulegan4.

Questions over emergency manager law arise in Flint water rates lawsuit (mlive.com)

http://www.mlive.com/news/flint/index.ssf/2015/12/questions_arise_regarding_publ.html

By Amanda Emery | aemery@mlive.com

on December 23, 2015 at 10:47 AM, updated December 23, 2015 at 8:51 PM

FLINT, MI — A Genesee County judge has ruled the city can continue shutting off water to Flint customers who haven't paid their bills since September.

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In September, the city started sending water bills reflecting the lower rates ordered by Hayman. In December, the city started sending shut-off notices to residents who hadn't paid the new lower bills.

Attorney Val Washington, who is representing Flint residents in the class-action lawsuit, which claims the city illegally raised rates, has questioned whether the city is complying with Hayman's August injunction.

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Hayman also said, although the city has adjusted rates from Sept. 16, 2011, to July 1, 2012, those adjustments applied only to the water commodity and not the service charges for that period.

"The courts' intent was to have that 35 percent applied for both," Hayman said.

Hayman also ordered the city and Washington to meet to negotiate on how to pay back $15.7 million that was "wrongfully taken" from water and sewer funds. He said the City Council should meet to discuss the transfer of the funds.

"As it stands right now, I want my injunction complied with," Hayman said in court.

The water rate saga will continue in court over questions on whether the water rates set by an emergency manager are valid after an earlier version of Michigan's emergency manager law was repealed.

"It raises the issue about Public Act 4," Washington said. "Any actions taken ... they went away when the law went away."

Washington argues that the actions under the law are not valid, so a rate set July 1, 2012, wouldn't survive the repeal of the act.

City Administrator Natasha Henderson said the city is pleased with the decision.

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WLNS Web Staff Published: December 23, 2015, 9:32 pm

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Congressman calls for state water crisis health fund on Rachel Maddow show (mlive.com)

http://www.mlive.com/news/flint/index.ssf/2015/12/congressman_continues_call_for.html

By Gary Ridley | gridley@mlive.com

on December 24, 2015 at 9:33 AM, updated December 24, 2015 at 9:40 AM

FLINT, MI – U.S. Rep. Dan Kildee took to the Rachel Maddow show to continue his call for the state to create a health fund to help Flint's youngest residents potentially affected by the city's water crisis.

Kildee, D-Flint Township, appeared on the MSNBC pundit's program Wednesday, Dec. 23, and called on Gov. Rick Snyder to provide funding for a program that would provide continued health assistance for Flint children who have been diagnosed with elevated blood lead levels.

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It was the fourth time in the past two weeks that Flint's water crisis has been prominently featured on the Rachel Maddow show.

Kildee said he hasn't yet put a price tag on the health fund program, but he said it should provide health, nutritional and educational support for children under 5 years old. He said he has plans to continue meeting with health officials to develop the specifics of the fund.

Flint changed its water source from Lake Huron water purchased from the Detroit water system to the Flint River in April 2014, a decision made while the city was being run by a state-appointed emergency manager.

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State regulators never required that the river water be treated to make it less corrosive, causing lead from plumbing and pipes to leach into the water supply. Even though the city reconnected to the Detroit water system in October, local officials have advised Flint residents not to drink city water unless they are using lead-clearing filters.

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"The percentage of children with elevated blood levels significantly increased after the water source changed," Hurley said in a new release. "Results showed the incidence of elevated blood lead levels increased from 2.4 to 4.9 percent ... and city areas with the highest water lead levels experienced a 6.6 percent increase."

The Centers for Disease Control and Prevention said children younger than 6 are among those at high risk for the effects of lead poisoning. U.S. Census Bureau estimates show there are 6,000 to 8,000 children younger than 5 in the city.

Snyder's office said they are continuing to work with local leaders to provide a solution to the city's water problem.

"Gov. Snyder is committed to working with Mayor Weaver and city leaders to do what is necessary to protect the health of Flint residents," said Snyder's Press Secretary Dave Murray. "We're working to build upon the work that is already in progress as part of the Governor's action plan and the $10 million provided for the reconnection to Detroit water, filters for residents and efforts to improve the city's water infrastructure."

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Suffer, Flint's Children (Dissident Voice)

http://dissidentvoice.org/2015/12/suffer-flints-children/

by James Hoover / December 24th, 2015

It is quite shocking that no one from the Rick Snyder administration in Michigan is on trial, impeached or in jail for charges such as felony child endangerment. Such charges involve a person engaged in conduct that places a child in imminent danger of death, bodily injury, or physical or mental impairment. It is a charge that can involve an act or even an omission.

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Such should be the consideration in the lead poisoning of children by corrosive Flint River water in Flint, Michigan. The switch to Flint River water was perpetrated by an emergency manager in Flint, who changed Flint's water source to the Flint River without treating the river water, something experience teaches us is almost always necessary. He was appointed by and reported to Michigan Governor Rick Snyder. Conditions of risk were perpetuated over some 13 months after symptoms and subsequent blood tests showed high levels of lead poisoning in Flint children.

Such deleterious results too often come with a tyranny that suspension of democracy can bring. In a number of Michigan cities, emergency managers appointed under the authority of Michigan's so-called Emergency Manager Law, replace elected representatives, making changes impacting the health and welfare of citizens. In effect, citizens of affected cities and school districts become chattels of one would-be autocrat, appointed by Governor Rick Snyder.

A temporary solution has become permanent in such principalities in an area suffering under a shift in political power that brought labor's decline and management's ascent as money took hold of government.

An area nicknamed the Rust Belt, formerly known as the industrial heartland of America, is a belt that stretches along the Southern boundaries of the Great Lakes, also covering the Midwest States, New York areas and eastern Wisconsin. It is marked by economic decline, fleeing populations, and urban decay due to numerous economic factors, including automation, globalization, the *Wall Street* recession, and technological change. But many of the factors were politically imposed by the exigencies of shifting power from middle class citizens to Wall Street and crony capitalists.

In 2008, such a shift was evident when the financial abuse of Wall Street bankers resulted in the threatened bankruptcies of giant banks. The reaction of the federal government was multi-billion dollar bailouts, this while stricken consumers were forgotten, as well as citizens of already bankrupt cities throughout the so-called Rust Belt who went even deeper into economic ruin. Such troubled citizens were met with even further cuts, a result of GOP-driven austerity measures, most involving cuts to federal support for local economic services.

The unequal treatment played out with bailouts of monolithic banks and the smack-down of citizens of cities and schools considered wasteful and reckless.

Emergency management laws have been Michigan's answer to financial decline in many cities throughout the state. Currently, Hamtramck, Detroit, Flint, Pontiac, Benton Harbor, Allen Park and the school districts of Muskegon Heights, Highland Park and Detroit are under the control of an emergency manager.

You might argue that the elected leaders of such bankrupt Michigan cities must be replaced with responsible leaders, but such leadership seems to be an excuse for imposing the conservative ideology of governors such as Snyder and a GOP legislature, an ideology which blames the economically stricken for their decline, not Wall Street malfeasance or the crony favoritism practiced by leaders indebted to corporate contributors.

In late 2012, the current Emergency Manager Law was passed by the GOP-controlled Michigan legislature and signed into law by Gov. Rick Snyder. It went into effect in early 2013, after the prior Emergency Manager Law was rejected in a Michigan voter referendum of November, 2012. The new law pointedly blocked any future voter referendums.

Generally you can decry such measures as tyrannical due to the seemingly arbitrary suspension of democracy in such principalities, but events that transpired in Flint, Michigan, one of the captive cities, this over the last two years, speaks volumes of the vicious and mindless cruelty of emergency managers and their overseers in state government, indicated by a lack of nurture or concern for the people.

In April 2014, officials in the city of Flint, namely the emergency manager who is only accountable to Governor Rick Snyder, switched Flint's water source from Detroit's water system of lake water to the Flint River to save money. Although river water is known to be more corrosive, "no water treatment was needed," the emergency manager and Snyder opined. In fact, the emergency manager sold the pipe between Flint and Detroit, severing any connection to the safe Detroit water.

Sure enough, the lead soldering in the Flint pipes began leaching, mixing lead with the corrosive river water. It was immediately determined by the General Motors plant in Flint that the water from the Flint River was so caustic that it was corroding car parts, so they adopted an alternative source. The people of Flint did not have the same resources to switch.

Skin lesions, hair loss, learning disabilities and behavioral problems became more common. Blood tests began revealing the presence of lead in the blood of children. During the months of July, August and September, 2014, the Michigan Department of Health and Human Services (DHHS) internally revealed that lead poisoning rates "were higher than usual for children under age 16 living in the City of Flint. When the Michigan department of Environmental Quality

(MDEQ) officials, who reported directly to Governor Rick Snyder, repeatedly and falsely stated that no spike in blood lead levels (BLL) of children had occurred, DHHS officials did not object.

For a whole year DHHS officials stonewalled efforts by outside researchers, and even released incomplete data to cover up the evidence. Only when the incidence of childhood lead poisoning skyrocketed above 10% in the two Flint zip codes with the highest water lead risk did they reveal the truth, and it wasn't until October of 2015 that the county declared a public health emergency.

The Rick Snyder administration was aware that the lead level in the drinking water went from 6 parts per million to 11 parts per million in just 6 months in 2014 and 2015. Even so in July of 2015 Brad Wurfel of the Michigan Department of Environmental Quality, reporting directly to Rick Snyder, announced, "relax … There is no broad problem right now that we've seen with lead in the drinking water in Flint."

Governor Rick Snyder allowed Flint to drink toxic water despite repeated warnings. He knew that there were elevated lead levels in the blood and had to know that brain damage in children is life-long and irreversible, most especially for children under age six. Flint pediatrician, Dr. Mona Hanna-Attista did painstaking research showing unsafe lead levels in Flint's children. Her September of 2015 report even then was denounced by Michigan state agencies.

"Lead is probably one of the most damning things you can do to a population," Hanna-Attisha said.

In contrast to the Snyder administration's insulting denunciations and bluster, her words were measured in sadness for the many stricken children, "We wouldn't expect this to happen in 2015, especially when we could have easily used corrosion control to prevent it."

Meanwhile Rick Snyder distanced himself from the suffering by appointing a communication professional to handle the Flint lead poisoning debacle, while his Board of State Canvassers voted to reject a recall petition filed by a Detroit pastor.

To: Kaplan, Robert[kaplan.robert@epa.gov]; Nelson, Leverett[nelson.leverett@epa.gov]; Hyde, Tinka[hyde.tinka@epa.gov]; Deamer, Eileen[deamer.eileen@epa.gov]
From: Hedman, Susan
Sent: Thur 12/24/2015 8:54:52 PM
Subject: Fwd: Flint Drinking Water News Clips 12/24/15

Be sure to read the first article.

Sent from my iPhone

Begin forwarded message:

From: "Singer, Joshua" <Singer.Joshua@epa.gov>
Date: December 24, 2015 at 10:51:59 AM CST
To: "Hedman, Susan" <hedman.susan@epa.gov>, "Kaplan, Robert" <kaplan.robert@epa.gov>, "Hyde, Tinka" <hyde.tinka@epa.gov>
Cc: "Kelley, Jeff" <kelley.jeff@epa.gov>, "Rowan, Anne" <rowan.anne@epa.gov>, "Cassell, Peter" <cassell.peter@epa.gov>, "Beckmann, Ronna Erin" <beckmann.ronna@epa.gov>, "Harrison, Melissa" <Harrison.Melissa@epa.gov>, "Abrams, Dan" <Abrams.Dan@epa.gov>, "Poy, Thomas" <poy.thomas@epa.gov>, "Peterson, John" <peterson.john@epa.gov>, "Arcaute, Francisco" <Arcaute.Francisco@epa.gov>, "Cannon, Phillippa" <Cannon.Phillippa@epa.gov>, "Deamer, Eileen" <deamer.eileen@epa.gov>, "Fortin, Denise" <Fortin.Denise@epa.gov>, "Nowotarski, Allison" <nowotarski.allison@epa.gov>, "Reshkin, Karen" <Reshkin.Karen@epa.gov>, "Loop, Travis" <Loop.Travis@epa.gov>, "Purchia, Liz" <Purchia.Liz@epa.gov>, "Henry, Timothy" <henry.timothy@epa.gov>, "Grantham, Nancy" <Grantham.Nancy@epa.gov>, "Lee, Monica" <Lee.Monica@epa.gov>, "Bassler, Rachel" <Bassler.Rachel@epa.gov>, "Davis, CatherineM" <Davis.CatherineM@epa.gov>
Subject: Flint Drinking Water News Clips 12/24/15

FLINT DRINKING WATER CLIPS

dECEMBER 24, 2015

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http://www.freep.com/story/news/politics/2015/12/23/states-handling-flint-water-samples-delayed-action/77367872/

Paul Egan, Detroit Free Press 10:09 a.m. EST December 24, 2015

LANSING — Lead levels in Flint's drinking water would have spurred action months sooner if the results of city testing that wrapped up in June had not been revised by the Michigan Department of Environmental Quality to wrongly indicate the water was safe to drink, e-mails show.

The records — obtained by the Michigan ACLU and by Marc Edwards, a Virginia Tech researcher who helped raise concerns about Flint's water — show how state officials first appear to have encouraged the City of Flint to find water samples with low lead levels and later told Flint officials to disqualify two samples with high readings. The move changed the overall lead level results to acceptable from unacceptable.

The e-mails also show that DEQ district coordinator Stephen Busch told the U.S. Environmental Protection Agency on Feb. 27 that Flint had "an optimized corrosion control program" to prevent lead from leaching into the drinking water from pipes, connections and fixtures. In fact, the city — disastrously — had no corrosion control program.

Why those DEQ officials took the actions they did is a question at the center of a tragedy that has left an unknown number of children and other Flint residents poisoned by lead, and has led to a federal lawsuit and calls for a U.S. Justice Department investigation. The questions surrounding the testing are in addition to the broader question of why Flint, which was under the control of a state-appointed emergency manager at the time, switched its drinking water source, starting in April 2014, from Lake Huron water supplied by Detroit to the much more polluted and corrosive water from the Flint River.

Brad Wurfel, a spokesman for DEQ Director Dan Wyant, declined to say Tuesday why Busch gave inaccurate information to the EPA, why another DEQ official told Flint officials he was hoping they would send him water samples showing low lead levels, or why the DEQ was strict in disqualifying certain water samples with high lead readings but not strict in disqualifying other samples showing low lead levels that did not appear to meet the sampling criteria.

"Most of these questions regard issues presently before the governor's independent after-action review panel," Wurfel told the Free Press in an e-mail. "We don't want to get in front of that review."

On June 25, Adam Rosenthal, of the DEQ's Office of Drinking Water and Municipal Assistance, sent an e-mail about the water samples, required under the federal Lead and Copper Rule, to Michael Glasgow, a utilities administrator with the City of Flint.

The Michigan Department of Environmental Quality revised downward the results of water samples in Flint. (Photo: Detroit Free Press file photo)

"Just wanted to remind you/confirm that Flint is on track for a few items," Rosenthal wrote in the e-mail, which he copied to two other DEQ officials.

"We hope you have 61 more lead/copper samples collected and sent to the lab by 6/30/15, and that they are will be (sic) below the AL (action level) for lead," the e-mail said. "As of now with 39 results, Flint's 90th percentile is over the AL for lead."

If 100 lead-in-water samples were listed in ascending order, the 90th percentile would be the 90th sample, meaning 10 samples would have higher readings. To stay below the "action level," which triggers requirements for public notification and steps to reduce the amount of lead in the water, the 90th percentile for Flint's drinking water samples had to be at or below 15 parts per billion. To put it another way, Flint's water would reach an action level if more than 10% of the samples exceed 15 parts per billion.

Melissa Mays, a Flint resident who drank the contaminated water along with her three boys, said there is only one way to read the Rosenthal e-mail.

"The MDEQ informed the City of Flint that they were in danger of going in violation, and they asked for low samples," Mays told the Free Press.

Wurfel wouldn't comment when asked if that's how the e-mail should be interpreted. Rosenthal did not respond to an e-mail seeking comment. Busch, who was copied on the e-mail Rosenthal sent to Flint, sent an automated e-mail reply that said he is out of the office until Jan. 4.

Had Flint's water sampling come in above the action level, it would have triggered action in July. Instead, it was not until October, after blood test results showed elevated lead levels in Flint children, that the DEQ admitted making a mistake about failing to require the addition of needed corrosion control chemicals to the Flint River water. The state also provided funds to help Flint reconnect to Lake Huron water supplied by Detroit.

The EPA requires that water sampling be done at "high-risk" locations whenever possible. To comply with that, the American Water Works Association says cities such as Flint should collect 50% of samples from homes with lead service lines. For the samples taken in 2015, the EPA rules also required that Flint sample the same 100 homes it sampled the previous year, between July and December of 2014.

But the City of Flint didn't get 100 samples in 2015. After receiving Rosenthal's e-mail expressing a hope for samples below the action level, the city in the next five days collected 30 additional samples, all of which were below the action level.

The DEQ decided that fewer than 100 samples would suffice because Flint's population had dropped below 100,000.

But Edwards said the smaller number of samples the DEQ allowed still should have come from the group of 100 homes tested a year earlier and should have all come from homes at high risk for lead.

The Michigan ACLU, and later the Flint Journal has reported that seven of the additional samples the city collected, or nearly 25% of them, came from a single stretch of Flushing Road in Flint, where the city had replaced a lengthy session of water main in 2007. Not surprisingly, all of those samples measured very low for lead.

In all, the newspaper reported, only 13 of the homes sampled were from the same list of 100 homes tested in 2014. All the homes that were sampled for a second time in 2015 had tested low for lead in 2014. None of the homes that in 2014 had lead levels above the 15 parts per billion action level were sampled a second time.

Edwards told the Free Press the samples were "cherry-picked," and that's a violation of federal law.

Wurfel would not comment when asked if that was the case.

Even then, the 71 samples Flint relied on would have put the city's water above the action level under the original report Flint prepared, dated July 28. Only after two high lead samples were disqualified at the direction of the DEQ, bringing the total number of samples used down to 69, was the water found to be at 11 parts per billion for lead, below the action level.

The revised report, dated Aug. 20, included the following comment from Flint utilities administrator Michael Glasgow: "Revised report after conference call with DEQ staff. Two samples were removed from list for not meeting sample criteria ..."

One of the disqualified samples, which showed lead at more than 100 parts per billion, came from the home of LeeAnne Walters. Walters had subsequently been retested with results coming back even worse and was visited by an EPA official in April. That EPA official, Miguel Del Toral, found that Walters' indoor plumbing was plastic and could not be the source of the high lead readings, as the DEQ had suggested to him.

The DEQ disqualified another high lead-level sample because it did not come from a single-family residence.

On Aug. 4, Walters, other community activists, and concerned pastors met at the Capitol with top aides to the governor and officials from the DEQ. Walters asked why her sample wasn't used and didn't get an explanation. She and others at the meeting say Harvey Hollins, an aide to Gov. Rick Snyder who was last week named the state's point man on the Flint water issue, instructed DEQ officials to get back to her on why her sample wasn't used.

Walters says she never received that explanation, but the DEQ produced a letter sent to Walters by e-mail in response to a FOIA request from Edwards.

In the Aug. 25 e-mail, Liane Shekter Smith, who at the time was the chief of the DEQ's Office of Drinking Water and Municipal Assistance but was reassigned in October after the DEQ acknowledged oversight mistakes in connection with Flint's drinking water, tells Walters her results were disqualified because she uses a water filter.

Walters said that she had been instructed to remove the filter before taking any water samples and always did so.

Though it was strict in disqualifying the high samples from Walters, the DEQ did not strictly enforce other requirements related to the samples, such as that they all come from the same group of homes sampled a year earlier, or that they come from homes at high risk for lead.

"The state is the one monitoring these decisions," Walters said. "They should be doing their job accurately. Someone should be holding them accountable for not doing things the way they were supposed to."

Contact Paul Egan: 517-372-8660 or pegan@freepress.com. Follow him on Twitter @paulegan4.

Questions over emergency manager law arise in Flint water rates lawsuit (mlive.com)

http://www.mlive.com/news/flint/index.ssf/2015/12/questions_arise_regarding_publ.html

By Amanda Emery | aemery@mlive.com

on December 23, 2015 at 10:47 AM, updated December 23, 2015 at 8:51 PM

FLINT, MI — A Genesee County judge has ruled the city can continue shutting off water to Flint customers who haven't paid their bills since September.

Circuit Court Judge Archie Hayman on Tuesday, Dec. 22, said the city of Flint is mostly complying with some portions of his injunction in a lawsuit over Flint's past water rate increases but needs to complete others.

In September, the city started sending water bills reflecting the lower rates ordered by Hayman. In December, the city started sending shut-off notices to residents who hadn't paid the new lower bills.

Attorney Val Washington, who is representing Flint residents in the class-action lawsuit, which claims the city illegally raised rates, has questioned whether the city is complying with Hayman's August injunction.

Hayman ruled Tuesday there could be no shut-offs for past-due delinquencies, with the exception of those who haven't paid their bills since September.

Hayman also said, although the city has adjusted rates from Sept. 16, 2011, to July 1, 2012, those adjustments applied only to the water commodity and not the service charges for that period.

"The courts' intent was to have that 35 percent applied for both," Hayman said.

Hayman also ordered the city and Washington to meet to negotiate on how to pay back $15.7 million that was "wrongfully taken" from water and sewer funds. He said the City Council should meet to discuss the transfer of the funds.

"As it stands right now, I want my injunction complied with," Hayman said in court.

The water rate saga will continue in court over questions on whether the water rates set by an emergency manager are valid after an earlier version of Michigan's emergency manager law was repealed.

"It raises the issue about Public Act 4," Washington said. "Any actions taken ... they went away when the law went away."

Washington argues that the actions under the law are not valid, so a rate set July 1, 2012, wouldn't survive the repeal of the act.

City Administrator Natasha Henderson said the city is pleased with the decision.

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Such deleterious results too often come with a tyranny that suspension of democracy can bring. In a number of Michigan cities, emergency managers appointed under the authority of Michigan's so-called Emergency Manager Law, replace elected representatives, making changes impacting the health and welfare of citizens. In effect, citizens of affected cities and school districts become chattels of one would-be autocrat, appointed by Governor Rick Snyder.

A temporary solution has become permanent in such principalities in an area suffering under a shift in political power that brought labor's decline and management's ascent as money took hold of government.

An area nicknamed the Rust Belt, formerly known as the industrial heartland of America, is a belt that stretches along the Southern boundaries of the Great Lakes, also covering the Midwest States, New York areas and eastern Wisconsin. It is marked by economic decline, fleeing populations, and urban decay due to numerous economic factors, including automation, globalization, the *Wall Street* recession, and technological change. But many of the factors were politically imposed by the exigencies of shifting power from middle class citizens to Wall Street and crony capitalists.

In 2008, such a shift was evident when the financial abuse of Wall Street bankers resulted in the threatened bankruptcies of giant banks. The reaction of the federal government was multi-billion dollar bailouts, this while stricken consumers were forgotten, as well as citizens of already bankrupt cities throughout the so-called Rust Belt who went even deeper into economic ruin. Such troubled citizens were met with even further cuts, a result of GOP-driven austerity measures, most involving cuts to federal support for local economic services.

The unequal treatment played out with bailouts of monolithic banks and the smack-down of citizens of cities and schools considered wasteful and reckless.

Emergency management laws have been Michigan's answer to financial decline in many cities throughout the state. Currently, Hamtramck, Detroit, Flint, Pontiac, Benton Harbor, Allen Park and the school districts of Muskegon Heights, Highland Park and Detroit are under the control of an emergency manager.

You might argue that the elected leaders of such bankrupt Michigan cities must be replaced with responsible leaders, but such leadership seems to be an excuse for imposing the conservative ideology of governors such as Snyder and a GOP legislature, an ideology which blames the economically stricken for their decline, not Wall Street malfeasance or the crony favoritism practiced by leaders indebted to corporate contributors.

In late 2012, the current Emergency Manager Law was passed by the GOP-controlled Michigan legislature and signed into law by Gov. Rick Snyder. It went into effect in early 2013, after the prior Emergency Manager Law was rejected in a Michigan voter referendum of November, 2012. The new law pointedly blocked any future voter referendums.

Generally you can decry such measures as tyrannical due to the seemingly arbitrary suspension of democracy in such principalities, but events that transpired in Flint, Michigan, one of the captive cities, this over the last two years, speaks volumes of the vicious and mindless cruelty of emergency managers and their overseers in state government, indicated by a lack of nurture or concern for the people.

In April 2014, officials in the city of Flint, namely the emergency manager who is only accountable to Governor Rick Snyder, switched Flint's water source from Detroit's water system of lake water to the Flint River to save money. Although river water is known to be more corrosive, "no water treatment was needed," the emergency manager and Snyder opined. In fact, the emergency manager sold the pipe between Flint and Detroit, severing any connection to the safe Detroit water.

Sure enough, the lead soldering in the Flint pipes began leaching, mixing lead with the corrosive river water. It was immediately determined by the General Motors plant in Flint that the water from the Flint River was so caustic that it was corroding car parts, so they adopted an alternative source. The people of Flint did not have the same resources to switch.

Skin lesions, hair loss, learning disabilities and behavioral problems became more common. Blood tests began revealing the presence of lead in the blood of children. During the months of July, August and September, 2014, the Michigan Department of Health and Human Services (DHHS) internally revealed that lead poisoning rates "were higher than usual for children under age 16 living in the City of Flint. When the Michigan department of Environmental Quality (MDEQ) officials, who reported directly to Governor Rick Snyder, repeatedly and falsely stated that no spike in blood lead levels (BLL) of children had occurred, DHHS officials did not object.

For a whole year DHHS officials stonewalled efforts by outside researchers, and even released incomplete data to cover up the evidence. Only when the incidence of childhood lead poisoning skyrocketed above 10% in the two Flint zip codes with the highest water lead risk did they reveal the truth, and it wasn't until October of 2015 that the county declared a public health emergency.

The Rick Snyder administration was aware that the lead level in the drinking water went from 6 parts per million to 11 parts per million in just 6 months in 2014 and 2015. Even so in July of 2015 Brad Wurfel of the Michigan Department of Environmental Quality, reporting directly to Rick Snyder, announced, "relax … There is no broad problem right now that we've seen with lead in the drinking water in Flint."

Governor Rick Snyder allowed Flint to drink toxic water despite repeated warnings. He knew that there were elevated lead levels in the blood and had to know that brain damage in children is life-long and irreversible, most especially for children under age six. Flint pediatrician, Dr. Mona Hanna-Attista did painstaking research showing unsafe lead levels in Flint's children. Her September of 2015 report even then was denounced by Michigan state agencies.

"Lead is probably one of the most damning things you can do to a population," Hanna-Attisha said.

In contrast to the Snyder administration's insulting denunciations and bluster, her words were measured in sadness for the many stricken children, "We wouldn't expect this to happen in 2015, especially when we could have easily used corrosion control to prevent it."

Meanwhile Rick Snyder distanced himself from the suffering by appointing a communication professional to handle the Flint lead poisoning debacle, while his Board of State Canvassers voted to reject a recall petition filed by a Detroit pastor.

To: MIGUEL DEL TORAL[Personal Email / Ex. 6]
Cc: Schock, Michael[Schock.Michael@epa.gov]; Mona Hanna-Attisha[MHanna1@hurleymc.com]; Lytle, Darren[Lytle.Darren@epa.gov]
From: Elin Betanzo
Sent: Fri 12/25/2015 5:10:04 AM
Subject: Re: Distribution system water quality

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Sent from my phone

On Dec 23, 2015, at 1:21 PM, MIGUEL DEL TORAL <Personal Email / Ex. 6> wrote:

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> **Cc:** M <Personal Email / Ex. 6>; "Lytle, Darren" <Lytle.Darren@epa.gov>
> **Sent:** Tuesday, December 22, 2015 12:57 PM
> **Subject:** RE: Distribution system water quality
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Cc: M; Lytle, Darren
Subject: RE: Do you have Laura's phone number?
Importance: High

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Sent: Tuesday, December 22, 2015 10:40 AM
To: Mona Hanna-Attisha <MHanna1@hurleymc.com>
Cc: Schock, Michael <Schock.Michael@epa.gov>
Subject: Re: Do you have Laura's phone number?

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Personal Phone / Ex. 6

Mona Hanna-Attisha MD MPH FAAP
Director, Pediatric Residency Program
Hurley Children's Hospital
Michigan State University

On Dec 21, 2015, at 1:18 PM, Schock, Michael
<Schock.Michael@epa.gov> wrote:

> Darren went to call her, and I can’t find her phone number, and neither can Darren
>
> **Michael R. Schock**
> U.S. Environmental Protection Agency
> ORD, NRMRL, WSWRD, TTEB
> 26 West Martin Luther King Drive
> Cincinnati, OH 45220
>
> Phone: 513.569.7412
> schock.michael@epa.gov
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Cc: Mona Hanna-Attisha[MHanna1@hurleymc.com]; Elin Betanzo[ebetanzo@nemw.org]; Schock, Michael[Schock.Michael@epa.gov]
From: Lytle, Darren
Sent: Sat 12/26/2015 3:34:15 PM
Subject: Re: Distribution system water quality

I agree that task force site would be best site to post. I will ask about the ORD site but I can almost guarantee we won't be able to post. It is hard enough to figure out how to post our own work on the site. Communication is very challenging within ORD these days. Darren

Sent from my iPhone

On Dec 25, 2015, at 8:06 AM, MIGUEL DEL TORAL <Personal Email / Ex. 6> wrote:

> I can't think of any reason it wouldn't be. I assume the TF site would be the most logical place to put it. Not sure if Mike/Darren have thought about posting it on ORD's website as well to highlight the collaborative work and technical assistance.
>
> ---
>
> **From:** Mona Hanna-Attisha <MHanna1@hurleymc.com>
> **To:** Elin Betanzo <ebetanzo@nemw.org>
> **Cc:** MIGUEL DEL TORAL <Personal Email / Ex. 6>; "Schock, Michael" <Schock.Michael@epa.gov>; "Lytle, Darren" <Lytle.Darren@epa.gov>
> **Sent:** Thursday, December 24, 2015 11:18 PM
> **Subject:** Re: Distribution system water quality
>
> Will the results be able to be posted online? Maybe on the EPA flint website?
>
> Mona Hanna-Attisha MD MPH FAAP
> Director, Pediatric Residency Program
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To: Hedman, Susan[hedman.susan@epa.gov]; Kaplan, Robert[kaplan.robert@epa.gov]; Hyde, Tinka[hyde.tinka@epa.gov]
Cc: Rowan, Anne[rowan.anne@epa.gov]; Kelley, Jeff[kelley.jeff@epa.gov]; Beckmann, Ronna Erin[beckmann.ronna@epa.gov]; Harrison, Melissa[Harrison.Melissa@epa.gov]; Poy, Thomas[poy.thomas@epa.gov]; Abrams, Dan[Abrams.Dan@epa.gov]; Grantham, Nancy[Grantham.Nancy@epa.gov]; Lee, Monica[Lee.Monica@epa.gov]; Purchia, Liz[Purchia.Liz@epa.gov]; Cannon, Phillippa[Cannon.Phillippa@epa.gov]; Cassell, Peter[cassell.peter@epa.gov]; Nowotarski, Allison[nowotarski.allison@epa.gov]; Fortin, Denise[Fortin.Denise@epa.gov]; Loop, Travis[Loop.Travis@epa.gov]; Deamer, Eileen[deamer.eileen@epa.gov]; Singer, Joshua[Singer.Joshua@epa.gov]; Arcaute, Francisco[Arcaute.Francisco@epa.gov]
From: Arcaute, Francisco
Sent: Mon 12/28/2015 6:27:03 PM
Subject: Flint Drinking Water Clips, Dec. 28, 2015

FLINT DRINKING WATER CLIPS

US. EPA Region 5 – as prepared by Francisco Arcaute *(ORA/OEC/PA)* on DEC. 28, 2015

•□□□□□□□□ Flint water probe may unleash flood of findings on mistakes (Mlive)

•□□□□□□□□ Gov. Snyder calls Flint water issue 'greatest challenge' during interview (Mlive)

•□□□□□□□□ State's handling of Flint water samples delayed action (Detroit Free Press)

•□□□□□□□□ Mainstream media slow to pick up on Flint water crisis (Metro Times)

•□□□□□□□□ U.S. congressman calls for health fund for children affected by Flint water crisis (WWMT)

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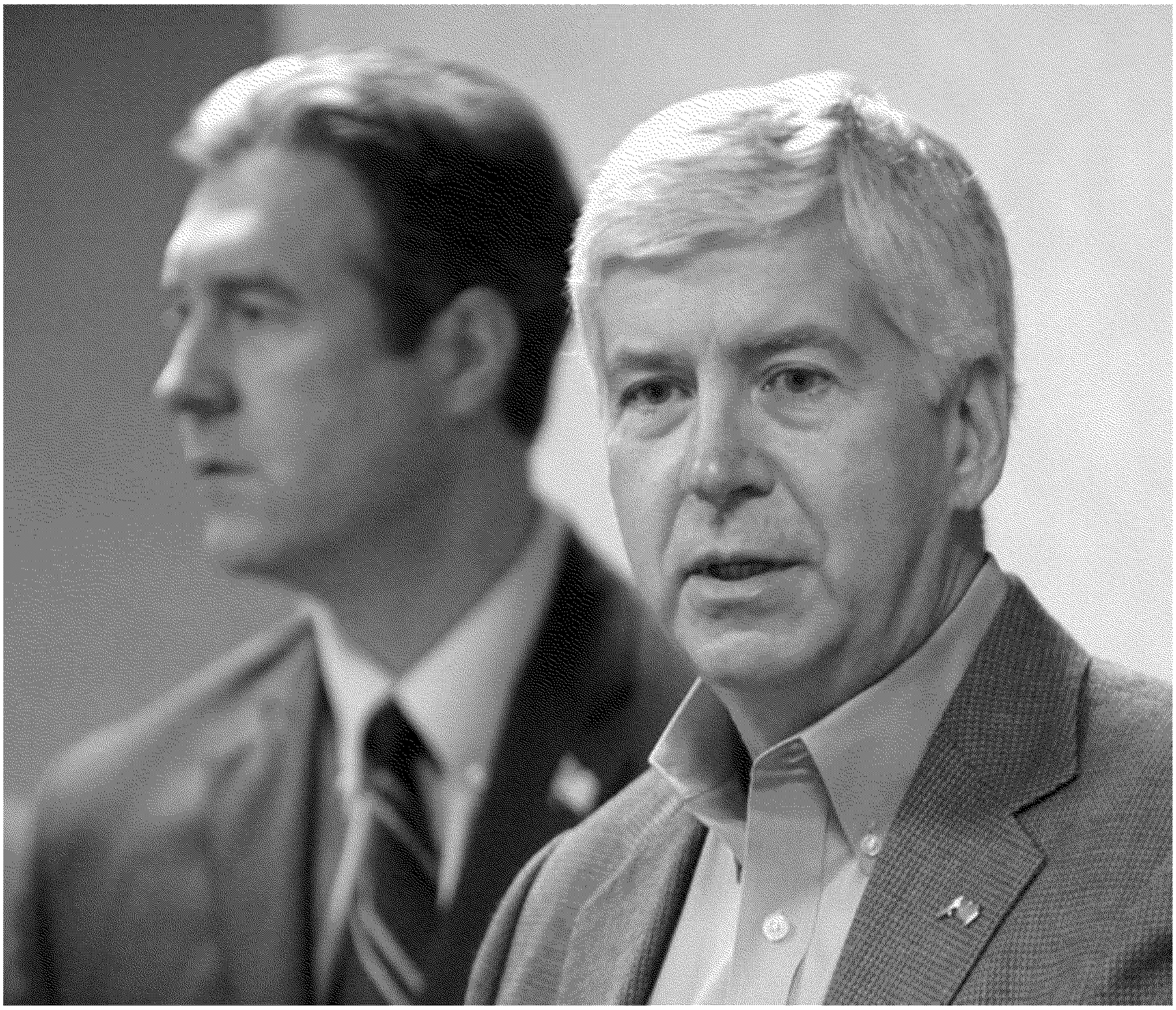
http://www.mlive.com/opinion/index.ssf/2015/12/flint_water_probe_may_unleash.html

Flint water probe may unleash flood of findings on mistakes



Gov. Rick Snyder announces support of the city of Flint's plan to switch back to Detroit water due to high lead levels during a news conference with Mayor Dayne Walling in Flint on Oct. 8, 2015. *(MLive.com files)*

Print Email

By Tim Skubick | Politics Columnist for MLive.com MLive.com
on December 27, 2015 at 6:00 AM

It was very revealing how some readers responded to the post that the first lady thought her husband might die from a blood clot. Instead of reflecting on the gravity of that story, lots of folks wanted to beat up on the governor for allegedly poisoning the kids in Flint with lead.

Make no mistake: The Snyder administration did not experience its finest hour in its handling — critics would say bungling — of the Flint water contamination problem.

Much like the old Watergate hearings, where everyone was asked what they knew and when they knew it, the same penetrating question is being asked about this story.

The governor concedes it was the biggest challenge he faced in 2015 and perhaps for his entire term in office.

For those of you who missed it, when the decision was made to shift from Detroit water to H20 from the Flint River, residents immediately complained about the quality of the new supply. No one knew at the time there was lead in the water, but the administration's first response was that there was no problem.

And it wasn't until a local doctor did lab tests and uncovered the lead in the blood of little kids that the administration kicked into high gear, allocating $10 million for water filters, human testing and checking the water in all the schools.

The governor has also formed a task force to review what happened and, while the report is not finalized, there is every indication to believe mistakes were made.

The governor was given a chance on statewide Public TV the other day to apologize to the Flint community for making those mistakes.

Here's what he could have said. All the facts are not in yet, but if mistakes were made, and obviously residents should not have been exposed to lead, if mistakes were made, you will have my apology loud and clear. I understand the public health crisis the residents are facing, and be reassured we are doing everything we can to address the problem.

In a town where anxiety is off the charts on the long-term public health impact on children and adults, citizens might have found an ounce of comfort in that.

What the governor did say was this: "I will be happy to take responsibility as appropriate through this process, and the best guidance on that will be based on that report."

He was also asked if he was sorry this happened, and he said, "Well, yeah."

One of the most telling moments in this saga was when General Motors disconnected from the Flint River because the water was ruining its machinery, leaving some to wonder — if it was doing that to machines, what was it doing to humans?

Critics contend that red flag alone should have motivated the administration to redouble its due diligence to get to the bottom of this.

Another debating point involved the emergency manager, appointed by the governor, who participated in the water switch decision.

The critics contend the EM was more interested in saving money, and because the Flint water was less expensive, he shut off the Detroit pipeline.

The governor believes there were a host of others who participated in all this and he contends, "I think they factored in other things, but let the report speak for itself."

Needless to say, when the report speaks it will make news, news that may not make the governor's day.

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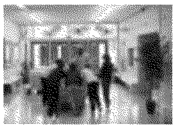
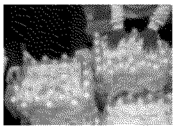
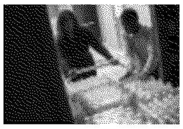
http://www.mlive.com/news/flint/index.ssf/2015/12/gov_snyder_calls_flint_water_i.html

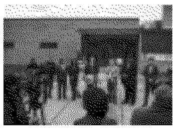
Gov. Snyder calls Flint water issue 'greatest challenge' during interview

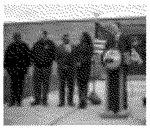
BE SAFE
BE RESPECTFUL
BE RESPONSIBLE
EXIT

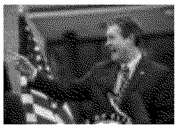


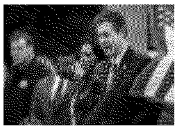


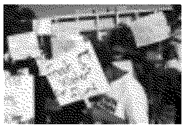


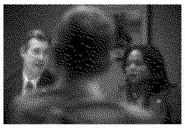


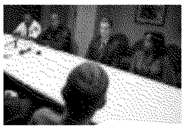


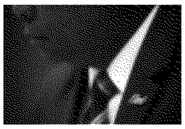


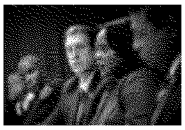


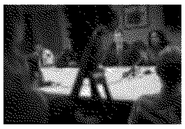


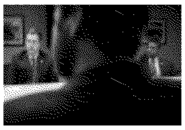


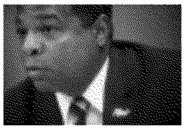


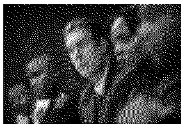












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Students at Freeman Elementary School help unload a delivery of water bottles donated by Lanice Lawson, a Davison resident who started a GoFundMe.com page to raise money to bring bottled water to Flint kids on Thursday, Oct. 8, 2015, at Freeman Elementary School in Flint, Mich. At a news conference on Thursday, Michigan Department of Environmental Quality Director Dan Wyant announced that water at three Flint schools tested above 15 parts per billion for lead -- the federal safety standard. Freeman had a sample that tested over six times the federal limit for lead, Wyant said. Danny Miller | MLive.com

Danny Miller | dmille17@mlive.com

Print Email

By Gary Ridley | gridley@mlive.com The Flint Journal
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on December 25, 2015 at 11:00 AM

flint water

- □□□□□□□□ Gov. Snyder calls Flint water issue 'greatest challenge' during interview
- □□□□□□□□ Congressman calls for state water crisis health fund on Rachel Maddow show
- □□□□□□□□ Questions over emergency manager law arise in Flint water rates lawsuit

•□□□□□□□□ MSNBC's Rachel Maddow keeps national spotlight on water crisis in Michigan

•□□□□□□□□ Genesee County Medical Society supports Flint declaration of water emergency

All Stories

FLINT, MI – Michigan Gov. Rick Snyder told a Northern Michigan news station that Flint's water problem is his office's "greatest challenge."

During a recent interview with 9&10 News, Snyder said 2015 was a good year for Michigan but troubles with the Vehicle City's water supply show there are still challenges facing the state.

"The greatest challenge we face was Flint with their water situation," Snyder said during the interview. "We've tried to be very proactive in terms of offering free water testing, free water filters, blood testing, follow-up on medical care, changing over water sources. You always want to improve so I always look at ways for continuous improvement."

The problems began after the city stopped receiving treated drinking water from Detroit and began treating water from the Flint River on its own. The change happened while the city was being run by a state-appointed emergency manager.

State and federal reviews of how the Flint's water crisis was allowed to happen are still ongoing, but Snyder's office has faced criticism of its handling of the situation.

State officials found evidence of rising blood lead levels in Flint two months before the problem was exposed by a Flint pediatrician, but didn't immediately inform the public, according to documents recently released by a water researcher.

Michigan public health officials said Dec. 22 that they did not sound an alarm about the spike, which coincided with the city's switch from Detroit to the Flint River for drinking water, because they initially believed the numbers represented a "seasonal fluctuation."

MSNBC political pundit Rachel Maddow has been especially critical of Snyder during multiple recent segments on the city's water issues. Democratic elected officials such as U.S. Rep Dan Kildee and Sen. Debbie Stabenow have called recently for an increased response from the state.

You can see 9&10 News' entire segment with Snyder here.

Northern Michigan's News Leader

http://www.freep.com/story/news/politics/2015/12/23/states-handling-flint-water-samples-delayed-action/77367872/

State's handling of Flint water samples delayed action

Paul Egan, Detroit Free Press 10:09 a.m. EST December 24, 2015

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Jessica Owens of Flint holds a bottle of water from her home she collected she said had been proved to have lead while protesting outside of the Kettering University Innovation Center in Flint on Oct. 2, 2015, during an announcement of an action plan for Flint drinking water following warnings of high levels of lead in the water.(Photo: Ryan Garza, Detroit Free Press)Buy Photo

LANSING — Lead levels in Flint's drinking water would have spurred action months sooner if the results of city testing that wrapped up in June had not been revised by the Michigan Department of Environmental Quality to wrongly indicate the water was safe to drink, e-mails show.

The records — obtained by the Michigan ACLU and by Marc Edwards, a Virginia Tech researcher who helped raise concerns about Flint's water — show how state officials first appear to have encouraged the City of Flint to find water samples with low lead levels and later told Flint officials to disqualify two samples with high readings. The move changed the overall lead level results to acceptable from unacceptable.

The e-mails also show that DEQ district coordinator Stephen Busch told the U.S. Environmental

Protection Agency on Feb. 27 that Flint had "an optimized corrosion control program" to prevent lead from leaching into the drinking water from pipes, connections and fixtures. In fact, the city — disastrously — had no corrosion control program.

DETROIT FREE PRESS

When did state know kids in Flint were lead poisoned?

Why those DEQ officials took the actions they did is a question at the center of a tragedy that has left an unknown number of children and other Flint residents poisoned by lead, and has led to a federal lawsuit and calls for a U.S. Justice Department investigation. The questions surrounding the testing are in addition to the broader question of why Flint, which was under the control of a state-appointed emergency manager at the time, switched its drinking water source, starting in April 2014, from Lake Huron water supplied by Detroit to the much more polluted and corrosive water from the Flint River.

Brad Wurfel, a spokesman for DEQ Director Dan Wyant, declined to say Tuesday why Busch gave inaccurate information to the EPA, why another DEQ official told Flint officials he was hoping they would send him water samples showing low lead levels, or why the DEQ was strict in disqualifying certain water samples with high lead readings but not strict in disqualifying other samples showing low lead levels that did not appear to meet the sampling criteria.

DETROIT FREE PRESS

Former Flint mayor wants feds to probe lead in water

"Most of these questions regard issues presently before the governor's independent after-action review panel," Wurfel told the Free Press in an e-mail. "We don't want to get in front of that review."

On June 25, Adam Rosenthal, of the DEQ's Office of Drinking Water and Municipal Assistance, sent an e-mail about the water samples, required under the federal Lead and Copper Rule, to Michael Glasgow, a utilities administrator with the City of Flint.

Buy Photo

The Michigan Department of Environmental Quality revised downward the results of water samples in Flint. (Photo: Detroit Free Press file photo)

"Just wanted to remind you/confirm that Flint is on track for a few items," Rosenthal wrote in the e-mail, which he copied to two other DEQ officials.

"We hope you have 61 more lead/copper samples collected and sent to the lab by 6/30/15, and that they are will be (sic) below the AL (action level) for lead," the e-mail said. "As of now with 39 results, Flint's 90th percentile is over the AL for lead."

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DETROIT FREE PRESS

Flint mayor declares state of emergency over water

If 100 lead-in-water samples were listed in ascending order, the 90th percentile would be the 90th sample, meaning 10 samples would have higher readings. To stay below the "action level," which triggers requirements for public notification and steps to reduce the amount of lead in the water, the 90th percentile for Flint's drinking water samples had to be at or below 15 parts per billion. To put it another way, Flint's water would reach an action level if more than 10% of the samples exceed 15 parts per billion.

Melissa Mays, a Flint resident who drank the contaminated water along with her three boys, said there is only one way to read the Rosenthal e-mail.

"The MDEQ informed the City of Flint that they were in danger of going in violation, and they asked for low samples," Mays told the Free Press.

Wurfel wouldn't comment when asked if that's how the e-mail should be interpreted. Rosenthal did not respond to an e-mail seeking comment. Busch, who was copied on the e-mail Rosenthal sent to Flint, sent an automated e-mail reply that said he is out of the office until Jan. 4.

Had Flint's water sampling come in above the action level, it would have triggered action in July. Instead, it was not until October, after blood test results showed elevated lead levels in Flint children, that the DEQ admitted making a mistake about failing to require the addition of needed corrosion control chemicals to the Flint River water. The state also provided funds to help Flint reconnect to Lake Huron water supplied by Detroit.

The EPA requires that water sampling be done at "high-risk" locations whenever possible. To comply with that, the American Water Works Association says cities such as Flint should collect 50% of samples from homes with lead service lines. For the samples taken in 2015, the EPA rules also required that Flint sample the same 100 homes it sampled the previous year, between July and December of 2014.

But the City of Flint didn't get 100 samples in 2015. After receiving Rosenthal's e-mail expressing a hope for samples below the action level, the city in the next five days collected 30 additional samples, all of which were below the action level.

The DEQ decided that fewer than 100 samples would suffice because Flint's population had dropped below 100,000.

But Edwards said the smaller number of samples the DEQ allowed still should have come from the group of 100 homes tested a year earlier and should have all come from homes at high risk for lead.

The Michigan ACLU, and later the Flint Journal has reported that seven of the additional samples the city collected, or nearly 25% of them, came from a single stretch of Flushing Road in Flint, where the city had replaced a lengthy session of water main in 2007. Not surprisingly, all of those samples measured very low for lead.

In all, the newspaper reported, only 13 of the homes sampled were from the same list of 100 homes tested in 2014. All the homes that were sampled for a second time in 2015 had tested low for lead in 2014. None of the homes that in 2014 had lead levels above the 15 parts per billion action level were sampled a second time.

Edwards told the Free Press the samples were "cherry-picked," and that's a violation of federal law.

Wurfel would not comment when asked if that was the case.

Even then, the 71 samples Flint relied on would have put the city's water above the action level under the original report Flint prepared, dated July 28. Only after two high lead samples were disqualified at the direction of the DEQ, bringing the total number of samples used down to 69, was the water found to be at 11 parts per billion for lead, below the action level.

The revised report, dated Aug. 20, included the following comment from Flint utilities administrator Michael Glasgow: "Revised report after conference call with DEQ staff. Two samples were removed from list for not meeting sample criteria ..."

One of the disqualified samples, which showed lead at more than 100 parts per billion, came from the home of LeeAnne Walters. Walters had subsequently been retested with results coming back even worse and was visited by an EPA official in April. That EPA official, Miguel Del Toral, found that Walters' indoor plumbing was plastic and could not be the source of the high lead readings, as the DEQ had suggested to him.

The DEQ disqualified another high lead-level sample because it did not come from a single-family residence.

On Aug. 4, Walters, other community activists, and concerned pastors met at the Capitol with top aides to the governor and officials from the DEQ. Walters asked why her sample wasn't used and didn't get an explanation. She and others at the meeting say Harvey Hollins, an aide to Gov. Rick Snyder who was last week named the state's point man on the Flint water issue, instructed DEQ officials to get back to her on why her sample wasn't used.

Walters says she never received that explanation, but the DEQ produced a letter sent to Walters by e-mail in response to a FOIA request from Edwards.

In the Aug. 25 e-mail, Liane Shekter Smith, who at the time was the chief of the DEQ's Office of Drinking Water and Municipal Assistance but was reassigned in October after the DEQ acknowledged oversight mistakes in connection with Flint's drinking water, tells Walters her results were disqualified because she uses a water filter.

Walters said that she had been instructed to remove the filter before taking any water samples and always did so.

Though it was strict in disqualifying the high samples from Walters, the DEQ did not strictly enforce other requirements related to the samples, such as that they all come from the same group of homes sampled a year earlier, or that they come from homes at high risk for lead.

"The state is the one monitoring these decisions," Walters said. "They should be doing their job accurately. Someone should be holding them accountable for not doing things the way they were supposed to."

Contact Paul Egan: 517-372-8660 or pegan@freepress.com. Follow him on Twitter @paulegan4.

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http://www.metrotimes.com/Blogs/archives/2015/12/24/mainstream-media-slow-to-pick-up-on-flint-water-crisis

Mainstream media slow to pick up on Flint water crisis

Posted By Lee DeVito on Thu, Dec 24, 2015 at 2:03 PM

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MEGATRN'S LAST STAND?
Detroit Free Press
HAPPY HOLIDAYS FROM ... AND OUR DEALERS
FLINT WATER CRISIS
State revisons to tests delayd action
Comics inside white section
TURN TO US THIS HOLIDAY SEASON:

•□□□□□□□□ Lee DeVito

The Flint water crisis gets an above the fold, **front page article** in Thursday's edition of the *Detroit Free Press* — though the piece contains no new information on a story that broke more than three months ago.

The article details how the state was slow to acknowledge the problem — that Flint's emergency manager-mandated switch from Detroit's water to the Flint River wound up contaminating the city's supply with lead — by repeatedly downplaying its severity and attempting to discredit the investigations.

Yet it was also the mainstream media that has been slow to acknowledge the crisis.

The story was first reported by Curt Guyette with the ACLU on its **Democracy Watch blog** and here in ***Metro Times***, and first announced by the ACLU at a Sept. 15 press conference in Flint.

Through a unique partnership Guyette and the ACLU have both broken news on the scandal as well as create it (Michigan's ACLU is the only branch in the country to have an investigative reporter on staff). After publishing a leaked EPA memo, Guyette and the ACLU conducted the independent water tests alongside Flint's Coalition for Clean Water and Virginia Tech researchers by going door-to-door and collecting water samples.

"I was really walking a line in my own role as a journalist and activist," Guyette **told *CJR*** last month. "I'm not just observing the story; I'm participating in it. In my mind, I'm just trying to get to the truth."

Earlier this week, **the story was the focus of a segment** of Rachel Maddow's national MSNBC show, who argued the crisis can be traced to Michigan's "radical" emergency manager legislation.

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http://www.wwmt.com/news/features/state/stories/U-S-congressman-calls-for-health-fund-for-children-affected-by-Flint-water-crisis-245467.shtml#.VoF5L01dOdI

U.S. congressman calls for health fund for children affected by Flint water crisis

Updated: Fri, Dec 25 2015, 08:50 PM

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FLINT, Mich. (NEWSCHANNEL 3) - A U.S. representative from Michigan is pushing for a health fund for children affected by Flint's water crisis.

Rep. Dan Kildee was on the Rachel Maddow show this week, and he called on Governor Rick Snyder to provide funding for continued health assistance to Flint children diagnosed with elevated levels of lead in their blood.

Kildee says while city officials apologized and acknowledged the failure, "we need them to make it right."

He hasn't given a cost for the program, but says that it includes health, nutritional, and education support for kids under the age of 5.

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To: Hedman, Susan[hedman.susan@epa.gov]; Kaplan, Robert[kaplan.robert@epa.gov]; Hyde, Tinka[hyde.tinka@epa.gov]
Cc: Rowan, Anne[rowan.anne@epa.gov]; Kelley, Jeff[kelley.jeff@epa.gov]; Cassell, Peter[cassell.peter@epa.gov]; Cannon, Phillippa[Cannon.Phillippa@epa.gov]; Singer, Joshua[Singer.Joshua@epa.gov]; Poy, Thomas[poy.thomas@epa.gov]; Purchia, Liz[Purchia.Liz@epa.gov]; Harrison, Melissa[Harrison.Melissa@epa.gov]; Reshkin, Karen[Reshkin.Karen@epa.gov]; Beckmann, Ronna Erin[beckmann.ronna@epa.gov]; Deamer, Eileen[deamer.eileen@epa.gov]; Fortin, Denise[Fortin.Denise@epa.gov]; Nowotarski, Allison[nowotarski.allison@epa.gov]; Loop, Travis[Loop.Travis@epa.gov]; Abrams, Dan[Abrams.Dan@epa.gov]; Grantham, Nancy[Grantham.Nancy@epa.gov]; Arcaute, Francisco[Arcaute.Francisco@epa.gov]
From: Arcaute, Francisco
Sent: Tue 12/29/2015 3:31:59 PM
Subject: Flint Water Clips, Dec. 29, 2015

FLINT DRINKING WATER CLIPS

US. EPA Region 5 – as prepared by Francisco Arcaute *(ORA/OEC/PA)* on DEC. 29, 2015

□□□□□□□□□ **Auditor general findings set off Flint water debate (The Detroit News)**

□□□□□□□□□ **Auditor General's report says Flint water should have gotten corrosion control (MLive)**

□□□□□□□□□ **Independent report confirms state made mistakes, but not "intentional" ones in Flint water crisis (Michigan Radio)**

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http://www.detroitnews.com/story/news/politics/2015/12/28/michigan-auditor-general-flint-water-debate/77982594/

Auditor general findings set off Flint water debate

Jim Lynch, The Detroit News 3:37 p.m. EST December 28, 2015

Dr. Paul Chrenka and medical assistant Miranda Limberg give a water lead test to a child at their Flint clinic in November.(Photo: John M. Galloway / Detroit News)

129 CONNECTTWEETLINKEDIN 46 COMMENTEMAILMORE

Findings compiled by Michigan's Office of the Auditor General have set off another debate about who is to blame for Flint's 18-month-long water crisis.

Two state lawmakers are blaming Flint's contaminated water on state environmental officials based on the auditor general's letter. A state spokesman, however, said the findings of state A uditor General Doug Ringler merely confirm what has already been reported.

The document, a set of answers to detailed questions from Senate Minority Leader Jim Ananich, D-Flint, and Rep. Sheldon Neeley, D-Flint, was released late last week. On Monday, Ananich and Sheldon charged state officials with being behind the 2014 decision to have Flint change the source of its drinking water to the Flint River from the Detroit Water and Sewerage Department's Lake Huron.

"This is another example of how the state failed, initially, and continues to fail, by not treating this situation like the emergency it is," Neeley said in a statement. "We need answers, we need action and we need them sooner rather than later."

In the letter, though, Ringler indicates that when Flint and the Detroit water system officials failed to reach an interim agreement on water supply after Flint decided to build its own water authority, “the City of Flint notified DEQ through a permit request of its intent to operate the Flint WTP (Water Treatment Plant) full time using the Flint River.”

While under the control of an emergency manager appointed by Gov. Rick Snyder, the city began drawing its drinking water from the Flint River in April 2014. The cost-saving move immediately led to complaints from residents about the taste, color and smell of the water coming from their taps.

In July, August and September, testing results began to paint a darker picture — children in certain areas of the city were beginning to show signs of lead contamination.

The city has since switched back to its previous water supplier, the Detroit water department. A task force is charged with figuring out how Flint’s water situation went wrong, including an examination of how corrosion controls were not used in bringing the river water into homes.

Corrosion controls, like phosphates, are added before water leaves the treatment plant to help coat pipelines to prevent lead from leaching in. Following the switch to the Flint River, no such corrosion controls were added. And many of the questions surrounding the problems in Flint center on who decided to omit corrosion controls.

For months, DEQ officials have been under the microscope for their handling of the issue. Some of the harshest criticism has come from those who believe state workers purposely misled the U.S. Environmental Protection Agency over whether corrosion controls were in use.

Critics point to a Feb. 27 email from a state employee to the federal agency contending that a corrosion control program was in place. The Auditor General’s report lays out the resulting situation.

■“It appears the EPA interpreted corrosion control program to mean that corrosion control treatment was in place.”

■“On April 23, 2015, the EPA again inquired as to what the Flint WTP was doing for corrosion control treatment.”

■“DEQ responded on April 24, 2015 that the Flint WTP was not practicing control treatment.”

“Based on our review of this and other emails, we have no specific reason to believe that DEQ willingly misrepresented the information to the EPA,” the report reads.

On Monday, Ananich contended the Auditor General findings put the blame on state officials.

“What’s clear is that corrosion control should have been used, and there are serious failings in our system that must be addressed,” Ananich said in a press release. He added that city officials voted in 2013 to switch to the Karegondi Water Authority — a new regional water supply system that is still under construction — but never addressed the issue of using the Flint River.

State environmental and health officials got a measure of support from the office of Snyder, a Republican.

"The letter from the Office of the Auditor General includes some criticisms, but also reflects that state officials were following accepted protocols, or in one case, an interpretation of the corrosion control program that the EPA later clarified," said David Murray, the governor's spokesman.

"But we need to do better in ensuring Flint residents have safe water and tracking children affected by elevated lead levels. We continue to work with the bipartisan task force that is reviewing all the actions at the state, local and federal level and is expected to offer recommendations in a month or so. Gov. Snyder is committed to working with Flint Mayor Weaver and officials on these issues."

On Monday, DEQ Spokesman Brad Wurfel addressed the auditor general's letter.

"The findings of the Auditor General are consistent with our findings at DEQ in our own internal review," Wurfel said. "We appreciate their careful consideration of the issues they were asked to look at."

JLynch@detroitnews.com

(313) 222-2034

Detroit News Staff Writer Chad Livengood contributed.

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http://www.mlive.com/news/flint/index.ssf/2015/12/auditors_report_says_corrosion.html

Auditor General's report says Flint water should have gotten corrosion control (MLive)

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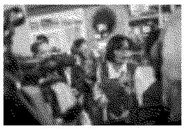

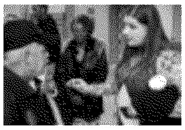

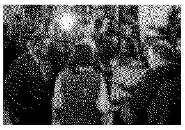

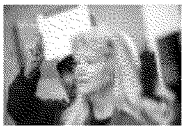

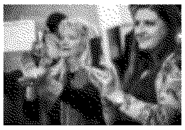

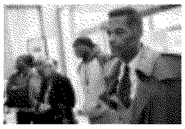

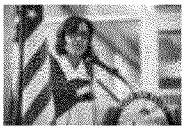

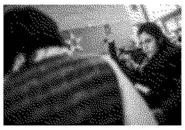

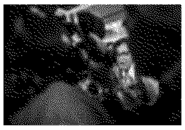

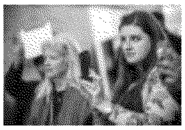

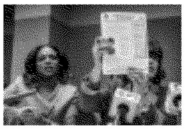

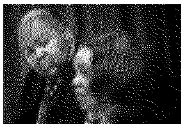

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A swarm of reporters surround Flint Mayor Karen Weaver to ask question after a news conference on Tuesday Dec. 15, 2015 at City Hall in Flint, as Weaver declares a state of emergency in Flint, saying the city needs federal help to deal with its lead in water crisis. "I am requesting that all things be done necessary to address this state of emergency declaration, effective immediately," Weaver told the City Council today, Dec. 14, where she initially made the declaration. "Do we meet the criteria (for a disaster area)? I don't know. I'm going to ask and let them tell us no." The new mayor asked that the Genesee County Board of Commissioners call a special meeting to take action to support her declaration, that it be forwarded to Gov. Rick Snyder, and potentially President Obama. Jake May | MLive.com

Jake May | jmay2@mlive.com

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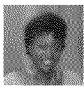By Jiquanda Johnson | jjohns16@mlive.com The Flint Journal
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Flint water

□□□□□□□□□ Michigan Gov. Rick Snyder, legislative leaders name biggest disappointments of 2015

□□□□□□□□□ Auditor General's report says Flint water should have gotten corrosion control

□□□□□□□□□ Gov. Snyder calls Flint water issue 'greatest challenge' during interview

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LANSING, MI -- A letter dated Dec. 23 from the Office of State Auditor General responding to a series of questions asked by Michigan Sen. Jim Ananich, D-Flint, in October made it clear that corrosion control should have been maintained during Flint's transition from Detroit water to Flint River water.

Jim Ananich, D-Flint, is Democratic Leader of the Michigan Senate.

Ananich said he asked for the audit to find out how Flint's residents were exposed to lead-tainted water.

"The Auditor General has provided an important piece of this puzzle and I'm sure the extended report they are working on will reveal additional information," Ananich said in a Dec. 28 press release. "What's clear is that corrosion control should have been used and there are serious failings in our system that must be addressed. Between the FOIA emails released recently and these findings, it's obvious that legislative oversight is the best way to see how all of these pieces fit together. I expect holding hearings to be high on the agenda when the Legislature returns."

Ananich's questions included whether corrosion control treatment should have been maintained when the city of Flint switched from Detroit to use the Flint River as its water supply in 2014 and who ultimately showed support for the switch.

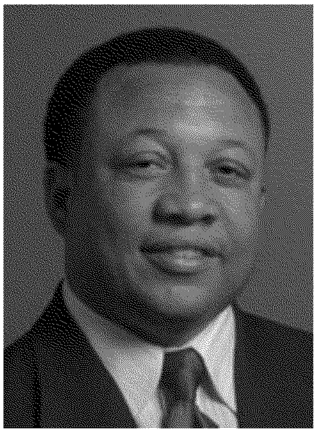
Ananich, along with State Rep. Sheldon Neeley, called for legislative hearings and has asked for a more aggressive response to Flint's water crisis. According to the press release, the two have worked with local and federal officials in securing more resources for safe drinking water for Flint residents.

Gov. Rick Snyder's Press secretary David Murray said the governor's office continues to work on the Flint water issues.

"The letter from the Office of the Auditor General includes some criticisms, but also reflects that state officials were following accepted protocols, or in one case, an interpretation of the corrosion control program that the EPA later clarified," Murray said in an email to The Flint Journal.

"But we need to do better in ensuring Flint residents have safe water and tracking children affected by elevated lead levels," he said. "We continue to work with the bipartisan task force that is reviewing all the actions at the state, local and federal level and is expected to offer recommendations in a month or so. Gov. Snyder is committed to working with Flint Mayor Weaver and officials on these issues.

"We appreciate the efforts of the Auditor General and will carefully consider all of the recommendations contained in the letter," Murray said.



State Rep. Sheldon Neeley*MLive.com File*

Neeley says action needs to take place.

"This is another example of how the state failed initially, and continues to fail by not treating this situation like the emergency it is," Neeley said. "We need answers, we need action, and we need them sooner rather than later."

The audit is still ongoing. After the findings, Ananich said, there was a decision to do a more extensive audit. He said after the more-detailed audit is finished, he is hoping to know how this happened to the city of Flint.

"I think it's pretty clear even from this initial report that there needs to be an acknowledgement that the state is responsible in a large part of what happened ... I think there should be accountability and what that looks like we won't know until things move forward. This initial audit shows that we really have an issue that needs to be solved. This helps created a sense of urgency that many of us in Flint have been calling for, for a long time."

The auditors wrote in their report that anti-corrosion measures should have been in place: "We believe that corrosion control treatment should have been maintained." Even so, the DEQ should have told Flint to start corrosion treatment after rising levels of lead were detected in the water, the report says.

Flint Mayor Karen Weaver says an investigation needs to be held on a local level.

"I'm really not surprised by the findings," Weaver said. "But I need to commend Sen. Ananich and State Rep. Neeley for pursing this issue. I would really hope that Flint City Council can do their own investigation and hearings to find out on a local level what happened to make sure this doesn't happen again and to make sure we don't have any gaps."

The report states that the Flint City Council did not vote to switch to Flint River water, as city leaders have claimed. In fact, the report does not clearly indicate who made that decision.

To view the auditor's report click -
http://www.audgen.michigan.gov/finalpdfs/15_16/1761032015.pdf

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http://michiganradio.org/post/independent-report-confirms-state-made-mistakes-not-intentional-ones-flint-water-crisis#stream/0

Independent report confirms state made mistakes, but not “intentional” ones in Flint water crisis

By Lindsey Smith · 15 hours ago

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src="http://michiganradio.org/sites/michigan/files/styles/default/public/201511/hospital.jpg" alt="Tap water in a Flint hospital on Oct. 16, 2015.">

Credit Joyce Zhu / Flintwaterstudy.org

Preliminary findings from Michigan's independent Auditor General give more details about the Flint water crisis.

In a letter to State Senator Jim Ananich, Auditor General Doug Ringler answers several key questions about the state's role in the decision to switch to the Flint River and how Michigan's Department of Environmental Quality dealt with those decisions.

Ringler's review confirms it was the state appointed emergency manager who made the decision to switch to the Flint River, not city leaders. It also confirmed that Detroit's water system made offers to keep Flint as a water customer, but that a different emergency manager rejected those offers.

The report says Flint's Water Treatment Plant was upgraded in the 1990s to treat Flint River water as a backup source in case of emergencies. But the city "did not test the water's effect on the distribution system at consumer tap locations."

The distribution system is where the lead in people's tap water came from. Water experts say testing before a major switch is a common and important best practice.

Ringler's review also confirmed that Michigan's Department of Environmental Quality made mistakes when it applied the federal Lead and Copper Rule to the Flint River switch.

MDEQ staffers treated the switch to the river as a new water source, not a new water system. They mistakenly believed that two 6-month testing periods were needed to determine if corrosion control treatment was required.

Assuming the DEQ's flawed method of applying the Lead and Copper Rule, the report notes the DEQ should have notified Flint in March of 2015 that it would need to start corrosion control treatment to keep lead levels in the water lower. But the MDEQ didn't do that until August 2015, after the second testing period was finished.

The review notes MDEQ staff did not ask the federal Environmental Protection Agency how to properly apply the Lead and Copper Rule in the case of Flint's switch to the river. "DEQ believed it had appropriately applied the LCR requirements of a large water system" based on past experience.

Based on the review of federal and state rules, and a clarifying memo from the EPA, Ringler writes, "We believe that corrosion control treatment should have been maintained."

When the EPA first asked the MDEQ if Flint was using corrosion control treatment, state officials said it was. But later, it wrote that Flint was not using such treatment. The A uditor General's investigation shows this was a misunderstanding.

"Based on our review of this and other e-mails, we have no specific reason to believe that MDEQ willfully misrepresented the information to the EPA," Ringler wrote. "We did not note any instances of major infractions (i.e., intentional disregard of policies, laws, regulations or specific directions) committed by DEQ staff during the course of our review."

"What the intent was, whether it was purposeful or not, isn't as important to me as the glaring systematic problems that we've seen," State Senator Jim Ananich said.

Ananich says it's alarming no one within MDEQ seemed to see there was a lead problem, despite numerous red flags. He says the report shows the state bears responsibility to help Flint children who were exposed to lead in drinking water.

MDEQ spokesman Brad Wurfel declined an interview, but said in a written statement that the department agreed with the Auditor General's findings.

"The findings align with our internal department review. We appreciate the Auditor General's work to provide a fair and well considered look at some key issues," Wurfel wrote.

The report also found that it was appropriate that the state invalidated two water samples that tested high for lead. The EPA has not commented on this, because it is still conducting its own investigation.

The report also confirmed that the DEQ relied on information from Flint officials to show that all the homes it sampled were the ones it was supposed to; homes with lead distribution pipes.

Flint is still working to figure out exactly where those homes are.

But the auditor notes that Michigan's Department of Environmental Quality could've verified the information Flint provided to make sure the samples and the tests were in compliance with federal rules.

The state didn't ask for that information until last month, long after Flint officials admitted they didn't know where those lead pipes are, and reporters asked why the state hadn't followed up.

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To: Arcaute, Francisco[Arcaute.Francisco@epa.gov]; Hedman, Susan[hedman.susan@epa.gov]; Kaplan, Robert[kaplan.robert@epa.gov]; Hyde, Tinka[hyde.tinka@epa.gov]
Cc: Rowan, Anne[rowan.anne@epa.gov]; Kelley, Jeff[kelley.jeff@epa.gov]; Cassell, Peter[cassell.peter@epa.gov]; Cannon, Phillippa[Cannon.Phillippa@epa.gov]; Singer, Joshua[Singer.Joshua@epa.gov]; Poy, Thomas[poy.thomas@epa.gov]; Harrison, Melissa[Harrison.Melissa@epa.gov]; Reshkin, Karen[Reshkin.Karen@epa.gov]; Beckmann, Ronna Erin[beckmann.ronna@epa.gov]; Deamer, Eileen[deamer.eileen@epa.gov]; Fortin, Denise[Fortin.Denise@epa.gov]; Nowotarski, Allison[nowotarski.allison@epa.gov]; Loop, Travis[Loop.Travis@epa.gov]; Abrams, Dan[Abrams.Dan@epa.gov]; Grantham, Nancy[Grantham.Nancy@epa.gov]
From: Purchia, Liz
Sent: Tue 12/29/2015 9:07:26 PM
Subject: RE: Flint Water Clips, Dec. 29, 2015

BREAKING: DEQ Director Resigns Over Flint Water Crisis

Gov. Rick Snyder apologizes to Flint, pledges to help officials address public health crisis surrounding dangerous lead levels in water.

West Bloomfield, MI

By **BETH DALBEY** (Patch Staff) December 29, 2015

LANSING, MI – The director of the Michigan Department of Environmental Quality has resigned over the Flint water debacle, Gov. Rick Snyder said Tuesday.

DEQ Director Dan Wyant “has offered his resignation, and I’ve determined that it’s appropriate to accept it,” Snyder said in a statement.

The governor said he will be “making other personnel changes at MDEQ” as well.

State officials encouraged officials in Flint, where the mayor has asked for federal emergency relief to deal with a public health crisis resulting from high lead levels in water, to understate the results, according to e-mails obtained by the American Civil Liberties Union of Michigan and Marc Edwards, a Virginia Tech researcher who helped bring the water crisis to the forefront.

After the testing revealed dangerous lead levels in June, the Michigan Department of Environmental Quality wrongly indicated the water was safe to drink, according to the e-mails.

Related

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- Pediatrician Exposed Crisis of Lead in Flint Water
- State Delayed Action on Lead in Flint Water

The financially struggling city of Flint turned off the taps to water from Detroit, which gets its supply from Lake Huron, and switched to water from the Flint River in a money-saving move in 2014. Flint was under the control of a state-appointed emergency manager at the time.

The e-mail trail suggests state officials were aware of the impending water crisis well ahead of a study released in September by West Bloomfield pediatrician Dr. Mona Hanna-Attisha, pediatric residency director at Flint's Hurley Children's Hospital.

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The study showed the proportion of children with above-average levels of lead in their blood had nearly doubled since the city began getting its water from the Flint River.

The consequences of lead poisoning are serious and long lasting.

Lead's trail is virtually invisible, discoverable only through finger-prick blood test or when children begin showing signs of learning disabilities, reduced IQ, behavioral changes, anti-social behavior, anemia, hypertension, renal impairment, immunotoxicity and a plethora of other neurological and behavioral problems that are thought to be irreversible, according to the World Health Organization.

The e-mails showed that DEQ district coordinator Stephen Busch told the U.S. Environmental Protection Agency in February that Flint had "an optimized corrosion control program" to prevent lead from getting into the water system when, in fact, the city had no corrosion control program at all.

In his statement, the governor apologized to the residents of Flint and to residents of other cities with aging infrastructure.

"I want the Flint community to know how very sorry I am that this has happened. A nd I want all Michigan citizens to know that we will learn from this experience, because Flint is not the only city that has an aging infrastructure," he wrote.

Changes in leadership and staff aren't enough, Snyder said. The statement continued:

"I understand there can be disagreements within the scientific community. That is why I have directed both the departments of Environmental Quality and Health and Human Services to invite every external scientist who has worked on this issue to be our partners in helping us improve Flint water.

"Let's share research on water and blood lead level testing so we can arrive at accurate and mutually supported conclusions," he wrote. "Together, we should work to affirm that we're using the very best testing protocols to ensure Flint residents have safe drinking water and that we're taking steps to protect their health over the short and long term.

"I know many Flint citizens are angry and want more than an apology. That's why I'm taking the actions today to ensure a culture of openness and trust. We've already allocated $10 million to test the water, distribute water filters, and help in other ways. Last week, I called Flint Mayor Karen Weaver, and we're going to meet soon to discuss other ways the state can offer assistance.

"These are only initial steps — we fully expect to take more actions following the recommendations of our task force. When it comes to matters of health and quality of life, we're committed to doing everything we can to protect the well-being of our citizens."

From: Arcaute, Francisco
Sent: Tuesday, December 29, 2015 10:32 AM
To: Hedman, Susan <hedman.susan@epa.gov>; Kaplan, Robert <kaplan.robert@epa.gov>; Hyde, Tinka <hyde.tinka@epa.gov>
Cc: Rowan, Anne <rowan.anne@epa.gov>; Kelley, Jeff <kelley.jeff@epa.gov>; Cassell, Peter

<cassell.peter@epa.gov>; Cannon, Phillippa <Cannon.Phillippa@epa.gov>; Singer, Joshua <Singer.Joshua@epa.gov>; Poy, Thomas <poy.thomas@epa.gov>; Purchia, Liz <Purchia.Liz@epa.gov>; Harrison, Melissa <Harrison.Melissa@epa.gov>; Reshkin, Karen <Reshkin.Karen@epa.gov>; Beckmann, Ronna Erin <beckmann.ronna@epa.gov>; Deamer, Eileen <deamer.eileen@epa.gov>; Fortin, Denise <Fortin.Denise@epa.gov>; Nowotarski, Allison <nowotarski.allison@epa.gov>; Loop, Travis <Loop.Travis@epa.gov>; Abrams, Dan <Abrams.Dan@epa.gov>; Grantham, Nancy <Grantham.Nancy@epa.gov>; Arcaute, Francisco <Arcaute.Francisco@epa.gov>
Subject: Flint Water Clips, Dec. 29, 2015

FLINT DRINKING WATER CLIPS

US. EPA Region 5 – as prepared by Francisco Arcaute *(ORA/OEC/PA)* on DEC. 29, 2015

□□□□□□□□□ Auditor general findings set off Flint water debate (The Detroit News)

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http://www.detroitnews.com/story/news/politics/2015/12/28/michigan-auditor-general-flint-water-debate/77982594/

Auditor general findings set off Flint water debate

Jim Lynch, The Detroit News 3:37 p.m. EST December 28, 2015

Dr. Paul Chrenka and medical assistant Miranda Limberg give a water lead test to a child at their Flint clinic in November.(Photo: John M. Galloway / Detroit News)

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Findings compiled by Michigan's Office of the Auditor General have set off another debate about who is to blame for Flint's 18-month-long water crisis.

Two state lawmakers are blaming Flint's contaminated water on state environmental officials based on the auditor general's letter. A state spokesman, however, said the findings of state A uditor General Doug Ringler merely confirm what has already been reported.

The document, a set of answers to detailed questions from Senate Minority Leader Jim Ananich, D-Flint, and Rep. Sheldon Neeley, D-Flint, was released late last week. On Monday, Ananich and Sheldon charged state officials with being behind the 2014 decision to have Flint change the source of its drinking water to the Flint River from the Detroit Water and Sewerage Department's Lake Huron.

"This is another example of how the state failed, initially, and continues to fail, by not treating this situation like the emergency it is," Neeley said in a statement. "We need answers, we need action and we need them sooner rather than later."

In the letter, though, Ringler indicates that when Flint and the Detroit water system officials failed to reach an interim agreement on water supply after Flint decided to build its own water authority, “the City of Flint notified DEQ through a permit request of its intent to operate the Flint WTP (Water Treatment Plant) full time using the Flint River.”

While under the control of an emergency manager appointed by Gov. Rick Snyder, the city began drawing its drinking water from the Flint River in April 2014. The cost-saving move immediately led to complaints from residents about the taste, color and smell of the water coming from their taps.

In July, August and September, testing results began to paint a darker picture — children in certain areas of the city were beginning to show signs of lead contamination.

The city has since switched back to its previous water supplier, the Detroit water department. A task force is charged with figuring out how Flint’s water situation went wrong, including an examination of how corrosion controls were not used in bringing the river water into homes.

Corrosion controls, like phosphates, are added before water leaves the treatment plant to help coat pipelines to prevent lead from leaching in. Following the switch to the Flint River, no such corrosion controls were added. And many of the questions surrounding the problems in Flint center on who decided to omit corrosion controls.

For months, DEQ officials have been under the microscope for their handling of the issue. Some of the harshest criticism has come from those who believe state workers purposely misled the U.S. Environmental Protection Agency over whether corrosion controls were in use.

Critics point to a Feb. 27 email from a state employee to the federal agency contending that a corrosion control program was in place. The Auditor General’s report lays out the resulting situation.

■“It appears the EPA interpreted corrosion control program to mean that corrosion control treatment was in place.”

■“On April 23, 2015, the EPA again inquired as to what the Flint WTP was doing for corrosion control treatment.”

■“DEQ responded on April 24, 2015 that the Flint WTP was not practicing control treatment.”

“Based on our review of this and other emails, we have no specific reason to believe that DEQ willingly misrepresented the information to the EPA,” the report reads.

On Monday, Ananich contended the Auditor General findings put the blame on state officials.

“What’s clear is that corrosion control should have been used, and there are serious failings in our system that must be addressed,” Ananich said in a press release. He added that city officials voted in 2013 to switch to the Karegondi Water Authority — a new regional water supply system that is still under construction — but never addressed the issue of using the Flint River.

State environmental and health officials got a measure of support from the office of Snyder, a Republican.

“The letter from the Office of the Auditor General includes some criticisms, but also reflects that state officials were following accepted protocols, or in one case, an interpretation of the corrosion control program that the EPA later clarified,” said David Murray, the governor’s spokesman.

“But we need to do better in ensuring Flint residents have safe water and tracking children affected by elevated lead levels. We continue to work with the bipartisan task force that is reviewing all the actions at the state, local and federal level and is expected to offer recommendations in a month or so. Gov. Snyder is committed to working with Flint Mayor Weaver and officials on these issues.”

On Monday, DEQ Spokesman Brad Wurfel addressed the auditor general’s letter.

“The findings of the Auditor General are consistent with our findings at DEQ in our own internal review,” Wurfel said. “We appreciate their careful consideration of the issues they were asked to look at.”

JLynch@detroitnews.com

(313) 222-2034

Detroit News Staff Writer Chad Livengood contributed.

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http://www.mlive.com/news/flint/index.ssf/2015/12/auditors_report_says_corrosion.html

Auditor General's report says Flint water should have gotten corrosion control (MLive)

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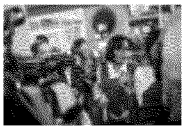

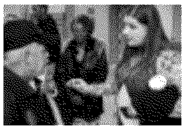

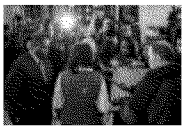

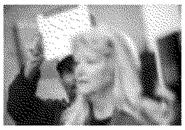

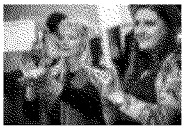

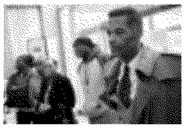

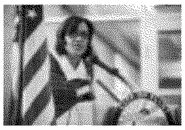

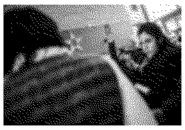

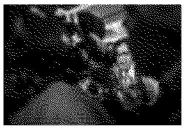

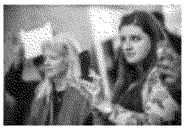

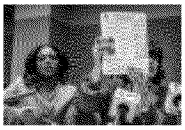

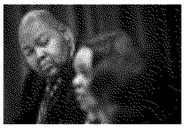

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A swarm of reporters surround Flint Mayor Karen Weaver to ask question after a news conference on Tuesday Dec. 15, 2015 at City Hall in Flint, as Weaver declares a state of emergency in Flint, saying the city needs federal help to deal with its lead in water crisis. "I am requesting that all things be done necessary to address this state of emergency declaration, effective immediately," Weaver told the City Council today, Dec. 14, where she initially made the declaration. "Do we meet the criteria (for a disaster area)? I don't know. I'm going to ask and let them tell us no." The new mayor asked that the Genesee County Board of Commissioners call a special meeting to take action to support her declaration, that it be forwarded to Gov. Rick Snyder, and potentially President Obama. Jake May | MLive.com

Jake May | jmay2@mlive.com

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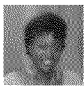By Jiquanda Johnson | jjohns16@mlive.com The Flint Journal
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on December 28, 2015 at 6:23 PM, updated December 28, 2015 at 6:44 PM

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Flint water

□□□□□□□□□ Michigan Gov. Rick Snyder, legislative leaders name biggest disappointments of 2015

□□□□□□□□□ Auditor General's report says Flint water should have gotten corrosion control

□□□□□□□□□ Gov. Snyder calls Flint water issue 'greatest challenge' during interview

□□□□□□□□□ Congressman calls for state water crisis health fund on Rachel Maddow show

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LANSING, MI -- A letter dated Dec. 23 from the Office of State Auditor General responding to a series of questions asked by Michigan Sen. Jim Ananich, D-Flint, in October made it clear that corrosion control should have been maintained during Flint's transition from Detroit water to Flint River water.

Jim Ananich, D-Flint, is Democratic Leader of the Michigan Senate.

Ananich said he asked for the audit to find out how Flint's residents were exposed to lead-tainted water.

"The Auditor General has provided an important piece of this puzzle and I'm sure the extended report they are working on will reveal additional information," Ananich said in a Dec. 28 press release. "What's clear is that corrosion control should have been used and there are serious failings in our system that must be addressed. Between the FOIA emails released recently and these findings, it's obvious that legislative oversight is the best way to see how all of these pieces fit together. I expect holding hearings to be high on the agenda when the Legislature returns."

Ananich's questions included whether corrosion control treatment should have been maintained when the city of Flint switched from Detroit to use the Flint River as its water supply in 2014 and who ultimately showed support for the switch.

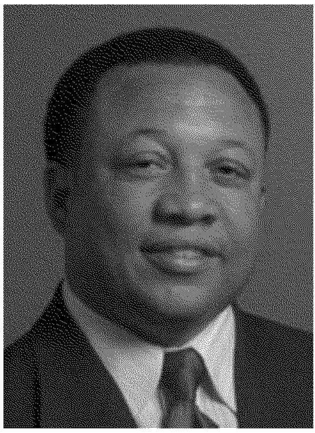
Ananich, along with State Rep. Sheldon Neeley, called for legislative hearings and has asked for a more aggressive response to Flint's water crisis. According to the press release, the two have worked with local and federal officials in securing more resources for safe drinking water for Flint residents.

Gov. Rick Snyder's Press secretary David Murray said the governor's office continues to work on the Flint water issues.

"The letter from the Office of the Auditor General includes some criticisms, but also reflects that state officials were following accepted protocols, or in one case, an interpretation of the corrosion control program that the EPA later clarified," Murray said in an email to The Flint Journal.

"But we need to do better in ensuring Flint residents have safe water and tracking children affected by elevated lead levels," he said. "We continue to work with the bipartisan task force that is reviewing all the actions at the state, local and federal level and is expected to offer recommendations in a month or so. Gov. Snyder is committed to working with Flint Mayor Weaver and officials on these issues.

"We appreciate the efforts of the Auditor General and will carefully consider all of the recommendations contained in the letter," Murray said.


State Rep. Sheldon Neeley*MLive.com File*

Neeley says action needs to take place.

"This is another example of how the state failed initially, and continues to fail by not treating this situation like the emergency it is," Neeley said. "We need answers, we need action, and we need them sooner rather than later."

The audit is still ongoing. After the findings, Ananich said, there was a decision to do a more extensive audit. He said after the more-detailed audit is finished, he is hoping to know how this happened to the city of Flint.

"I think it's pretty clear even from this initial report that there needs to be an acknowledgement that the state is responsible in a large part of what happened ... I think there should be accountability and what that looks like we won't know until things move forward. This initial audit shows that we really have an issue that needs to be solved. This helps created a sense of urgency that many of us in Flint have been calling for, for a long time."

The auditors wrote in their report that anti-corrosion measures should have been in place: "We believe that corrosion control treatment should have been maintained." Even so, the DEQ should have told Flint to start corrosion treatment after rising levels of lead were detected in the water, the report says.

Flint Mayor Karen Weaver says an investigation needs to be held on a local level.

"I'm really not surprised by the findings," Weaver said. "But I need to commend Sen. Ananich and State Rep. Neeley for pursing this issue. I would really hope that Flint City Council can do their own investigation and hearings to find out on a local level what happened to make sure this doesn't happen again and to make sure we don't have any gaps."

The report states that the Flint City Council did not vote to switch to Flint River water, as city leaders have claimed. In fact, the report does not clearly indicate who made that decision.

To view the auditor's report click -
http://www.audgen.michigan.gov/finalpdfs/15_16/l761032015.pdf

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http://michiganradio.org/post/independent-report-confirms-state-made-mistakes-not-intentional-ones-flint-water-crisis#stream/0

Independent report confirms state made mistakes, but not "intentional" ones in Flint water crisis

By Lindsey Smith · 15 hours ago

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src="http://michiganradio.org/sites/michigan/files/styles/default/public/201511/hospital.jpg" alt="Tap water in a Flint hospital on Oct. 16, 2015.">

Credit Joyce Zhu / Flintwaterstudy.org

Preliminary findings from Michigan's independent Auditor General give more details about the Flint water crisis.

In a letter to State Senator Jim Ananich, Auditor General Doug Ringler answers several key questions about the state's role in the decision to switch to the Flint River and how Michigan's Department of Environmental Quality dealt with those decisions.

Ringler's review confirms it was the state appointed emergency manager who made the decision to switch to the Flint River, not city leaders. It also confirmed that Detroit's water system made offers to keep Flint as a water customer, but that a different emergency manager rejected those offers.

The report says Flint's Water Treatment Plant was upgraded in the 1990s to treat Flint River water as a backup source in case of emergencies. But the city "did not test the water's effect on the distribution system at consumer tap locations."

The distribution system is where the lead in people's tap water came from. Water experts say testing before a major switch is a common and important best practice.

Ringler's review also confirmed that Michigan's Department of Environmental Quality made mistakes when it applied the federal Lead and Copper Rule to the Flint River switch.

MDEQ staffers treated the switch to the river as a new water source, not a new water system. They mistakenly believed that two 6-month testing periods were needed to determine if corrosion control treatment was required.

Assuming the DEQ's flawed method of applying the Lead and Copper Rule, the report notes the DEQ should have notified Flint in March of 2015 that it would need to start corrosion control treatment to keep lead levels in the water lower. But the MDEQ didn't do that until August 2015, after the second testing period was finished.

The review notes MDEQ staff did not ask the federal Environmental Protection Agency how to properly apply the Lead and Copper Rule in the case of Flint's switch to the river. "DEQ believed it had appropriately applied the LCR requirements of a large water system" based on past experience.

Based on the review of federal and state rules, and a clarifying memo from the EPA, Ringler writes, "We believe that corrosion control treatment should have been maintained."

When the EPA first asked the MDEQ if Flint was using corrosion control treatment, state officials said it was. But later, it wrote that Flint was not using such treatment. The A uditor General's investigation shows this was a misunderstanding.

"Based on our review of this and other e-mails, we have no specific reason to believe that MDEQ willfully misrepresented the information to the EPA," Ringler wrote. "We did not note any instances of major infractions (i.e., intentional disregard of policies, laws, regulations or specific directions) committed by DEQ staff during the course of our review."

"What the intent was, whether it was purposeful or not, isn't as important to me as the glaring systematic problems that we've seen," State Senator Jim Ananich said.

Ananich says it's alarming no one within MDEQ seemed to see there was a lead problem, despite numerous red flags. He says the report shows the state bears responsibility to help Flint children who were exposed to lead in drinking water.

MDEQ spokesman Brad Wurfel declined an interview, but said in a written statement that the department agreed with the Auditor General's findings.

"The findings align with our internal department review. We appreciate the Auditor General's work to provide a fair and well considered look at some key issues," Wurfel wrote.

The report also found that it was appropriate that the state invalidated two water samples that tested high for lead. The EPA has not commented on this, because it is still conducting its own investigation.

The report also confirmed that the DEQ relied on information from Flint officials to show that all the homes it sampled were the ones it was supposed to; homes with lead distribution pipes.

Flint is still working to figure out exactly where those homes are.

But the auditor notes that Michigan's Department of Environmental Quality could've verified the information Flint provided to make sure the samples and the tests were in compliance with federal rules.

The state didn't ask for that information until last month, long after Flint officials admitted they didn't know where those lead pipes are, and reporters asked why the state hadn't followed up.

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To: Poy, Thomas[poy.thomas@epa.gov]; Baltazar, Debbie[baltazar.debbie@epa.gov]; Marquardt, Steve[marquardt.steve@epa.gov]
From: Deamer, Eileen
Sent: Tue 12/29/2015 9:36:24 PM
Subject: FW: Flint Water Clips, Dec. 29, 2015

From: Purchia, Liz
Sent: Tuesday, December 29, 2015 3:07 PM
To: Arcaute, Francisco <Arcaute.Francisco@epa.gov>; Hedman, Susan <hedman.susan@epa.gov>; Kaplan, Robert <kaplan.robert@epa.gov>; Hyde, Tinka <hyde.tinka@epa.gov>
Cc: Rowan, Anne <rowan.anne@epa.gov>; Kelley, Jeff <kelley.jeff@epa.gov>; Cassell, Peter <cassell.peter@epa.gov>; Cannon, Phillippa <Cannon.Phillippa@epa.gov>; Singer, Joshua <Singer.Joshua@epa.gov>; Poy, Thomas <poy.thomas@epa.gov>; Harrison, Melissa <Harrison.Melissa@epa.gov>; Reshkin, Karen <Reshkin.Karen@epa.gov>; Beckmann, Ronna Erin <beckmann.ronna@epa.gov>; Deamer, Eileen <deamer.eileen@epa.gov>; Fortin, Denise <Fortin.Denise@epa.gov>; Nowotarski, Allison <nowotarski.allison@epa.gov>; Loop, Travis <Loop.Travis@epa.gov>; Abrams, Dan <Abrams.Dan@epa.gov>; Grantham, Nancy <Grantham.Nancy@epa.gov>
Subject: RE: Flint Water Clips, Dec. 29, 2015

BREAKING: DEQ Director Resigns Over Flint Water Crisis

Gov. Rick Snyder apologizes to Flint, pledges to help officials address public health crisis surrounding dangerous lead levels in water.

West Bloomfield, MI

By **BETH DALBEY** (Patch Staff) December 29, 2015

LANSING, MI – The director of the Michigan Department of Environmental Quality has resigned over the Flint water debacle, Gov. Rick Snyder said Tuesday.

DEQ Director Dan Wyant "has offered his resignation, and I've determined that it's appropriate to accept it," Snyder said in a statement.

The governor said he will be "making other personnel changes at MDEQ" as well.

State officials encouraged officials in Flint, where the mayor has asked for federal emergency relief to deal with a public health crisis resulting from high lead levels in water, to understate the results, according to e-mails obtained by the American Civil Liberties Union of Michigan and Marc Edwards, a Virginia Tech researcher who helped bring the water crisis to the forefront.

After the testing revealed dangerous lead levels in June, the Michigan Department of Environmental Quality wrongly indicated the water was safe to drink, according to the e-mails.

Related

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- Pediatrician Exposed Crisis of Lead in Flint Water
- State Delayed Action on Lead in Flint Water

The financially struggling city of Flint turned off the taps to water from Detroit, which gets its supply from Lake Huron, and switched to water from the Flint River in a money-saving move in 2014. Flint was under the control of a state-appointed emergency manager at the time.

The e-mail trail suggests state officials were aware of the impending water crisis well ahead of a study released in September by West Bloomfield pediatrician Dr. Mona Hanna-Attisha, pediatric residency director at Flint's Hurley Children's Hospital.

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The study showed the proportion of children with above-average levels of lead in their blood had nearly doubled since the city began getting its water from the Flint River.

The consequences of lead poisoning are serious and long lasting.

Lead's trail is virtually invisible, discoverable only through finger-prick blood test or when children begin showing signs of learning disabilities, reduced IQ, behavioral changes, anti-social behavior, anemia, hypertension, renal impairment, immunotoxicity and a plethora of other neurological and behavioral problems that are thought to be irreversible, according to the World Health Organization.

The e-mails showed that DEQ district coordinator Stephen Busch told the U.S. Environmental Protection Agency in February that Flint had "an optimized corrosion control program" to prevent lead from getting into the water system when, in fact, the city had no corrosion control program at all.

In his statement, the governor apologized to the residents of Flint and to residents of other cities with aging infrastructure.

"I want the Flint community to know how very sorry I am that this has happened. A nd I want all Michigan citizens to know that we will learn from this experience, because Flint is not the only city that has an aging infrastructure," he wrote.

Changes in leadership and staff aren't enough, Snyder said. The statement continued:

"I understand there can be disagreements within the scientific community. That is why I have directed both the departments of Environmental Quality and Health and Human Services to invite every external scientist who has worked on this issue to be our partners in helping us improve Flint water.

"Let's share research on water and blood lead level testing so we can arrive at accurate and mutually supported conclusions," he wrote. "Together, we should work to affirm that we're using the very best testing protocols to ensure Flint residents have safe drinking water and that we're taking steps to protect their health over the short and long term.

"I know many Flint citizens are angry and want more than an apology. That's why I'm taking the actions today to ensure a culture of openness and trust. We've already allocated $10 million to test the water, distribute water filters, and help in other ways. Last week, I called Flint Mayor Karen Weaver, and we're going to meet soon to discuss other ways the state can offer assistance.

"These are only initial steps — we fully expect to take more actions following the recommendations of our task force. When it comes to matters of health and quality of life, we're committed to doing everything we can to protect the well-being of our citizens."

From: Arcaute, Francisco
Sent: Tuesday, December 29, 2015 10:32 AM
To: Hedman, Susan <hedman.susan@epa.gov>; Kaplan, Robert <kaplan.robert@epa.gov>; Hyde, Tinka <hyde.tinka@epa.gov>
Cc: Rowan, Anne <rowan.anne@epa.gov>; Kelley, Jeff <kelley.jeff@epa.gov>; Cassell, Peter <cassell.peter@epa.gov>; Cannon, Phillippa <Cannon.Phillippa@epa.gov>; Singer, Joshua <Singer.Joshua@epa.gov>; Poy, Thomas <poy.thomas@epa.gov>; Purchia, Liz <Purchia.Liz@epa.gov>; Harrison, Melissa <Harrison.Melissa@epa.gov>; Reshkin, Karen <Reshkin.Karen@epa.gov>; Beckmann, Ronna Erin <beckmann.ronna@epa.gov>; Deamer, Eileen <deamer.eileen@epa.gov>; Fortin, Denise <Fortin.Denise@epa.gov>; Nowotarski, Allison <nowotarski.allison@epa.gov>; Loop, Travis <Loop.Travis@epa.gov>; Abrams, Dan <Abrams.Dan@epa.gov>; Grantham, Nancy <Grantham.Nancy@epa.gov>; Arcaute, Francisco <Arcaute.Francisco@epa.gov>
Subject: Flint Water Clips, Dec. 29, 2015

FLINT DRINKING WATER CLIPS

US. EPA Region 5 – as prepared by Francisco Arcaute *(ORA/OEC/PA)* on DEC. 29, 2015

□□□□□□□□□ Auditor general findings set off Flint water debate (The Detroit News)

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□□□□□□□□□ Independent report confirms state made mistakes, but not "intentional" ones in Flint water crisis (Michigan Radio)

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http://www.detroitnews.com/story/news/politics/2015/12/28/michigan-auditor-general-flint-water-debate/77982594/

Auditor general findings set off Flint water debate

Jim Lynch, The Detroit News 3:37 p.m. EST December 28, 2015

Dr. Paul Chrenka and medical assistant Miranda Limberg give a water lead test to a child at their Flint clinic in November.(Photo: John M. Galloway / Detroit News)

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Findings compiled by Michigan's Office of the Auditor General have set off another debate about who is to blame for Flint's 18-month-long water crisis.

Two state lawmakers are blaming Flint's contaminated water on state environmental officials based on the auditor general's letter. A state spokesman, however, said the findings of state A uditor General Doug Ringler merely confirm what has already been reported.

The document, a set of answers to detailed questions from Senate Minority Leader Jim Ananich, D-Flint, and Rep. Sheldon Neeley, D-Flint, was released late last week. On Monday, Ananich and Sheldon charged state officials with being behind the 2014 decision to have Flint change the source of its drinking water to the Flint River from the Detroit Water and Sewerage Department's Lake Huron.

"This is another example of how the state failed, initially, and continues to fail, by not treating this situation like the emergency it is," Neeley said in a statement. "We need answers, we need action and we need them sooner rather than later."

In the letter, though, Ringler indicates that when Flint and the Detroit water system officials failed to reach an interim agreement on water supply after Flint decided to build its own water authority, "the City of Flint notified DEQ through a permit request of its intent to operate the Flint WTP (Water Treatment Plant) full time using the Flint River."

While under the control of an emergency manager appointed by Gov. Rick Snyder, the city began drawing its drinking water from the Flint River in April 2014. The cost-saving move immediately led to complaints from residents about the taste, color and smell of the water coming from their taps.

In July, August and September, testing results began to paint a darker picture — children in certain areas of the city were beginning to show signs of lead contamination.

The city has since switched back to its previous water supplier, the Detroit water department. A task force is charged with figuring out how Flint's water situation went wrong, including an examination of how corrosion controls were not used in bringing the river water into homes.

Corrosion controls, like phosphates, are added before water leaves the treatment plant to help coat pipelines to prevent lead from leaching in. Following the switch to the Flint River, no such corrosion controls were added. And many of the questions surrounding the problems in Flint center on who decided to omit corrosion controls.

For months, DEQ officials have been under the microscope for their handling of the issue. Some of the harshest criticism has come from those who believe state workers purposely misled the U.S. Environmental Protection Agency over whether corrosion controls were in use.

Critics point to a Feb. 27 email from a state employee to the federal agency contending that a corrosion control program was in place. The Auditor General's report lays out the resulting situation.

■"It appears the EPA interpreted corrosion control program to mean that corrosion control treatment was in place."

■"On April 23, 2015, the EPA again inquired as to what the Flint WTP was doing for corrosion control treatment."

■"DEQ responded on April 24, 2015 that the Flint WTP was not practicing control treatment."

"Based on our review of this and other emails, we have no specific reason to believe that DEQ willingly misrepresented the information to the EPA," the report reads.

On Monday, Ananich contended the Auditor General findings put the blame on state officials.

“What’s clear is that corrosion control should have been used, and there are serious failings in our system that must be addressed,” Ananich said in a press release. He added that city officials voted in 2013 to switch to the Karegondi Water Authority — a new regional water supply system that is still under construction — but never addressed the issue of using the Flint River.

State environmental and health officials got a measure of support from the office of Snyder, a Republican.

“The letter from the Office of the Auditor General includes some criticisms, but also reflects that state officials were following accepted protocols, or in one case, an interpretation of the corrosion control program that the EPA later clarified,” said David Murray, the governor’s spokesman.

“But we need to do better in ensuring Flint residents have safe water and tracking children affected by elevated lead levels. We continue to work with the bipartisan task force that is reviewing all the actions at the state, local and federal level and is expected to offer recommendations in a month or so. Gov. Snyder is committed to working with Flint Mayor Weaver and officials on these issues.”

On Monday, DEQ Spokesman Brad Wurfel addressed the auditor general’s letter.

“The findings of the Auditor General are consistent with our findings at DEQ in our own internal review,” Wurfel said. “We appreciate their careful consideration of the issues they were asked to look at.”

JLynch@detroitnews.com

(313) 222-2034

Detroit News Staff Writer Chad Livengood contributed.

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http://www.mlive.com/news/flint/index.ssf/2015/12/auditors_report_says_corrosion.html

Auditor General's report says Flint water should have gotten corrosion control (MLive)

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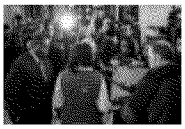

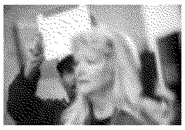

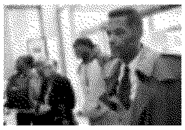

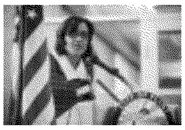

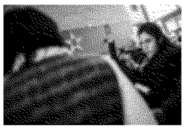

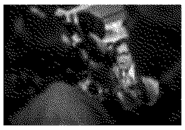

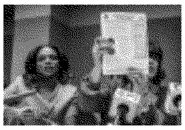

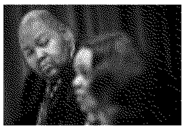

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Flint officials say they're [illegible]

A swarm of reporters surround Flint Mayor Karen Weaver to ask question after a news conference on Tuesday Dec. 15, 2015 at City Hall in Flint, as Weaver declares a state of emergency in Flint, saying the city needs federal help to deal with its lead in water crisis. "I am requesting that all things be done necessary to address this state of emergency declaration, effective immediately," Weaver told the City Council today, Dec. 14, where she initially made the declaration. "Do we meet the criteria (for a disaster area)? I don't know. I'm going to ask and let them tell us no." The new mayor asked that the Genesee County Board of Commissioners call a special meeting to take action to support her declaration, that it be forwarded to Gov. Rick Snyder, and potentially President Obama. Jake May | MLive.com

Jake May | jmay2@mlive.com

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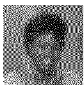By Jiquanda Johnson | jjohns16@mlive.com The Flint Journal
Follow on Twitter
on December 28, 2015 at 6:23 PM, updated December 28, 2015 at 6:44 PM

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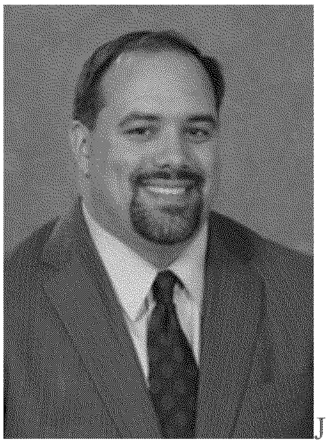
Jim Ananich, D-Flint, is Democratic Leader of the Michigan Senate.

Ananich said he asked for the audit to find out how Flint's residents were exposed to lead-tainted water.

"The Auditor General has provided an important piece of this puzzle and I'm sure the extended report they are working on will reveal additional information," Ananich said in a Dec. 28 press release. "What's clear is that corrosion control should have been used and there are serious failings in our system that must be addressed. Between the FOIA emails released recently and these findings, it's obvious that legislative oversight is the best way to see how all of these pieces fit together. I expect holding hearings to be high on the agenda when the Legislature returns."

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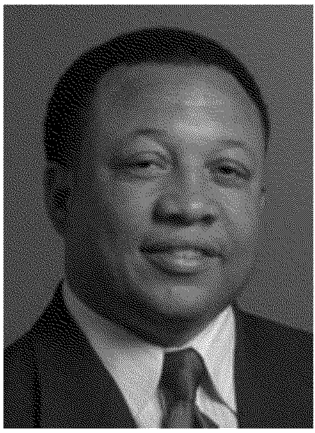
Ananich, along with State Rep. Sheldon Neeley, called for legislative hearings and has asked for a more aggressive response to Flint's water crisis. According to the press release, the two have worked with local and federal officials in securing more resources for safe drinking water for Flint residents.

Gov. Rick Snyder's Press secretary David Murray said the governor's office continues to work on the Flint water issues.

"The letter from the Office of the Auditor General includes some criticisms, but also reflects that state officials were following accepted protocols, or in one case, an interpretation of the corrosion control program that the EPA later clarified," Murray said in an email to The Flint Journal.

"But we need to do better in ensuring Flint residents have safe water and tracking children affected by elevated lead levels," he said. "We continue to work with the bipartisan task force that is reviewing all the actions at the state, local and federal level and is expected to offer recommendations in a month or so. Gov. Snyder is committed to working with Flint Mayor Weaver and officials on these issues.

"We appreciate the efforts of the Auditor General and will carefully consider all of the recommendations contained in the letter," Murray said.


State Rep. Sheldon Neeley*MLive.com File*

Neeley says action needs to take place.

"This is another example of how the state failed initially, and continues to fail by not treating this situation like the emergency it is," Neeley said. "We need answers, we need action, and we need them sooner rather than later."

The audit is still ongoing. After the findings, Ananich said, there was a decision to do a more extensive audit. He said after the more-detailed audit is finished, he is hoping to know how this happened to the city of Flint.

"I think it's pretty clear even from this initial report that there needs to be an acknowledgement that the state is responsible in a large part of what happened ... I think there should be accountability and what that looks like we won't know until things move forward. This initial audit shows that we really have an issue that needs to be solved. This helps created a sense of urgency that many of us in Flint have been calling for, for a long time."

The auditors wrote in their report that anti-corrosion measures should have been in place: "We believe that corrosion control treatment should have been maintained." Even so, the DEQ should have told Flint to start corrosion treatment after rising levels of lead were detected in the water, the report says.

Flint Mayor Karen Weaver says an investigation needs to be held on a local level.

"I'm really not surprised by the findings," Weaver said. "But I need to commend Sen. Ananich and State Rep. Neeley for pursing this issue. I would really hope that Flint City Council can do their own investigation and hearings to find out on a local level what happened to make sure this doesn't happen again and to make sure we don't have any gaps."

The report states that the Flint City Council did not vote to switch to Flint River water, as city leaders have claimed. In fact, the report does not clearly indicate who made that decision.

To view the auditor's report click -
http://www.audgen.michigan.gov/finalpdfs/15_16/1761032015.pdf

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http://michiganradio.org/post/independent-report-confirms-state-made-mistakes-not-intentional-ones-flint-water-crisis#stream/0

Independent report confirms state made mistakes, but not “intentional” ones in Flint water crisis

By Lindsey Smith · 15 hours ago

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src="http://michiganradio.org/sites/michigan/files/styles/default/public/201511/hospital.jpg" alt="Tap water in a Flint hospital on Oct. 16, 2015.">

Credit Joyce Zhu / Flintwaterstudy.org

Preliminary findings from Michigan's independent Auditor General give more details about the Flint water crisis.

In a letter to State Senator Jim Ananich, Auditor General Doug Ringler answers several key questions about the state's role in the decision to switch to the Flint River and how Michigan's Department of Environmental Quality dealt with those decisions.

Ringler's review confirms it was the state appointed emergency manager who made the decision to switch to the Flint River, not city leaders. It also confirmed that Detroit's water system made offers to keep Flint as a water customer, but that a different emergency manager rejected those offers.

The report says Flint's Water Treatment Plant was upgraded in the 1990s to treat Flint River water as a backup source in case of emergencies. But the city "did not test the water's effect on the distribution system at consumer tap locations."

The distribution system is where the lead in people's tap water came from. Water experts say testing before a major switch is a common and important best practice.

Ringler's review also confirmed that Michigan's Department of Environmental Quality made mistakes when it applied the federal Lead and Copper Rule to the Flint River switch.

MDEQ staffers treated the switch to the river as a new water source, not a new water system. They mistakenly believed that two 6-month testing periods were needed to determine if corrosion control treatment was required.

Assuming the DEQ's flawed method of applying the Lead and Copper Rule, the report notes the DEQ should have notified Flint in March of 2015 that it would need to start corrosion control treatment to keep lead levels in the water lower. But the MDEQ didn't do that until August 2015, after the second testing period was finished.

The review notes MDEQ staff did not ask the federal Environmental Protection Agency how to properly apply the Lead and Copper Rule in the case of Flint's switch to the river. "DEQ believed it had appropriately applied the LCR requirements of a large water system" based on past experience.

Based on the review of federal and state rules, and a clarifying memo from the EPA, Ringler writes, "We believe that corrosion control treatment should have been maintained."

When the EPA first asked the MDEQ if Flint was using corrosion control treatment, state officials said it was. But later, it wrote that Flint was not using such treatment. The A uditor General's investigation shows this was a misunderstanding.

"Based on our review of this and other e-mails, we have no specific reason to believe that MDEQ willfully misrepresented the information to the EPA," Ringler wrote. "We did not note any instances of major infractions (i.e., intentional disregard of policies, laws, regulations or specific directions) committed by DEQ staff during the course of our review."

"What the intent was, whether it was purposeful or not, isn't as important to me as the glaring systematic problems that we've seen," State Senator Jim Ananich said.

Ananich says it's alarming no one within MDEQ seemed to see there was a lead problem, despite numerous red flags. He says the report shows the state bears responsibility to help Flint children who were exposed to lead in drinking water.

MDEQ spokesman Brad Wurfel declined an interview, but said in a written statement that the department agreed with the Auditor General's findings.

"The findings align with our internal department review. We appreciate the Auditor General's work to provide a fair and well considered look at some key issues," Wurfel wrote.

The report also found that it was appropriate that the state invalidated two water samples that tested high for lead. The EPA has not commented on this, because it is still conducting its own investigation.

The report also confirmed that the DEQ relied on information from Flint officials to show that all the homes it sampled were the ones it was supposed to; homes with lead distribution pipes.

Flint is still working to figure out exactly where those homes are.

But the auditor notes that Michigan's Department of Environmental Quality could've verified the information Flint provided to make sure the samples and the tests were in compliance with federal rules.

The state didn't ask for that information until last month, long after Flint officials admitted they didn't know where those lead pipes are, and reporters asked why the state hadn't followed up.

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To: Deltoral, Miguel[deltoral.miguel@epa.gov]; Harris, Kimberly[harris.kimberly@epa.gov]; Bosscher, Valerie[bosscher.valerie@epa.gov]; Poy, Thomas[poy.thomas@epa.gov]; Shoven, Heather[shoven.heather@epa.gov]; Crooks, Jennifer[crooks.jennifer@epa.gov]; Kuefler, Janet[kuefler.janet@epa.gov]; Suero, Maryann[suero.maryann@epa.gov]; Master, Edward[master.edward@epa.gov]; Schock, Michael[Schock.Michael@epa.gov]; Lytle, Darren[Lytle.Darren@epa.gov]; Kempic, Jeffrey[Kempic.Jeffrey@epa.gov]; Moriarty, Edward[Moriarty.EdwardJ@epa.gov]; Viveiros, Edward[Viveiros.Edward@epa.gov]; Banks, Victoria[Banks.Victoria@epa.gov]; Donahue, Lisa[Donahue.Lisa@epa.gov]; Rizzo, George[Rizzo.George@epa.gov]; King, Carol[King.Carol@epa.gov]
From: Porter, Andrea
Sent: Wed 12/30/2015 2:06:02 PM
Subject: RE: Latest Flint Articles --> links added to sharepoint site

Hi All,

We continue to add links to these articles to our Sharepoint site, here:

Go to Flint References and News

If you need access to the site, just let me or Heather Shoven know.

Thanks,

Andrea Porter

Environmental Engineer

Ground Water & Drinking Water Branch

U.S. EPA, Region 5 (WG-15J)

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Chicago, IL 60604

Phone: 312-886-4427

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-----Original Message-----
From: Deltoral, Miguel
Sent: Wednesday, December 30, 2015 4:01 AM
To: Harris, Kimberly <harris.kimberly@epa.gov>; Bosscher, Valerie <bosscher.valerie@epa.gov>; Poy, Thomas <poy.thomas@epa.gov>; Shoven, Heather <shoven.heather@epa.gov>; Crooks, Jennifer <crooks.jennifer@epa.gov>; Porter, Andrea <porter.andrea@epa.gov>; Kuefler, Janet <kuefler.janet@epa.gov>; Suero, Maryann <suero.maryann@epa.gov>; Master, Edward <master.edward@epa.gov>; Schock, Michael <Schock.Michael@epa.gov>; Lytle, Darren <Lytle.Darren@epa.gov>; Kempic, Jeffrey <Kempic.Jeffrey@epa.gov>; Moriarty, Edward <Moriarty.EdwardJ@epa.gov>; Viveiros, Edward <Viveiros.Edward@epa.gov>; Banks, Victoria <Banks.Victoria@epa.gov>; Donahue, Lisa <Donahue.Lisa@epa.gov>; Rizzo, George <Rizzo.George@epa.gov>; King, Carol <King.Carol@epa.gov>
Subject: Latest Flint Articles

December 29, 2015

[Detroit Free Press]

Snyder apologizes, Wyant resigns in Flint water crisis
http://www.freep.com/story/news/local/michigan/2015/12/29/deq-director-wyant-resigns-over-flint-water-crisis/78027052/

[Detroit News]

Flint water report prompts apologies, resignations
http://www.detroitnews.com/story/news/politics/2015/12/29/deq-director-wyant-resigns-due-flint-water-crisis/78028616/

[ABC News]

Michigan Regulator Resigns Amid Flint's Lead-in-Water Crisis

http://abcnews.go.com/Politics/wireStory/michigan-official-resigns-amid-flint-water-issue-

35996502

[MSNBC]

Michigan governor apologizes for Flint water

http://www.msnbc.com/rachel-maddow-show/watch/michigan-governor-apologizes-for-flint-water-593269827585

[Huffington Post]

Michigan Gov. Rick Snyder Apologizes For Flint's Water Crisis
http://www.huffingtonpost.com/entry/rick-snyder-flint-water-lead-poisoning_56830314e4b014efe0d9814f

[RT News]

'Toxic stress': Max blood lead levels in Flint children 7 times higher than CDC guidelines – doctor https://www.rt.com/usa/327363-flint-children-blood-lead-water/

[m-live]

Gov. Rick Snyder says he's sorry for Flint's lead-in-water crisis
http://www.mlive.com/news/flint/index.ssf/2015/12/gov_snyder_says_hes_sorry_for.html

[m-live]

Director Dan Wyant resigns after task force blasts MDEQ over Flint water crisis
http://www.mlive.com/lansing-news/index.ssf/2015/12/deq_director_dan_wyant_resigns.html

[m-live]

Gov. Rick Snyder still doesn't get it when it comes to Flint water crisis
http://www.mlive.com/news/flint/index.ssf/2015/12/gov_rick_snyder_still_doesnt_g.html

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Cc: Kelley, Jeff[kelley.jeff@epa.gov]; Rowan, Anne[rowan.anne@epa.gov]; Beckmann, Ronna Erin[beckmann.ronna@epa.gov]; Harrison, Melissa[Harrison.Melissa@epa.gov]; Abrams, Dan[Abrams.Dan@epa.gov]; Poy, Thomas[poy.thomas@epa.gov]; Singer, Joshua[Singer.Joshua@epa.gov]; Arcaute, Francisco[Arcaute.Francisco@epa.gov]; Cannon, Phillippa[Cannon.Phillippa@epa.gov]; Deamer, Eileen[deamer.eileen@epa.gov]; Fortin, Denise[Fortin.Denise@epa.gov]; Nowotarski, Allison[nowotarski.allison@epa.gov]; Reshkin, Karen[Reshkin.Karen@epa.gov]; Loop, Travis[Loop.Travis@epa.gov]; Purchia, Liz[Purchia.Liz@epa.gov]; Henry, Timothy[henry.timothy@epa.gov]; Lee, Monica[Lee.Monica@epa.gov]; Grantham, Nancy[Grantham.Nancy@epa.gov]; Davis, CatherineM[Davis.CatherineM@epa.gov]
From: Cassell, Peter
Sent: Wed 12/30/2015 2:42:51 PM
Subject: Flint Water Clips Dec. 30, 2015

FLINT DRINKING WATER CLIPS
US. EPA REGION 5 – AS PREPARED BY PETER CASSELL (ORA/OEC/PA) ON DEC. 30, 2015

Snyder apologizes, Wyant resigns in Flint water crisis (Detroit Free Press)
Flint water report prompts apologies, resignations (Detroit News)
Michigan Regulator Resigns Amid Flint's Lead-in-Water Crisis (AP)
Task force lays most blame for Flint water crisis on MDEQ (Michigan Radio)
Flint water scandal: Snyder apologizes, DEQ director resigns (Fox 2 Detroit)
Flint leaders applaud DEQ director's resignation, governor's apology (MLive.com)
Michigan Gov. Rick Snyder apologizes for lead levels in Flint water (Detroit 4)
Director Dan Wyant resigns after task force blasts MDEQ over Flint water crisis (MLive.com)
Auditor: State erred on Flint water but didn't mislead feds (AP/Crain’s Detroit)
BREAKING: DEQ Director Resigns Over Flint Water Crisis (West Bloomfield Patch)
MDEQ Director Wyant resigns over Flint water crisis, Snyder apologizes (Michigan Radio)
Letter says the state department is at fault in Flint Water Crisis (WLNS News 6)

Snyder apologizes, Wyant resigns in Flint water crisis (Detroit Free Press)
Paul Egan, Detroit Free Press9:07 p.m. EST December 29, 2015
http://www.freep.com/story/news/local/michigan/2015/12/29/deq-director-wyant-resigns-over-flint-water-crisis/78027052/
LANSING — Gov. Rick Snyder apologized to the City of Flint on Tuesday for the drinking water crisis that has left children poisoned by lead and announced that he accepted the resignation of Michigan Department of Environmental Quality Director Dan Wyant.

Snyder said in a news release that there will be other personnel changes at the DEQ and that the moves he announced are among "initial steps" he is taking to assure the safety of Flint residents, with more action to come.

“I want the Flint community to know how very sorry I am that this has happened," Snyder said. "And I want all Michigan citizens to know that we will learn from this experience, because Flint is not the only city that has an aging infrastructure."

The governor, who previously stood by his DEQ director amid the controversy, said, "Dan Wyant has offered his resignation, and I've determined that it's appropriate to accept it."

Before joining the Snyder administration as DEQ director, Wyant was president and chief operating officer of the Edward Lowe Foundation, which promotes entrepreneurship and helps business owners grow their companies. Before that, he served as director of the Michigan Department of Agriculture under Govs. John Engler and Jennifer Granholm.

Brad Wurfel, the DEQ public information officer who apologized after criticizing a researcher's reports of rising lead levels in the blood of Flint children as irresponsible, also resigned Tuesday, a spokesman for Snyder confirmed.

The governor said he acted based on interim findings of the Flint Water Advisory Task Force, which he appointed Oct. 21 to investigate the crisis and is continuing its work. He received a letter Tuesday morning that was highly critical of the DEQ.

The letter from the task force said the "primary responsibility" for what happened in Flint lies with the DEQ; the agency "failed in its responsibility" to ensure safe drinking water for Michigan residents and "must be held accountable for that failure." It was signed by task force members Matt Davis, Chris Kolb, Larry Reynolds, Eric Rothstein and Ken Sikkema.

The Free Press reported Thursday that records obtained by the Michigan ACLU and Virginia Tech researcher Marc Edwards show that elevated lead levels in Flint's drinking water would have spurred action months sooner if the results of city testing that wrapped up in June had not been revised by the DEQ to wrongly indicate the water was safe to drink.

Auditor General Doug Ringler said in a letter released Monday that it was appropriate for the DEQ to disqualify two samples with high lead levels that did not meet the sampling criteria. But the records obtained by the ACLU and Edwards also show that a DEQ official sent Flint an e-mail saying that samples as of late June showed Flint's water had lead levels above the "action level" that would require public notice and remedial action, and he hoped the city could send the remaining required samples quickly and that they would be below the action level for lead.

The records also suggest the DEQ was not as strict in disqualifying samples with low lead levels that did not meet the testing criteria as it was in disqualifying samples with high lead readings.

'It's ... not enough'

Flint, which was under the control of a state-appointed emergency manager at the time of the cost-cutting move, switched its drinking water source, starting in April 2014, from Lake Huron water supplied by Detroit to the much more polluted and corrosive water from the Flint River.

The state has acknowledged that it misinterpreted a federal rule and failed to require Flint to add needed corrosion-control chemicals that would have prevented lead from leaching into the drinking water from pipes, connections and fixtures.

That change in the drinking-water source brought immediate complaints from Flint residents about the taste, smell and appearance of the water. The lead tests of the water could have spurred action in July, but it was not until October — after blood test results analyzed by Hurley Children's Hospital pediatrician Dr. Mona Hanna-Attisha showed elevated lead levels in Flint children — that the DEQ admitted making a mistake by failing to require the addition of corrosion-control chemicals to the Flint River water. The state also then provided funds to help Flint reconnect to Lake Huron water supplied by Detroit.

Lead can cause irreversible brain damage in children and has also been linked to behavioral problems.

Melissa Mays, a Flint resident who drank the contaminated water along with her three boys, said she was more shocked by Snyder's apology than by Wyant's resignation.

She welcomed the announcements but said more DEQ officials need to be removed because Flint residents can't trust those officials to make sure their water is safe to drink today.

"This all should have happened a long time ago, and it's also not enough," she said.

Mays questioned why Snyder has not endorsed Flint Mayor Karen Weaver's declaration of a state of emergency in Flint, which she said would help secure federal funding to help rectify problems.

Snyder spokesman Dave Murray said "no formal request has been made to the state" to declare a state of emergency in Flint.

"We are committed to working with Mayor Weaver and Genesee County leaders," and the emergency management division of the Michigan State Police is working with city and county officials on potential avenues for federal aid, Murray said.

The crisis has prompted a federal class-action and calls for an investigation by the U.S. Department of Justice.

Goals: Openness, trust

Snyder said "changes in leadership and staff are not enough. I understand there can be disagreements within the scientific community. That is why I have directed both the departments of Environmental Quality and Health and Human Services to invite every external scientist who has worked on this issue to be our partners in helping us improve Flint water."

Snyder said he wants to "share research on water and blood-lead level testing so we can arrive at accurate and mutually supported conclusions. Together, we should work to affirm that we're using the very best testing protocols to ensure Flint residents have safe drinking water and that we're taking steps to protect their health over the short and long term."

The other personnel changes at DEQ referenced by Snyder, aside from Wurfel's resignation, have not yet been made, Murray said.

“I know many Flint citizens are angry and want more than an apology," Snyder said. "That’s why I’m taking the actions today to ensure a culture of openness and trust. We’ve already allocated $10 million to test the water, distribute water filters, and help in other ways. Last week, I called Flint Mayor Karen Weaver, and we’re going to meet soon to discuss other ways the state can offer assistance.

“These are only initial steps - we fully expect to take more actions following the recommendations of our task force. When it comes to matters of health and quality of life, we’re committed to doing everything we can to protect the well-being of our citizens.”

The letter from the task force said a minimalist culture of "technical compliance" had developed in the DEQ's Office of Drinking Water and Municipal Assistance and "it led to MDEQ's failure to recognize a number of indications that switching the water source in Flint would — and did — compromise both water safety and water quality."

The office "must adopt a posture that is driven not by this minimalist technical compliance approach, but rather by one that is founded on what needs to be done to assure drinking water safety," the letter said.

The letter also said that both the tone and substance of DEQ statements to the public during the crisis were "completely unacceptable," marked by a "persistent tone of scorn and derision."

Task force members met with Wyant, and while he agreed with many of the task force's interim conclusions, "it was disappointing to hear his weak defense of the (corrosion control) decision," the letter said.

Senate Minority Leader Jim Ananich, D-Flint, said the personnel changes Snyder announced could be a sign of progress if they "lead to a more aggressive response and resources to improve public health."

"I still believe that legislative hearings will be required to get all the answers and help shape the necessary policy changes, and ensure this never happens again," Ananich said in a news release.

"Dan Wyant gets to walk away from this crisis, but the people of Flint do not," said Lonnie Scott, the group's executive director. "There's a lot we don't know about this man-made catastrophe. What did Gov. Snyder know and when did he know it? We need complete transparency so that justice for the families of Flint can be realized and the proper people can be held accountable."

Contact Paul Egan: 517-372-8660, pegan@freepress.com or on Twitter @paulegan4

Flint water report prompts apologies, resignations (Detroit News)

Jim Lynch The Detroit News9:13 a.m. EST December 30, 2015
http://www.detroitnews.com/story/news/politics/2015/12/29/deq-director-wyant-resigns-due-flint-water-crisis/78028616/

Buy Photo
(Photo: Dale G. Young / The Detroit News)

Michigan's top environmental official resigned Tuesday after an independent task force delivered its initial findings on the Flint water contamination crisis — conclusions that also prompted an apology from Gov. Rick Snyder.

Dan Wyant, director of the Department of Environmental Quality since 2011, tendered his resignation Tuesday, marking the second agency shakeup in just over two months related to Flint's lead-tainted drinking water problems. The industrial city has been plagued by lead issues since an April 2014 switch to the Flint River as its water source.

A Snyder-appointed task force investigating the long-running situation announced it found Tuesday the DEQ "primarily responsible for failing to ensure safe drinking water in Flint." Snyder accepted the initial findings and Wyant's resignation — "I've determined that it's appropriate to accept it, he said — and then issued an apology.

"I want the Flint community to know how very sorry I am that this has happened," Snyder said in a press release. "And I want all Michigan citizens to know that we will learn from this experience, because Flint is not the only city that has an aging infrastructure."

"I know many Flint citizens are angry and want more than an apology. That's why I'm taking the actions today to ensure a culture of openness and trust."

A Flint Water Advisory Task Force co-chair blamed the DEQ's passive culture for Flint's water ills.

“Flint residents were exposed to toxic levels of lead in their water primarily due to a regulatory culture of passive technical compliance that is simply insufficient to the task of public protection,” wrote Ken Sikkema, a former state senator. “We also believe that the dismissive and disrespectful tone of much of the MDEQ’s response to public concerns is unacceptable.”

The water switch, made while Flint was under the leadership of a Snyder-appointed emergency manager, immediately led to resident complaints about the smell, taste and discoloration of their drinking water. Eventually, researchers found a link between the switch and a rise in lead poisoning among city children.

Lead poisoning can cause learning disabilities and, at high levels, may lead to seizures, coma and death, according to the Centers for Disease Control and Prevention.

Wyant could not be reached for comment Tuesday. In October, Wyant admitted the DEQ erred in its application of the federal Lead and Copper Rule, designed to ensure safe drinking water for residents.

Late on Tuesday, DEQ spokesman Brad Wurfel resigned as well.

Flint was allowed to begin drawing its drinking water from the river without any corrosion controls in place to prevent lead in old plumbing connections from leaching. The task force said the DEQ failed in the regulatory handling of Flint’s water problems, the “substance and tone” in the department’s response as well as its “interpretation of the Lead and Copper Rule.”

State Sen. Jim Ananich, D-Flint, criticized the DEQ culture Tuesday, saying workers were more concerned with following rules than informing the public about potential problems.

“When you have lead in the water, I don’t care if you follow the rules or not: You need to notify the public first,” Ananich said.

Critics have put increasing pressure on Snyder’s administration to answer for the Flint water decisions in the last two years. Among the harshest critics is Marc Edwards, a Virginia Tech researcher whose water sampling at Flint homes and public record requests have helped keep the spotlight on the state government’s actions.

But Edwards said Wyant should not be the one on the chopping block.

“I’m glad that someone is sorry and someone is being held accountable,” Edwards said. “But Dan Wyant would not be at the top of my list — or even on the list. I feel strongly he was misled by his staff at every point, and he was put in publicly embarrassing situations by the staff’s misinformation.”

Dr. Mona Hanna-Attisha, a Hurley Medical Center pediatrician who uncovered lead exposure in city children following the switch, echoed Edwards by saying DEQ staffers’ mistakes led to Flint’s problems.

“(Wyant) wasn’t directly involved,” she said. “There are other people, particularly in (the Office of Drinking Water and Municipal Assistance), that need to take some responsibility. ... (Wyant) was a nice person being fed bad information.”

In 2013, Flint agreed to create a new regional water authority in an attempt to save money. The city had tried to negotiate lower rates with former provider Detroit Water and Sewerage Department for years, to little avail.

But the Karegondi Water Authority will not be completed until some time next year. In the interim, Flint looked to its river to provide drinking water. That water turned out to be far more corrosive than the Lake Huron water used by the Detroit system.

With pressure mounting from troublesome water samples and health studies, Flint reconnected to the Detroit system in October.

Snyder previously was elusive in acknowledging the extent of the state's responsibility for the lead contamination of the city's water when it switched to the more corrosive Flint River in 2014, saying he was awaiting the task force report. On Tuesday, the governor was more contrite.

"We've already allocated $10 million to test the water, distribute water filters, and help in other ways," Snyder said. "Last week, I called Flint Mayor Karen Weaver, and we're going to meet soon to discuss other ways the state can offer assistance."

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Michigan Regulator Resigns Amid Flint's Lead-in-Water Crisis (AP)

By DAVID EGGERT, ASSOCIATED PRESS
LANSING, Mich. — Dec 29, 2015, 7:16 PM ET
http://abcnews.go.com/Politics/wireStory/michigan-official-resigns-amid-flint-water-issue-35996502

Michigan's top environmental regulator resigned Tuesday after elevated levels of lead were found in Flint children during a drinking water crisis that a task force blamed primarily on his agency.

Gov. Rick Snyder accepted the resignation of Department of Environmental Quality Director Dan Wyant and apologized for what occurred in Flint, which switched its drinking water supply in a cost-cutting move while under state financial management. Communications director Brad Wurfel also resigned, and Snyder said he plans additional personnel changes in the agency.

Wyant quit the same day a task force appointed by the Republican governor reported that the department was primarily responsible for the fiasco because it did not require Flint to keep corrosive water from leaching lead from service pipes into residents' homes and belittled concerns from the public. Exposure to lead can cause behavior problems and learning disabilities in children.

"I want the Flint community to know how very sorry I am that this has happened," Snyder said in a written statement. "And I want all Michigan citizens to know that we will learn from this experience, because Flint is not the only city that has an aging infrastructure."

The five-member task force, which previously brought up concerns about a lack of organization in responding to the disaster, said the environmental department's Office of Drinking Water and Municipal Assistance has a "minimalist approach" to regulatory oversight in which "technical compliance" is sufficient. It faulted the agency for a "tone of scorn and derision" toward the public, including outside water and health experts who raised alarm bells.

The task force confirmed that the state did not follow the federal Lead and Copper Rule when Flint disconnected from Detroit's water system in April 2014 and switched to Flint River water while waiting to connect to a new regional water authority.

Detroit's water from Lake Huron had been treated for corrosion. State officials thought that after Flint made the transition to the river it could test the new water for lead over two six-month intervals to determine potential corrosion treatment instead of needing to immediately add corrosion controls. Flint returned to Detroit's water in October after a public health emergency was declared.

The task force, which met with Wyant on Dec. 16, noted his substantial agreement with many of its conclusions but expressed disappointment with his "weak defense" regarding the federal rule.

The U.S. Environmental Protection Agency said in a November memo that there are "differing possible interpretations" of the Lead and Copper Rule, explaining that it does not explicitly discuss a scenario like in Flint.

But task force members said, "Individuals and agencies responsible must be held accountable in a timely fashion."

They also cited recent revelations of the Department of Health and Human Services' apparent early knowledge of and silence about elevated blood-lead levels, and said the committee's final report in early 2016 would review local governments' decision processes while under emergency management.

"I know many Flint citizens are angry and want more than an apology. That's why I'm taking the actions today to ensure a culture of openness and trust," Snyder said.

Wyant, 56, led the Environmental Quality Department for nearly five years. He previously served as the state's agricultural director under Republican Gov. John Engler and Democratic Gov. Jennifer Granholm.

"If these personnel moves and change in tone lead to a more aggressive response and resources to improve public health, then we are finally making progress," said Senate Minority Leader Jim Ananich, a Democrat from Flint.

Follow David Eggert at http://twitter.com/DavidEggert00 . His work can be found at http://bigstory.ap.org/author/david-eggert

Task force lays most blame for Flint water crisis on MDEQ (Michigan Radio)

By VINCENT DUFFY • 14 HOURS AGO

SHARETwitter Facebook Google+ Email

http://michiganradio.org/post/task-force-lays-most-blame-flint-water-crisis-mdeq#stream/0

MDEQ Director Dan Wyant at a recent press conference.

CREDIT SCREEN GRAB / MLIVE USTREAM

A task force appointed by Gov. Rick Snyder says Michigan's environmental regulatory agency is primarily responsible for the state's failure to ensure safe drinking water for Flint residents.

The Flint Water Advisory Task Force says in a letter to Snyder that the state Department of Environmental Quality "must be held accountable for that failure."

The letter was made public Tuesday. You can read it here.

Corrosive Flint River water leached lead from service pipes into homes after the city switched last year from Detroit water. Elevated blood-lead levels later were found in some children.

Department of Environmental Quality Director Dan Wyant and spokesman Brad Wurfel both resigned Tuesday.

Task force co-chair Ken Sikkema says in the letter that "Flint residents were exposed to toxic levels of lead in their water primarily due to a regulatory culture of passive technical compliance."

The FWATF letter stated in part:

“We believe the primary responsibility for what happened in Flint rests with the Michigan Department of Environmental Quality (MDEQ). Although many individuals and entities at state and local levels contributed to creating and prolonging the problem, MDEQ is the government agency that has responsibility to ensure safe drinking water in Michigan. It failed in that responsibility and must be held accountable for that failure.”

“The City of Flint’s water customers—fellow Michigan citizens—were needlessly and tragically exposed to toxic levels of lead through their drinking water supply. They deserve a commitment to properly assess responsibility and ensure accountability. They also deserve a commitment to needed mitigation in both the short and long term. The Flint water crisis never should have happened. Having failed to prevent it, state government should coordinate a sustained, public-health-focused response to remedy, to the fullest extent possible, the impacts on the Flint community.”

The letter outlined three areas where MDEQ failed:

Regulatory Failure
Failure in Substance and Tone of MDEQ Response to the Public
Failure in MDEQ Interpretation of the Lead and Copper Rule
This is the second letter sent by the Task Force. The first, sent earlier this month, made several recommendations concerning coordination of state efforts that were supported and implemented by Governor Snyder.

The full FWATF report is expected to be completed in early 2016.

Members of the Task Force include:

Matthew Davis, M.D., M.A.P.P., is professor of pediatrics and internal medicine at the University of Michigan Health System and professor of public policy at the Gerald R. Ford School at the University of Michigan.

Chris Kolb is president of the Michigan Environmental Council.

Lawrence Reynolds, M.D., is a pediatrician in Flint who serves as president of the Mott Children’s Health Center.

Eric Rothstein is a national water issues consultant and principal at the Galardi Rothstein Group. He served as an independent advisor on the creation of the Great Lakes Water Authority.

Ken Sikkema is a senior policy fellow at Public Sector Consultants. (Full Disclosure - he is also a regular commenter on Michigan Radio.)

The FWATF was formed by Governor Snyder to review actions regarding the Flint water system and offer recommendations both for Flint and Michigan to protect the health and safety of state residents.

Flint water scandal: Snyder apologizes, DEQ director resigns (Fox 2 Detroit)

Gov. Rick Snyder announced changes at the Michigan DEQ.
http://www.fox2detroit.com/news/local-news/66000998-story

POSTED:DEC 29 2015 10:25PM EST
UPDATED:DEC 29 2015 11:24PM EST
FLINT, Mich. - Gov. Rick Snyder says he's sorry for Flint's water crisis as one of his top appointees resigns.
The director of the state's department of environmental quality Dan Wyant resigned.

Wyant was in charge of keeping the water safe. When Flint switched its drinking water source from Lake Huron water supplied by detroit...to the flint river - to save money -- corrosion flowed through the pipes.

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Tests showed elevated levels of lead in the city's drinking water back in June. But the state didn't take action until October after blood testing showed high lead levels in Flint's children.
Flint water scandal: Snyder apologizes, DEQ director resigns
Snyder's office issued a press release Tuesday:
"I want the Flint community to know how very sorry I am that this has happened," he said. "And I want all Michigan citizens to know that we will learn from this experience, because Flint is not the only city that has an aging infrastructure.
"When I became aware that the city of Flint's water showed elevated lead levels and that the state's handling of the situation was being questioned," he said. "I requested funding to switch the source back to the Great Lakes Water Authority and appointed an independent task force to identify possible missteps and areas for improvement.
"The task force has done an exceptional job, reviewing stacks of documents and interviewing scores of Flint, Genesee County, state and federal officials … We'll continue to work with the community members to make sure we hear and respond to their concerns.
"MDEQ Director Dan Wyant has offered his resignation, and I've determined that it's appropriate to accept it. I'm also making other personnel changes at MDEQ to address problems cited by the task force."
In a previous FOX 2 report it was discovered a year after the city began using the Flint

River as its water source; a local hospital's study found the number of Flint kids under the age of 5 years old with above average lead levels nearly doubled city-wide and in some cases, tripled.

Virginia Tech University tested resident Ronda Thornton's water. Anything more than 30 micrograms a liter is a sign of serious lead contamination. Hers registered 138.

"I know many Flint citizens are angry and want more than an apology," Snyder said. "That's why I'm taking the actions today to ensure a culture of openness and trust. We've already allocated $10 million to test the water, distribute water filters, and help in other ways. Last week, I called Flint Mayor Karen Weaver, and we're going to meet soon to discuss other ways the state can offer assistance."

"But changes in leadership and staff are not enough. I understand there can be disagreements within the scientific community. That is why I have directed both the departments of Environmental Quality and Health and Human Services to invite every external scientist who has worked on this issue to be our partners in helping us improve Flint water. Let's share research on water and blood lead level testing so we can arrive at accurate and mutually supported conclusions. Together, we should work to affirm that we're using the very best testing protocols to ensure Flint residents have safe drinking water and that we're taking steps to protect their health over the short and long term."

"These are only initial steps - we fully expect to take more actions following the recommendations of our task force. When it comes to matters of health and quality of life, we're committed to doing everything we can to protect the well-being of our citizens."

Flint leaders applaud DEQ director's resignation, governor's apology (MLive.com)

http://www.mlive.com/news/flint/index.ssf/2015/12/gov_rick_snyder_accepts_mdeq_h.html
By Jiquanda Johnson | jjohns16@mlive.com
Follow on Twitter
on December 29, 2015 at 6:41 PM, updated December 29, 2015 at 8:44 PM

DEQ spokesman also resigns over Flint water crisis, says city 'didn't feel like we cared'
Flint leaders applaud DEQ director's resignation, governor's apology
Congressman Dan Kildee will again discuss Flint water on 'The Rachel Maddow Show'
Gov. Rick Snyder still doesn't get it when it comes to Flint water crisis
Director Dan Wyant resigns after task force blasts MDEQ over Flint water crisis
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FLINT, MI – Mayor Karen Weaver and other local leaders say the resignation of Michigan Department of Environmental Quality Director Dan Wyant and release of Flint Water Task Force findings Tuesday are the first steps toward holding people accountable for Flint's water crisis.

"There is some accountability being put in place and that's a good thing," Weaver said. "That's what is happening and I think that's a good sign because it shows that our voices have been heard and that they will continue to be heard."

According to a statement issued by Gov. Rick Snyder on Dec. 29, he has accepted Wyant's resignation after findings from a report by the task force, which was created by Snyder in October to look into Flint's water crisis. In the same statement, Snyder also said he was "sorry" to the Flint community for the water issues.

"I know many Flint citizens are angry and want more than an apology," Snyder said. "That's why I'm taking the actions today to ensure a culture of openness and trust ...

Last week, I called Flint Mayor Karen Weaver, and we're going to meet soon to discuss other ways the state can offer assistance."

Weaver confirmed that she will be meeting with Snyder after the first of the year.

"I hope this will help move Flint forward," she said. "One thing that has been an issue for us here in Flint has been that broken trust. We will have a new person that we will be working with, and that's a positive step."

The task force report, which is preliminary, revealed that the MDEQ failed the city in multiple areas including regulatory failures, substance and tone of the MDEQ's response to public and the interpretation of the federal lead and copper rule.

"We believe the primary responsibility for what happened in Flint rests with the Michigan Department of Environmental Quality (MDEQ)," said the preliminary report. "Although many individuals and entities at state and local levels contributed to creating a prolonging problem, MDEQ is the government agency that has responsibility to ensure safe drinking water in Michigan. It failed in that responsibility and must be held accountable."

State Rep. Sheldon Neeley, D-Flint, said that he and others in the city have called for legislative hearings regarding the water crisis and that Wyant's departure is just the first, not the only, person held responsible for the condition of Flint's water.

"For months, the call has been public and aggressive for Dan Wyant to remove himself from his position, or have Gov. Rick Snyder do the deed for him," Neeley said in a statement issued Dec. 29. "There are many culpable parties involved in the continued decline of health and safety during the water crisis in the city of Flint, and Wyant was just one figure in a menagerie of offenders."

Neeley, who along with Sen. Jim Ananich, D-Flint, have been pushing for legislative hearings on Flint's water crisis, went on to say there is still "cleanup do be done" and he is "glad" that Wyant has stepped down in what Neeley considers a "disorganized and flawed DEQ."

The task force's report also says members spoke with Wyant on Dec. 16 and they were not pleased with how he responded to the city's water crisis and he was in agreement with some of their findings.

"It is our understanding that he has drawn similar conclusions in his own evaluation of MDEQ's role in the Flint water crisis," said the report. "At the same time, it was disappointing to hear his weak defense of the CCT (corrosion control treatment) decision based on the EPA's November 2015 memorandum."

Both Ananich and Neeley's push led to an independent review by the Office of State Auditor Genera,l which made it clear in a Dec. 23 letter that corrosion control should have been maintained during Flint's transition from Detroit water to Flint River water.

The review was based on a series of questions sent to the auditor from Ananich in October.

The corrosiveness of Flint River water is blamed for lead that leached from pipes into drinking water, causing elevated levels of lead in the blood of Flint children.

"I think the best apology (Snyder) can offer the residents of Flint and the rest of the state is a promise that this will never happen again," Ananich said. "The proof is in the long-term commitment. I'm going to continue to work to make sure that we get that."

Michigan Gov. Rick Snyder apologizes for lead levels in Flint water (Detroit 4)

DEQ head Dan Wyant's resigns after task force blames department for crisis

By Jason Colthorp – Reporter
http://www.clickondetroit.com/news/michigan-official-resigns-amid-flint-water-issue_
LANSING, Mich. - Gov. Rick Snyder issued an apology Tuesday as Dan Wyant, his head of the Department of Environmental Quality, resigned after a task force lead by the state's auditor general blasted the DEQ for it's role in Flint's water crisis.

The state's mishandling of Flint's water system ultimately exposed Flint residents to dangerously elevated levels of lead.

"I want the Flint community to know how very sorry I am that this has happened," Snyder said in a statement. "And I want all Michigan citizens to know that we will learn from this experience."

The governor's apology and the DEQ head's resignation has helped to temper concerns that no one cared about Flint said the city's mayor Karen Weaver.

"One of the things we've always talked about is accountability and that seems to be what's happening," said Weaver. "It also let us know here in Flint that our voice is being heard."

Snyder's apology and Wyant's resignation come after the task force released their finding that the DEQ was primarily at fault for Flint's unhealthy level of lead in their drinking water.

"Although many contributed to creating and prolonging the problem, MDEQ is the government agency that has responsibility to ensure safe drinking water in Michigan," the task force said in a written statement. "It failed in that responsibility."

For many Flint residents like Kim Peterson, Tuesday's announcements do little to help them feel confident about the safety of their drinking water. Peterson says she is still hesitant to drink the water even though it is again coming from a healthy source in Lake Huron.

"I take it to mean that something was really wrong with this whole system of checks and balances," she said.

"You don't trust it because you've heard so many conflicting things from so many different people, so we still continue to buy the water."

Mayor Weaver, however, believes Snyder's apology is a first step toward rebuilding trust: "This is a good step to get some things started because people had lost faith and they had lost trust."

Snyder has promised more steps will be taken after the task force releases its final and full report.

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Director Dan Wyant resigns after task force blasts MDEQ over Flint water crisis (MLive.com)

http://www.mlive.com/lansing-news/index.ssf/2015/12/deq_director_dan_wyant_resigns.html
Michigan Department of Environmental Quality Director Dan Wyant speaks during a news conference in Flint on Oct. 2, 2015. (Danny Miller | MLive.com)
PrintEmail
By Emily Lawler | elawler@mlive.com
on December 29, 2015 at 4:39 PM, updated December 29, 2015 at 6:51 PM
LANSING, MI -- Gov. Rick Snyder on Tuesday accepted a resignation from Michigan Department of Environmental Quality Director Dan Wyant after a task force laid responsibility for the Flint water crisis at the feet of the department.
Snyder, in a statement, announced Wyant's resignation and apologized to Flint residents after he received a letter from the Flint Water Advisory Task Force.
"...MDEQ Director Dan Wyant has offered his resignation, and I've determined that it's appropriate to accept it. I'm also making other personnel changes at MDEQ to address problems cited by the task force," Snyder said.
Wyant and the DEQ have come under fire in recent months for handling a Flint drinking water crisis that lead to corrosive water running through city pipes and resulted in children with elevated levels of lead. In October, Wyant acknowledgeda mistake in oversight from his office, saying DEQ officials were confused about federal regulations on making the drinking water less corrosive.
The task force in its letter blamed the department for the crisis.
"We believe the primary responsibility for what happened in Flint rests with the Michigan Department of Environmental Quality (MDEQ)," read the letter to Snyder.
"Although many individuals and entities at state and local levels contributed to creating and prolonging the problem, MDEQ is the government agency that has responsibility to ensure safe drinking water in Michigan. It failed in that responsibility and must be held accountable for that failure."
The task force cited DEQ's involvement as regulatory failure, failure in substance and tone of response to the public and a failure of interpreting the lead and copper rule.
Gov. Rick Snyder recently named the Flint water crisis as his biggest disappointment in 2015.
Wyant had a long track record of service for the state. He served as director of the Michigan Department of Agriculture under both Democratic Gov. Jennifer Granholm and Republican Gov. John Engler before Gov. Rick Snyder tapped him to head up the DEQ in 2011.
He shepherded the department through a transition into being its own entity again after Gov. Jennifer Granholm had combined it with the Department of Natural Resources, forming the Department of Natural Resources and Environment. He also led the "quality of life group" within state government, meaning he coordinated efforts between the DNR, DEQ and Department of Agriculture and Rural Development.
The statement from Snyder alluded to other structural changes within the DEQ, and spokesperson Dave Murray said those decisions would be made in the coming days.
DEQ spokesperson Brad Wurfel did not immediately return a call for comment.

Wyant's resignation met with mixed reaction from political groups and leaders.
Senate Minority Leader Jim Ananich (D-Flint) released the following statement:
"If these personnel moves and change in tone lead to a more aggressive response and resources to improve public health, then we are finally making progress. I still believe that legislative hearings will be required to get all the answers and help shape the necessary policy changes, and ensure this never happens again."
Attorney General Bill Schuette praised Wyant's service to the state.
"I am saddened to hear of the resignation of Department of Environment Quality Director Dan Wyant. In my 20-plus years of knowing him, Dan has been a hardworking, dedicated public servant. I am committed to working with all parties, including the legislature and Governor, to ensure the public's health and the well being of Michigan residents."
Democratic Congressman Dan Kildee, who represents Flint, said the steps taken today were appropriate but encouraged further action.
"Governor Snyder's apology over the Flint water crisis is appropriate, as are personnel changes announced today at the Department of Environmental Quality," Kildee said.
"Through this ongoing crisis, the people of Flint did nothing wrong – they are victims of this failure of government. The State of Michigan must not only acknowledge its role in this crisis, but also take responsibility and act right away to make it right."
He urged the state to establish a fund to ensure that kids receive developmental, nutritional and educational resources to help overcome the effects of their lead exposure.
Rep. Sheldon Neeley, D-Flint, said Wyant was not the only offender.
"For months, the call has been public and aggressive for Dan Wyant to remove himself from his position, or to have Gov. Rick Snyder do the deed for him. There are many culpable parties involved in the continued decline of health and safety during the water crisis in the city of Flint, and Wyant was just one figure in a menagerie of offenders," Neeley said.
"While there is still much cleanup to be done, I am glad Mr. Wyant realized he could no longer continue as the head of the disorganized and flawed DEQ, and I call on Gov. Snyder to take careful effort in repairing this department so that it earns back the trust of the people of Flint and this great state.
Progress Michigan said there had been a lack of accountability for the Flint water crisis.
"So far under Gov. Rick Snyder's watch, there has been zero accountability in this crisis and that continues today," said Lonnie Scott, executive director of Progress Michigan.
"Dan Wyant gets to walk away from this criss, but the people of Flint do not. There's a lot we don't know about this man-made catastrophe. What did Gov. Snyder know and when did he know it? We need complete transparency so that justice for the families of Flint can be realized and the proper people can be held accountable. All documentation related this this crisis needs to be released to the public immediately."
Emily Lawler is a Capitol/Business reporter for MLive. You can reach her atelawler@mlive.com, subscribe to her on Facebook or follow her on Twitter:@emilyjanelawler.

Auditor: State erred on Flint water but didn't mislead feds (AP/Crain's Detroit)
http://www.crainsdetroit.com/article/20151228/NEWS01/151229867/auditor-state-erred-on-flint-water-but-didnt-mislead-feds By David Eggert

Associated Press
Michigan Department of Environmental Quality Environment More +
LANSING — The director of Michigan's Department of Environmental Quality has resigned after the Flint Water Task Force delivered its findings on the the city's water contamination crisis to Gov. Rick Snyder.
Snyder said Tuesday afternoon in a statement that he accepted the resignation of Dan Wyant and plans to make "other personnel changes at MDEQ to address problems cited by the task force.
“But changes in leadership and staff are not enough."
In a preliminary report released Monday, Michigan's auditor general said state regulators should have required Flint to treat its corrosive drinking water to keep lead from leaching from service lines into people's homes but did not purposely mislead federal officials about the lack of corrosion control.
Doug Ringler, citing a memo issued last month by the U.S. Environmental Protection Agency, concluded that the Michigan Department of Environmental Quality erred in not requiring the city to immediately combat corrosion when it switched from Detroit's system to the Flint River in April 2014 in a cost-cutting move while under state financial management. State officials interpreted federal rules to mean Flint could make the transition and then test the new water for lead over two six-month intervals to determine potential corrosion treatment.
Flint children have been found to have elevated levels of lead in their blood since the water change. Gov. Rick Snyder's administration initially downplayed concerns but later committed funding to reconnect Flint to Detroit and to provide filters, testing and other services.
Ringler was already conducting an audit of Michigan's Office of Drinking Water and Municipal Assistance when the Flint corrosion issue arose. At the request of Senate Minority Leader Jim Ananich, he answered questions specific to Flint's lead contamination, including concerns that state regulators misled federal environmental regulators.
In February, a DEQ water supervisor told the EPA that Flint had a corrosion control program in place. But in April, an EPA official confirmed through another DEQ official that the city was not practicing corrosion treatment, according to emails.
The EPA apparently interpreted the word "program" to mean treatment, while the DEQ meant it as testing to determine if corrosion controls would be needed in the future.
"Based on our review of this and other emails, we have no specific reason to believe that DEQ willfully misrepresented the information to the EPA," Ringler wrote in a letter dated Wednesday and made public Monday.
The auditor concluded, however, that regardless of confusion over the federal rule, the state should have required Flint to start pursuing corrosion treatment in March after the first six months of testing showed too-high lead levels instead of waiting until August after a second six-month period. He also said the DEQ did not verify that Flint was correctly sampling water from houses only with lead pipes or lead service lines. He suggested that the department consider doing so.
"We agreed with the findings in the Auditor General's review," DEQ spokesman Brad Wurfel said. "The findings align with our internal department review. We appreciate the Auditor General's work to provide a fair and well considered look at some key issues."
The Republican governor has come under scrutiny for the Flint fiasco. Spokesman Dave

Murray said the letter "includes some criticisms, but also reflects that state officials were following accepted protocols, or in one case, an interpretation of the corrosion control program that the EPA later clarified. But we need to do better in ensuring Flint residents have safe water and tracking children affected by elevated lead levels."
Ananich, D-Flint, said "there are serious failings in our system that must be addressed" and again called for GOP leaders to schedule legislative hearings. They have rejected the requests, citing the work of a task force formed by Snyder.
The auditor's letter did not provide clarity on who specifically decided to use the Flint River for water. It was supposed to be an interim source until the city could join a new system getting water from Lake Huron.
Ringler noted that the city council voted in March 2013 to support moving to the Karegnondi Water Authority but was "silent" on using the river temporarily. Flint was being run by a Snyder-appointed manager until this past April and remains under some state oversight.

BREAKING: DEQ Director Resigns Over Flint Water Crisis (West Bloomfield Patch)
Gov. Rick Snyder apologizes to Flint, pledges to help officials address public health crisis surrounding dangerous lead levels in water.
http://patch.com/michigan/westbloomfield/breaking-deq-director-resigns-over-flint-water-crisis
West Bloomfield, MI

By BETH DALBEY (Patch Staff) December 29, 2015

LANSING, MI – The director of the Michigan Department of Environmental Quality has resigned over the Flint water debacle, Gov. Rick Snyder said Tuesday.
DEQ Director Dan Wyant "has offered his resignation, and I've determined that it's appropriate to accept it," Snyder said in a statement.

The governor said he will be "making other personnel changes at MDEQ" as well.

State officials encouraged officials in Flint, where the mayor has asked for federal emergency reliefto deal with a public health crisis resulting from high lead levels in water, to understate the results, according to e-mails obtained by the American Civil Liberties Union of Michigan and Marc Edwards, a Virginia Tech researcher who helped bring the water crisis to the forefront.

After the testing revealed dangerous lead levels in June, the Michigan Department of Environmental Quality wrongly indicated the water was safe to drink, according to the e-mails.

Related

Erin Brockovich Keeping an Eye on Flint's 'Poop Water'
Pediatrician Exposed Crisis of Lead in Flint Water
State Delayed Action on Lead in Flint Water

The financially struggling city of Flint turned off the taps to water from Detroit, which gets its supply from Lake Huron, and switched to water from the Flint River in a money-saving move in 2014. Flint was under the control of a state-appointed emergency manager at the time.

The e-mail trail suggests state officials were aware of the impending water crisis well ahead of a study released in September by West Bloomfield pediatrician Dr. Mona Hanna-Attisha, pediatric residency director at Flint's Hurley Children's Hospital.

More from West Bloomfield Patch
10 Amazon Deals On Accessories For Your New Smartphone
Michigan State Has 'Unfinished Business' in Cotton Bowl: Watch
Penguins! See Detroit Zoo's Newest Residents: Watch
Opioid Addicts Younger Than Ever: Study

The study showed the proportion of children with above-average levels of lead in their blood had nearly doubled since the city began getting its water from the Flint River.
The consequences of lead poisoning are serious and long lasting.

Lead's trail is virtually invisible, discoverable only through finger-prick blood test or when children begin showing signs of learning disabilities, reduced IQ, behavioral changes, anti-social behavior, anemia, hypertension, renal impairment, immunotoxicity and a plethora of other neurological and behavioral problems that are thought to be irreversible, according to theWorld Health Organization.

The e-mails showed that DEQ district coordinator Stephen Busch told the U.S. Environmental Protection Agency in February that Flint had "an optimized corrosion control program" to prevent lead from getting into the water system when, in fact, the city had no corrosion control program at all.

In his statement, the governor apologized to the residents of Flint and to residents of other cities with aging infrastructure.

"I want the Flint community to know how very sorry I am that this has happened. And I want all Michigan citizens to know that we will learn from this experience, because Flint is not the only city that has an aging infrastructure," he wrote.

Changes in leadership and staff aren't enough, Snyder said. The statement continued:

"I understand there can be disagreements within the scientific community. That is why I have directed both the departments of Environmental Quality and Health and Human Services to invite every external scientist who has worked on this issue to be our partners in helping us improve Flint water.

"Let's share research on water and blood lead level testing so we can arrive at accurate and mutually supported conclusions," he wrote. "Together, we should work to affirm that we're using the very best testing protocols to ensure Flint residents have safe drinking water and that we're taking steps to protect their health over the short and long term.

"I know many Flint citizens are angry and want more than an apology. That's why I'm taking the actions today to ensure a culture of openness and trust. We've already allocated $10 million to test the water, distribute water filters, and help in other ways. Last week, I called Flint Mayor Karen Weaver, and we're going to meet soon to discuss other ways the state can offer assistance.

"These are only initial steps — we fully expect to take more actions following the recommendations of our task force. When it comes to matters of health and quality of life, we're committed to doing everything we can to protect the well-being of our citizens."

MDEQ Director Wyant resigns over Flint water crisis, Snyder apologizes (Michigan Radio)
http://michiganradio.org/post/mdeq-director-wyant-resigns-over-flint-water-crisis-snyder-apologizes#stream/0
By JAKE NEHER • 16 HOURS AGO
SHARETwitter Facebook Google+ Email
Former MDEQ director Dan Wyant
CREDIT STEVE CARMODY / MICHIGAN RADIO
UPDATED AT 5:37 PM ON 12/29/15

The head of the Michigan Department of Environmental Quality (MDEQ) has resigned over the drinking water crisis in Flint.

Gov. Rick Snyder has also now apologized to the community of Flint for his administration's involvement in the situation.

"I want the Flint community to know how very sorry I am that this has happened," said Snyder in a statement on Tuesday. "And I want all Michigan citizens to know that we will learn from this experience, because Flint is not the only city that has an aging infrastructure."

"I know many Flint citizens are angry and want more than an apology. That's why I'm taking the actions today to ensure a culture of openness and trust."

MDEQ Director Dan Wyant will step down immediately. The resignation comes after Snyder received initial findings from the task force he appointed to investigate the situation. A number of reports have pointed to mistakes the department made that resulted in elevated lead levels in the city's water.

The governor says he plans to make additional personnel changes in the department – although he hasn't announced what those will be. And he says he'll meet with Flint Mayer Karen Weaver to discuss further actions the state could take to help the city.

Also resigning from the MDEQ today was spokesman Brad Wurfel.

Letter says the state department is at fault in Flint Water Crisis (WLNS News 6)
http://wlns.com/2015/12/30/letter-says-the-state-department-is-at-fault-in-flint-water-crisis/
6 News StaffPublished: December 30, 2015, 6:11 am
Photo: MLive
LANSING, MI. (WLNS) – At the state capital, a letter sent to Governor Snyder from his Flint Water Crisis task force says there's a state department to blame for the city's water problems.

In the letter the task force says the Department of Environmental Quality must be held accountable for failing to ensure the safe drinking water for people of Flint.

It says Flint residents were exposed to toxic levels of lead in their water because of a culture of passive compliance.

In addition to the letter, Dan Wyant stepped down as director of the department

###

To: Peterson, John[peterson.john@epa.gov]; Hedman, Susan[hedman.susan@epa.gov]; Kaplan, Robert[kaplan.robert@epa.gov]; Hyde, Tinka[hyde.tinka@epa.gov]
Cc: Kelley, Jeff[kelley.jeff@epa.gov]; Rowan, Anne[rowan.anne@epa.gov]; Beckmann, Ronna Erin[beckmann.ronna@epa.gov]; Harrison, Melissa[Harrison.Melissa@epa.gov]; Abrams, Dan[Abrams.Dan@epa.gov]; Poy, Thomas[poy.thomas@epa.gov]; Singer, Joshua[Singer.Joshua@epa.gov]; Arcaute, Francisco[Arcaute.Francisco@epa.gov]; Cannon, Phillippa[Cannon.Phillippa@epa.gov]; Deamer, Eileen[deamer.eileen@epa.gov]; Fortin, Denise[Fortin.Denise@epa.gov]; Nowotarski, Allison[nowotarski.allison@epa.gov]; Reshkin, Karen[Reshkin.Karen@epa.gov]; Loop, Travis[Loop.Travis@epa.gov]; Purchia, Liz[Purchia.Liz@epa.gov]; Henry, Timothy[henry.timothy@epa.gov]; Lee, Monica[Lee.Monica@epa.gov]; Grantham, Nancy[Grantham.Nancy@epa.gov]; Davis, CatherineM[Davis.CatherineM@epa.gov]
From: Cassell, Peter
Sent: Wed 12/30/2015 3:06:05 PM
Subject: Re: Flint Water Clips Dec. 30, 2015

Congressman Kildee was on the Rachel Maddow show last night. The clip is available at: on.msnbc.com/1krBTbv. Sorry that this wasn't in the rest of the clips.

From: Cassell, Peter
Sent: Wednesday, December 30, 2015 8:42 AM
To: Peterson, John; Hedman, Susan; Kaplan, Robert; Hyde, Tinka
Cc: Kelley, Jeff; Rowan, Anne; Beckmann, Ronna Erin; Harrison, Melissa; Abrams, Dan; Poy, Thomas; Singer, Joshua; Arcaute, Francisco; Cannon, Phillippa; Deamer, Eileen; Fortin, Denise; Nowotarski, Allison; Reshkin, Karen; Loop, Travis; Purchia, Liz; Henry, Timothy; Lee, Monica; Grantham, Nancy; Davis, CatherineM
Subject: Flint Water Clips Dec. 30, 2015

FLINT DRINKING WATER CLIPS
US. EPA REGION 5 – AS PREPARED BY PETER CASSELL (ORA/OEC/PA) ON DEC. 30, 2015

Snyder apologizes, Wyant resigns in Flint water crisis (Detroit Free Press)
Flint water report prompts apologies, resignations (Detroit News)
Michigan Regulator Resigns Amid Flint's Lead-in-Water Crisis (AP)
Task force lays most blame for Flint water crisis on MDEQ (Michigan Radio)
Flint water scandal: Snyder apologizes, DEQ director resigns (Fox 2 Detroit)
Flint leaders applaud DEQ director's resignation, governor's apology (MLive.com)
Michigan Gov. Rick Snyder apologizes for lead levels in Flint water (Detroit 4)
Director Dan Wyant resigns after task force blasts MDEQ over Flint water crisis (MLive.com)
Auditor: State erred on Flint water but didn't mislead feds (AP/Crain's Detroit)
BREAKING: DEQ Director Resigns Over Flint Water Crisis (West Bloomfield Patch)
MDEQ Director Wyant resigns over Flint water crisis, Snyder apologizes (Michigan Radio)
Letter says the state department is at fault in Flint Water Crisis (WLNS News 6)

Snyder apologizes, Wyant resigns in Flint water crisis (Detroit Free Press)
Paul Egan, Detroit Free Press9:07 p.m. EST December 29, 2015
http://www.freep.com/story/news/local/michigan/2015/12/29/deq-director-wyant-resigns-over-flint-water-crisis/78027052/

LANSING — Gov. Rick Snyder apologized to the City of Flint on Tuesday for the drinking water crisis that has left children poisoned by lead and announced that he accepted the resignation of Michigan Department of Environmental Quality Director Dan Wyant.

Snyder said in a news release that there will be other personnel changes at the DEQ and that the moves he announced are among "initial steps" he is taking to assure the safety of Flint residents, with more action to come.

“I want the Flint community to know how very sorry I am that this has happened," Snyder said. "And I want all Michigan citizens to know that we will learn from this experience, because Flint is not the only city that has an aging infrastructure."

The governor, who previously stood by his DEQ director amid the controversy, said, "Dan Wyant has offered his resignation, and I’ve determined that it’s appropriate to accept it."

Before joining the Snyder administration as DEQ director, Wyant was president and chief operating officer of the Edward Lowe Foundation, which promotes entrepreneurship and helps business owners grow their companies. Before that, he served as director of the Michigan Department of Agriculture under Govs. John Engler and Jennifer Granholm.

Brad Wurfel, the DEQ public information officer who apologized after criticizing a researcher's reports of rising lead levels in the blood of Flint children as irresponsible, also resigned Tuesday, a spokesman for Snyder confirmed.

The governor said he acted based on interim findings of the Flint Water Advisory Task Force, which he appointed Oct. 21 to investigate the crisis and is continuing its work. He received a letter Tuesday morning that was highly critical of the DEQ.

The letter from the task force said the "primary responsibility" for what happened in Flint lies with the DEQ; the agency "failed in its responsibility" to ensure safe drinking water for Michigan residents and "must be held accountable for that failure." It was signed by task force members Matt Davis, Chris Kolb, Larry Reynolds, Eric Rothstein and Ken Sikkema.

The Free Press reported Thursday that records obtained by the Michigan ACLU and Virginia Tech researcher Marc Edwards show that elevated lead levels in Flint's drinking water would have spurred action months sooner if the results of city testing that wrapped up in June had not been revised by the DEQ to wrongly indicate the water was safe to drink.

Auditor General Doug Ringler said in a letter released Monday that it was appropriate for the DEQ to disqualify two samples with high lead levels that did not meet the sampling criteria. But the records obtained by the ACLU and Edwards also show that a DEQ official sent Flint an e-mail saying that samples as of late June showed Flint's water had lead levels above the "action level" that would require public notice and remedial action, and he hoped the city could send the remaining required samples quickly and that they would be below the action level for lead.

The records also suggest the DEQ was not as strict in disqualifying samples with low lead levels that did not meet the testing criteria as it was in disqualifying samples with high lead readings.

'It's ... not enough'

Flint, which was under the control of a state-appointed emergency manager at the time of the cost-cutting move, switched its drinking water source, starting in April 2014, from Lake Huron water supplied by Detroit to the much more polluted and corrosive water from the Flint River.

The state has acknowledged that it misinterpreted a federal rule and failed to require Flint to add needed corrosion-control chemicals that would have prevented lead from leaching into the drinking water from pipes, connections and fixtures.

That change in the drinking-water source brought immediate complaints from Flint residents about the taste, smell and appearance of the water. The lead tests of the water could have spurred action in July, but it was not until October — after blood test results analyzed by Hurley Children's Hospital pediatrician Dr. Mona Hanna-Attisha showed elevated lead levels in Flint children — that the DEQ admitted making a mistake by failing to require the addition of corrosion-control chemicals to the Flint River water. The state also then provided funds to help Flint reconnect to Lake Huron water supplied by Detroit.

Lead can cause irreversible brain damage in children and has also been linked to behavioral problems.

Melissa Mays, a Flint resident who drank the contaminated water along with her three boys, said she was more shocked by Snyder's apology than by Wyant's resignation. She welcomed the announcements but said more DEQ officials need to be removed because Flint residents can't trust those officials to make sure their water is safe to drink today.

"This all should have happened a long time ago, and it's also not enough," she said.

Mays questioned why Snyder has not endorsed Flint Mayor Karen Weaver's declaration of a state of emergency in Flint, which she said would help secure federal funding to help rectify problems.

Snyder spokesman Dave Murray said "no formal request has been made to the state" to declare a state of emergency in Flint.

"We are committed to working with Mayor Weaver and Genesee County leaders," and the emergency management division of the Michigan State Police is working with city and county officials on potential avenues for federal aid, Murray said.

The crisis has prompted a federal class-action and calls for an investigation by the U.S. Department of Justice.

Goals: Openness, trust

Snyder said "changes in leadership and staff are not enough. I understand there can be disagreements within the scientific community. That is why I have directed both the departments of Environmental Quality and Health and Human Services to invite every external scientist who has worked on this issue to be our partners in helping us improve Flint water."

Snyder said he wants to "share research on water and blood-lead level testing so we can arrive at accurate and mutually supported conclusions. Together, we should work to affirm that we're using the very best testing protocols to ensure Flint residents have safe drinking water and that we're taking steps to protect their health over the short and long term."

The other personnel changes at DEQ referenced by Snyder, aside from Wurfel's resignation, have not yet been made, Murray said.

“I know many Flint citizens are angry and want more than an apology," Snyder said. "That’s why I’m taking the actions today to ensure a culture of openness and trust. We’ve already allocated $10 million to test the water, distribute water filters, and help in other ways. Last week, I called Flint Mayor Karen Weaver, and we’re going to meet soon to discuss other ways the state can offer assistance.

“These are only initial steps - we fully expect to take more actions following the recommendations of our task force. When it comes to matters of health and quality of life, we’re committed to doing everything we can to protect the well-being of our citizens.”

The letter from the task force said a minimalist culture of "technical compliance" had developed in the DEQ's Office of Drinking Water and Municipal Assistance and "it led to MDEQ's failure to recognize a number of indications that switching the water source in Flint would — and did — compromise both water safety and water quality."

The office "must adopt a posture that is driven not by this minimalist technical compliance approach, but rather by one that is founded on what needs to be done to assure drinking water safety," the letter said.

The letter also said that both the tone and substance of DEQ statements to the public during the crisis were "completely unacceptable," marked by a "persistent tone of scorn and derision."

Task force members met with Wyant, and while he agreed with many of the task force's interim conclusions, "it was disappointing to hear his weak defense of the (corrosion control) decision," the letter said.

Senate Minority Leader Jim Ananich, D-Flint, said the personnel changes Snyder announced could be a sign of progress if they "lead to a more aggressive response and resources to improve public health."

"I still believe that legislative hearings will be required to get all the answers and help shape the necessary policy changes, and ensure this never happens again," Ananich said in a news release.

"Dan Wyant gets to walk away from this crisis, but the people of Flint do not," said Lonnie Scott, the group's executive director. "There's a lot we don't know about this man-made catastrophe. What did Gov. Snyder know and when did he know it? We need complete transparency so that justice for the families of Flint can be realized and the proper people can be held accountable."

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Flint water report prompts apologies, resignations (Detroit News)

Jim Lynch The Detroit News9:13 a.m. EST December 30, 2015
http://www.detroitnews.com/story/news/politics/2015/12/29/deq-director-wyant-resigns-due-flint-water-crisis/78028616/

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(Photo: Dale G. Young / The Detroit News)

Michigan’s top environmental official resigned Tuesday after an independent task force delivered its initial findings on the Flint water contamination crisis — conclusions that also prompted an apology from Gov. Rick Snyder.

Dan Wyant, director of the Department of Environmental Quality since 2011, tendered his resignation Tuesday, marking the second agency shakeup in just over two months related to Flint's lead-tainted drinking water problems. The industrial city has been plagued by lead issues since an April 2014 switch to the Flint River as its water source.

A Snyder-appointed task force investigating the long-running situation announced it found Tuesday the DEQ "primarily responsible for failing to ensure safe drinking water in Flint." Snyder accepted the initial findings and Wyant's resignation — "I've determined that it's appropriate to accept it, he said — and then issued an apology.

"I want the Flint community to know how very sorry I am that this has happened," Snyder said in a press release. "And I want all Michigan citizens to know that we will learn from this experience, because Flint is not the only city that has an aging infrastructure."

"I know many Flint citizens are angry and want more than an apology. That's why I'm taking the actions today to ensure a culture of openness and trust."

A Flint Water Advisory Task Force co-chair blamed the DEQ's passive culture for Flint's water ills.

"Flint residents were exposed to toxic levels of lead in their water primarily due to a regulatory culture of passive technical compliance that is simply insufficient to the task of public protection," wrote Ken Sikkema, a former state senator. "We also believe that the dismissive and disrespectful tone of much of the MDEQ's response to public concerns is unacceptable."

The water switch, made while Flint was under the leadership of a Snyder-appointed emergency manager, immediately led to resident complaints about the smell, taste and discoloration of their drinking water. Eventually, researchers found a link between the switch and a rise in lead poisoning among city children.

Lead poisoning can cause learning disabilities and, at high levels, may lead to seizures, coma and death, according to the Centers for Disease Control and Prevention.

Wyant could not be reached for comment Tuesday. In October, Wyant admitted the DEQ erred in its application of the federal Lead and Copper Rule, designed to ensure safe drinking water for residents.

Late on Tuesday, DEQ spokesman Brad Wurfel resigned as well.

Flint was allowed to begin drawing its drinking water from the river without any corrosion controls in place to prevent lead in old plumbing connections from leaching. The task force said the DEQ failed in the regulatory handling of Flint's water problems, the "substance and tone" in the department's response as well as its "interpretation of the Lead and Copper Rule."

State Sen. Jim Ananich, D-Flint, criticized the DEQ culture Tuesday, saying workers were more concerned with following rules than informing the public about potential problems.

"When you have lead in the water, I don't care if you follow the rules or not: You need to notify the public first," Ananich said.

Critics have put increasing pressure on Snyder's administration to answer for the Flint water decisions in the last two years. Among the harshest critics is Marc Edwards, a Virginia Tech researcher whose water sampling at Flint homes and public record requests have helped keep the spotlight on the state government's actions.

But Edwards said Wyant should not be the one on the chopping block.

"I'm glad that someone is sorry and someone is being held accountable," Edwards said.

“But Dan Wyant would not be at the top of my list — or even on the list. I feel strongly he was misled by his staff at every point, and he was put in publicly embarrassing situations by the staff’s misinformation.”

Dr. Mona Hanna-Attisha, a Hurley Medical Center pediatrician who uncovered lead exposure in city children following the switch, echoed Edwards by saying DEQ staffers’ mistakes led to Flint’s problems.

“(Wyant) wasn’t directly involved,” she said. “There are other people, particularly in (the Office of Drinking Water and Municipal Assistance), that need to take some responsibility. ... (Wyant) was a nice person being fed bad information.”

In 2013, Flint agreed to create a new regional water authority in an attempt to save money. The city had tried to negotiate lower rates with former provider Detroit Water and Sewerage Department for years, to little avail.

But the Karegondi Water Authority will not be completed until some time next year. In the interim, Flint looked to its river to provide drinking water. That water turned out to be far more corrosive than the Lake Huron water used by the Detroit system.

With pressure mounting from troublesome water samples and health studies, Flint reconnected to the Detroit system in October.

Snyder previously was elusive in acknowledging the extent of the state’s responsibility for the lead contamination of the city’s water when it switched to the more corrosive Flint River in 2014, saying he was awaiting the task force report. On Tuesday, the governor was more contrite.

“We’ve already allocated $10 million to test the water, distribute water filters, and help in other ways,” Snyder said. “Last week, I called Flint Mayor Karen Weaver, and we’re going to meet soon to discuss other ways the state can offer assistance.”

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Michigan Regulator Resigns Amid Flint's Lead-in-Water Crisis (AP)
By DAVID EGGERT, ASSOCIATED PRESS
LANSING, Mich. — Dec 29, 2015, 7:16 PM ET
http://abcnews.go.com/Politics/wireStory/michigan-official-resigns-amid-flint-water-issue-35996502

Michigan's top environmental regulator resigned Tuesday after elevated levels of lead were found in Flint children during a drinking water crisis that a task force blamed primarily on his agency.

Gov. Rick Snyder accepted the resignation of Department of Environmental Quality Director Dan Wyant and apologized for what occurred in Flint, which switched its drinking water supply in a cost-cutting move while under state financial management. Communications director Brad Wurfel also resigned, and Snyder said he plans additional personnel changes in the agency.

Wyant quit the same day a task force appointed by the Republican governor reported that the department was primarily responsible for the fiasco because it did not require Flint to keep corrosive water from leaching lead from service pipes into residents' homes and belittled concerns from the public. Exposure to lead can cause behavior problems and learning disabilities in children.

"I want the Flint community to know how very sorry I am that this has happened," Snyder said in a written statement. "And I want all Michigan citizens to know that we will learn from this experience, because Flint is not the only city that has an aging infrastructure."

The five-member task force, which previously brought up concerns about a lack of organization in responding to the disaster, said the environmental department's Office of Drinking Water and Municipal Assistance has a "minimalist approach" to regulatory oversight in which "technical compliance" is sufficient. It faulted the agency for a "tone of scorn and derision" toward the public, including outside water and health experts who raised alarm bells.

The task force confirmed that the state did not follow the federal Lead and Copper Rule when Flint disconnected from Detroit's water system in April 2014 and switched to Flint River water while waiting to connect to a new regional water authority.

Detroit's water from Lake Huron had been treated for corrosion. State officials thought that after Flint made the transition to the river it could test the new water for lead over two six-month intervals to determine potential corrosion treatment instead of needing to immediately add corrosion controls. Flint returned to Detroit's water in October after a public health emergency was declared.

The task force, which met with Wyant on Dec. 16, noted his substantial agreement with many of its conclusions but expressed disappointment with his "weak defense" regarding the federal rule.

The U.S. Environmental Protection Agency said in a November memo that there are "differing possible interpretations" of the Lead and Copper Rule, explaining that it does not explicitly discuss a scenario like in Flint.

But task force members said, "Individuals and agencies responsible must be held accountable in a timely fashion."

They also cited recent revelations of the Department of Health and Human Services' apparent early knowledge of and silence about elevated blood-lead levels, and said the committee's final report in early 2016 would review local governments' decision processes while under emergency management.

"I know many Flint citizens are angry and want more than an apology. That's why I'm taking the actions today to ensure a culture of openness and trust," Snyder said.

Wyant, 56, led the Environmental Quality Department for nearly five years. He previously served as the state's agricultural director under Republican Gov. John Engler and Democratic Gov. Jennifer Granholm.

"If these personnel moves and change in tone lead to a more aggressive response and resources to improve public health, then we are finally making progress," said Senate Minority Leader Jim Ananich, a Democrat from Flint.

Follow David Eggert at http://twitter.com/DavidEggert00 . His work can be found at http://bigstory.ap.org/author/david-eggert

Task force lays most blame for Flint water crisis on MDEQ (Michigan Radio)

By VINCENT DUFFY • 14 HOURS AGO
SHARETwitter Facebook Google+ Email
http://michiganradio.org/post/task-force-lays-most-blame-flint-water-crisis-mdeq#stream/0
MDEQ Director Dan Wyant at a recent press conference.
CREDIT SCREEN GRAB / MLIVE USTREAM

A task force appointed by Gov. Rick Snyder says Michigan's environmental regulatory agency is primarily responsible for the state's failure to ensure safe drinking water for Flint residents.

The Flint Water Advisory Task Force says in a letter to Snyder that the state Department of Environmental Quality "must be held accountable for that failure."

The letter was made public Tuesday. You can read it here.

Corrosive Flint River water leached lead from service pipes into homes after the city switched last year from Detroit water. Elevated blood-lead levels later were found in some children.

Department of Environmental Quality Director Dan Wyant and spokesman Brad Wurfel both resigned Tuesday.

Task force co-chair Ken Sikkema says in the letter that "Flint residents were exposed to toxic levels of lead in their water primarily due to a regulatory culture of passive technical compliance."

The FWATF letter stated in part:

“We believe the primary responsibility for what happened in Flint rests with the Michigan Department of Environmental Quality (MDEQ). Although many individuals and entities at state and local levels contributed to creating and prolonging the problem, MDEQ is the government agency that has responsibility to ensure safe drinking water in Michigan. It failed in that responsibility and must be held accountable for that failure.”

“The City of Flint’s water customers—fellow Michigan citizens—were needlessly and tragically exposed to toxic levels of lead through their drinking water supply. They deserve a commitment to properly assess responsibility and ensure accountability. They also deserve a commitment to needed mitigation in both the short and long term. The Flint water crisis never should have happened. Having failed to prevent it, state government should coordinate a sustained, public-health-focused response to remedy, to the fullest extent possible, the impacts on the Flint community.”

The letter outlined three areas where MDEQ failed:

Regulatory Failure
Failure in Substance and Tone of MDEQ Response to the Public
Failure in MDEQ Interpretation of the Lead and Copper Rule
This is the second letter sent by the Task Force. The first, sent earlier this month, made several recommendations concerning coordination of state efforts that were supported and implemented by Governor Snyder.

The full FWATF report is expected to be completed in early 2016.

Members of the Task Force include:

Matthew Davis, M.D., M.A.P.P., is professor of pediatrics and internal medicine at the University of Michigan Health System and professor of public policy at the Gerald R. Ford School at the University of Michigan.

Chris Kolb is president of the Michigan Environmental Council.

Lawrence Reynolds, M.D., is a pediatrician in Flint who serves as president of the Mott Children's Health Center.

Eric Rothstein is a national water issues consultant and principal at the Galardi Rothstein Group. He served as an independent advisor on the creation of the Great Lakes Water Authority.

Ken Sikkema is a senior policy fellow at Public Sector Consultants. (Full Disclosure - he is also a regular commenter on Michigan Radio.)

The FWATF was formed by Governor Snyder to review actions regarding the Flint water system and offer recommendations both for Flint and Michigan to protect the health and safety of state residents.

Flint water scandal: Snyder apologizes, DEQ director resigns (Fox 2 Detroit)

Gov. Rick Snyder announced changes at the Michigan DEQ.
http://www.fox2detroit.com/news/local-news/66000998-story

POSTED:DEC 29 2015 10:25PM EST
UPDATED:DEC 29 2015 11:24PM EST
FLINT, Mich. - Gov. Rick Snyder says he's sorry for Flint's water crisis as one of his top appointees resigns.
The director of the state's department of environmental quality Dan Wyant resigned.

Wyant was in charge of keeping the water safe. When Flint switched its drinking water source from Lake Huron water supplied by detroit...to the flint river - to save money -- corrosion flowed through the pipes.

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Tests showed elevated levels of lead in the city's drinking water back in June. But the state didn't take action until October after blood testing showed high lead levels in Flint's children.
Flint water scandal: Snyder apologizes, DEQ director resigns
Snyder's office issued a press release Tuesday:

"I want the Flint community to know how very sorry I am that this has happened," he said. "And I want all Michigan citizens to know that we will learn from this experience, because Flint is not the only city that has an aging infrastructure.

"When I became aware that the city of Flint's water showed elevated lead levels and that the state's handling of the situation was being questioned," he said. "I requested funding to switch the source back to the Great Lakes Water Authority and appointed an independent task force to identify possible missteps and areas for improvement.

"The task force has done an exceptional job, reviewing stacks of documents and interviewing scores of Flint, Genesee County, state and federal officials ... We'll continue to work with the community members to make sure we hear and respond to their concerns.

"MDEQ Director Dan Wyant has offered his resignation, and I've determined that it's appropriate to accept it. I'm also making other personnel changes at MDEQ to address problems cited by the task force."

In a previous FOX 2 report it was discovered a year after the city began using the Flint River as its water source; a local hospital's study found the number of Flint kids under the age of 5 years old with above average lead levels nearly doubled city-wide and in some cases, tripled.

Virginia Tech University tested resident Ronda Thornton's water. Anything more than 30 micrograms a liter is a sign of serious lead contamination. Hers registered 138.

"I know many Flint citizens are angry and want more than an apology," Snyder said. "That's why I'm taking the actions today to ensure a culture of openness and trust. We've already allocated $10 million to test the water, distribute water filters, and help in other ways. Last week, I called Flint Mayor Karen Weaver, and we're going to meet soon to discuss other ways the state can offer assistance."

"But changes in leadership and staff are not enough. I understand there can be disagreements within the scientific community. That is why I have directed both the departments of Environmental Quality and Health and Human Services to invite every external scientist who has worked on this issue to be our partners in helping us improve Flint water. Let's share research on water and blood lead level testing so we can arrive at accurate and mutually supported conclusions. Together, we should work to affirm that we're using the very best testing protocols to ensure Flint residents have safe drinking water and that we're taking steps to protect their health over the short and long term."

"These are only initial steps - we fully expect to take more actions following the recommendations of our task force. When it comes to matters of health and quality of life, we're committed to doing everything we can to protect the well-being of our citizens."

Flint leaders applaud DEQ director's resignation, governor's apology (MLive.com)

http://www.mlive.com/news/flint/index.ssf/2015/12/gov_rick_snyder_accepts_mdeq_h.html

By Jiquanda Johnson | jjohns16@mlive.com

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on December 29, 2015 at 6:41 PM, updated December 29, 2015 at 8:44 PM

DEQ spokesman also resigns over Flint water crisis, says city 'didn't feel like we cared'

Flint leaders applaud DEQ director's resignation, governor's apology

Congressman Dan Kildee will again discuss Flint water on 'The Rachel Maddow Show'

Gov. Rick Snyder still doesn't get it when it comes to Flint water crisis

Director Dan Wyant resigns after task force blasts MDEQ over Flint water crisis

All Stories

FLINT, MI – Mayor Karen Weaver and other local leaders say the resignation of Michigan Department of Environmental Quality Director Dan Wyant and release of Flint Water Task Force findings Tuesday are the first steps toward holding people accountable for Flint's water crisis.

"There is some accountability being put in place and that's a good thing," Weaver said. "That's what is happening and I think that's a good sign because it shows that our voices have been heard and that they will continue to be heard."

According to a statement issued by Gov. Rick Snyder on Dec. 29, he has accepted Wyant's resignation after findings from a report by the task force, which was created by Snyder in October to look into Flint's water crisis. In the same statement, Snyder also said he was "sorry" to the Flint community for the water issues.

"I know many Flint citizens are angry and want more than an apology," Snyder said. "That's why I'm taking the actions today to ensure a culture of openness and trust ... Last week, I called Flint Mayor Karen Weaver, and we're going to meet soon to discuss other ways the state can offer assistance."

Weaver confirmed that she will be meeting with Snyder after the first of the year.

"I hope this will help move Flint forward," she said. "One thing that has been an issue for us here in Flint has been that broken trust. We will have a new person that we will be working with, and that's a positive step."

The task force report, which is preliminary, revealed that the MDEQ failed the city in multiple areas including regulatory failures, substance and tone of the MDEQ's response to public and the interpretation of the federal lead and copper rule.

"We believe the primary responsibility for what happened in Flint rests with the Michigan Department of Environmental Quality (MDEQ)," said the preliminary report. "Although many individuals and entities at state and local levels contributed to creating a prolonging problem, MDEQ is the government agency that has responsibility to ensure safe drinking water in Michigan. It failed in that responsibility and must be held accountable."

State Rep. Sheldon Neeley, D-Flint, said that he and others in the city have called for legislative hearings regarding the water crisis and that Wyant's departure is just the first, not the only, person held responsible for the condition of Flint's water.

"For months, the call has been public and aggressive for Dan Wyant to remove himself from his position, or have Gov. Rick Snyder do the deed for him," Neeley said in a statement issued Dec. 29. "There are many culpable parties involved in the continued decline of health and safety during the water crisis in the city of Flint, and Wyant was just one figure in a menagerie of offenders."

Neeley, who along with Sen. Jim Ananich, D-Flint, have been pushing for legislative hearings on Flint's water crisis, went on to say there is still "cleanup do be done" and he is "glad" that Wyant has stepped down in what Neeley considers a "disorganized and flawed DEQ."

The task force's report also says members spoke with Wyant on Dec. 16 and they were not pleased with how he responded to the city's water crisis and he was in agreement with some of their findings.

"It is our understanding that he has drawn similar conclusions in his own evaluation of MDEQ's role in the Flint water crisis," said the report. "At the same time, it was disappointing to hear his weak defense of the CCT (corrosion control treatment) decision based on the EPA's November 2015 memorandum."

Both Ananich and Neeley's push led to an independent review by the Office of State Auditor Genera,l which made it clear in a Dec. 23 letter that corrosion control should have been maintained during Flint's transition from Detroit water to Flint River water.

The review was based on a series of questions sent to the auditor from Ananich in October.

The corrosiveness of Flint River water is blamed for lead that leached from pipes into drinking water, causing elevated levels of lead in the blood of Flint children.

"I think the best apology (Snyder) can offer the residents of Flint and the rest of the state is a promise that this will never happen again," Ananich said. "The proof is in the long-term commitment. I'm going to continue to work to make sure that we get that."

Michigan Gov. Rick Snyder apologizes for lead levels in Flint water (Detroit 4)

DEQ head Dan Wyant's resigns after task force blames department for crisis

By Jason Colthorp – Reporter

http://www.clickondetroit.com/news/michigan-official-resigns-amid-flint-water-issue_

LANSING, Mich. - Gov. Rick Snyder issued an apology Tuesday as Dan Wyant, his head of the Department of Environmental Quality, resigned after a task force lead by the state's auditor general blasted the DEQ for it's role in Flint's water crisis.

The state's mishandling of Flint's water system ultimately exposed Flint residents to dangerously elevated levels of lead.

“I want the Flint community to know how very sorry I am that this has happened,” Snyder said in a statement. “And I want all Michigan citizens to know that we will learn from this experience.”

The governor's apology and the DEQ head's resignation has helped to temper concerns that no one cared about Flint said the city's mayor Karen Weaver.

“One of the things we've always talked about is accountability and that seems to be what's happening,” said Weaver. “It also let us know here in Flint that our voice is being heard.”

Snyder's apology and Wyant's resignation come after the task force released their finding that the DEQ was primarily at fault for Flint's unhealthy level of lead in their drinking water.

“Although many contributed to creating and prolonging the problem, MDEQ is the government agency that has responsibility to ensure safe drinking water in Michigan,” the task force said in a written statement. “It failed in that responsibility.”

For many Flint residents like Kim Peterson, Tuesday's announcements do little to help them feel confident about the safety of their drinking water. Peterson says she is still hesitant to drink the water even though it is again coming from a healthy source in Lake

Huron.

“I take it to mean that something was really wrong with this whole system of checks and balances,” she said.

“You don't trust it because you've heard so many conflicting things from so many different people, so we still continue to buy the water.”

Mayor Weaver, however, believes Snyder’s apology is a first step toward rebuilding trust: “This is a good step to get some things started because people had lost faith and they had lost trust.”

Snyder has promised more steps will be taken after the task force releases its final and full report.

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Director Dan Wyant resigns after task force blasts MDEQ over Flint water crisis (MLive.com)
http://www.mlive.com/lansing-news/index.ssf/2015/12/deq_director_dan_wyant_resigns.html
Michigan Department of Environmental Quality Director Dan Wyant speaks during a news conference in Flint on Oct. 2, 2015. (Danny Miller | MLive.com)
PrintEmail
By Emily Lawler | elawler@mlive.com
on December 29, 2015 at 4:39 PM, updated December 29, 2015 at 6:51 PM
LANSING, MI -- Gov. Rick Snyder on Tuesday accepted a resignation from Michigan Department of Environmental Quality Director Dan Wyant after a task force laid responsibility for the Flint water crisis at the feet of the department.
Snyder, in a statement, announced Wyant's resignation and apologized to Flint residents after he received a letter from the Flint Water Advisory Task Force.
"...MDEQ Director Dan Wyant has offered his resignation, and I've determined that it's appropriate to accept it. I'm also making other personnel changes at MDEQ to address problems cited by the task force," Snyder said.
Wyant and the DEQ have come under fire in recent months for handling a Flint drinking water crisis that lead to corrosive water running through city pipes and resulted in children with elevated levels of lead. In October, Wyant acknowledgeda mistake in oversight from his office, saying DEQ officials were confused about federal regulations on making the drinking water less corrosive.
The task force in its letter blamed the department for the crisis.
"We believe the primary responsibility for what happened in Flint rests with the Michigan Department of Environmental Quality (MDEQ)," read the letter to Snyder.
"Although many individuals and entities at state and local levels contributed to creating and prolonging the problem, MDEQ is the government agency that has responsibility to ensure safe drinking water in Michigan. It failed in that responsibility and must be held accountable for that failure."
The task force cited DEQ's involvement as regulatory failure, failure in substance and

tone of response to the public and a failure of interpreting the lead and copper rule.

Gov. Rick Snyder recently named the Flint water crisis as his biggest disappointment in 2015.

Wyant had a long track record of service for the state. He served as director of the Michigan Department of Agriculture under both Democratic Gov. Jennifer Granholm and Republican Gov. John Engler before Gov. Rick Snyder tapped him to head up the DEQ in 2011.

He shepherded the department through a transition into being its own entity again after Gov. Jennifer Granholm had combined it with the Department of Natural Resources, forming the Department of Natural Resources and Environment. He also led the "quality of life group" within state government, meaning he coordinated efforts between the DNR, DEQ and Department of Agriculture and Rural Development.

The statement from Snyder alluded to other structural changes within the DEQ, and spokesperson Dave Murray said those decisions would be made in the coming days.

DEQ spokesperson Brad Wurfel did not immediately return a call for comment.

Wyant's resignation met with mixed reaction from political groups and leaders.

Senate Minority Leader Jim Ananich (D-Flint) released the following statement:

"If these personnel moves and change in tone lead to a more aggressive response and resources to improve public health, then we are finally making progress. I still believe that legislative hearings will be required to get all the answers and help shape the necessary policy changes, and ensure this never happens again."

Attorney General Bill Schuette praised Wyant's service to the state.

"I am saddened to hear of the resignation of Department of Environment Quality Director Dan Wyant. In my 20-plus years of knowing him, Dan has been a hardworking, dedicated public servant. I am committed to working with all parties, including the legislature and Governor, to ensure the public's health and the well being of Michigan residents."

Democratic Congressman Dan Kildee, who represents Flint, said the steps taken today were appropriate but encouraged further action.

"Governor Snyder's apology over the Flint water crisis is appropriate, as are personnel changes announced today at the Department of Environmental Quality," Kildee said.

"Through this ongoing crisis, the people of Flint did nothing wrong – they are victims of this failure of government. The State of Michigan must not only acknowledge its role in this crisis, but also take responsibility and act right away to make it right."

He urged the state to establish a fund to ensure that kids receive developmental, nutritional and educational resources to help overcome the effects of their lead exposure.

Rep. Sheldon Neeley, D-Flint, said Wyant was not the only offender.

"For months, the call has been public and aggressive for Dan Wyant to remove himself from his position, or to have Gov. Rick Snyder do the deed for him. There are many culpable parties involved in the continued decline of health and safety during the water crisis in the city of Flint, and Wyant was just one figure in a menagerie of offenders," Neeley said.

"While there is still much cleanup to be done, I am glad Mr. Wyant realized he could no longer continue as the head of the disorganized and flawed DEQ, and I call on Gov. Snyder to take careful effort in repairing this department so that it earns back the trust of the people of Flint and this great state.

Progress Michigan said there had been a lack of accountability for the Flint water crisis. "So far under Gov. Rick Snyder's watch, there has been zero accountability in this crisis and that continues today," said Lonnie Scott, executive director of Progress Michigan. "Dan Wyant gets to walk away from this criss, but the people of Flint do not. There's a lot we don't know about this man-made catastrophe. What did Gov. Snyder know and when did he know it? We need complete transparency so that justice for the families of Flint can be realized and the proper people can be held accountable. All documentation related this this crisis needs to be released to the public immediately."
Emily Lawler is a Capitol/Business reporter for MLive. You can reach her atelawler@mlive.com, subscribe to her on Facebook or follow her on Twitter:@emilyjanelawler.

Auditor: State erred on Flint water but didn't mislead feds (AP/Crain's Detroit)
http://www.crainsdetroit.com/article/20151228/NEWS01/151229867/auditor-state-erred-on-flint-water-but-didnt-mislead-feds By David Eggert
Associated Press
Michigan Department of Environmental Quality Environment More +
LANSING — The director of Michigan's Department of Environmental Quality has resigned after the Flint Water Task Force delivered its findings on the the city's water contamination crisis to Gov. Rick Snyder.
Snyder said Tuesday afternoon in a statement that he accepted the resignation of Dan Wyant and plans to make "other personnel changes at MDEQ to address problems cited by the task force.
"But changes in leadership and staff are not enough."
In a preliminary report released Monday, Michigan's auditor general said state regulators should have required Flint to treat its corrosive drinking water to keep lead from leaching from service lines into people's homes but did not purposely mislead federal officials about the lack of corrosion control.
Doug Ringler, citing a memo issued last month by the U.S. Environmental Protection Agency, concluded that the Michigan Department of Environmental Quality erred in not requiring the city to immediately combat corrosion when it switched from Detroit's system to the Flint River in April 2014 in a cost-cutting move while under state financial management. State officials interpreted federal rules to mean Flint could make the transition and then test the new water for lead over two six-month intervals to determine potential corrosion treatment.
Flint children have been found to have elevated levels of lead in their blood since the water change. Gov. Rick Snyder's administration initially downplayed concerns but later committed funding to reconnect Flint to Detroit and to provide filters, testing and other services.
Ringler was already conducting an audit of Michigan's Office of Drinking Water and Municipal Assistance when the Flint corrosion issue arose. At the request of Senate Minority Leader Jim Ananich, he answered questions specific to Flint's lead contamination, including concerns that state regulators misled federal environmental regulators.
In February, a DEQ water supervisor told the EPA that Flint had a corrosion control program in place. But in April, an EPA official confirmed through another DEQ official that the city was not practicing corrosion treatment, according to emails.

The EPA apparently interpreted the word "program" to mean treatment, while the DEQ meant it as testing to determine if corrosion controls would be needed in the future.

"Based on our review of this and other emails, we have no specific reason to believe that DEQ willfully misrepresented the information to the EPA," Ringler wrote in a letter dated Wednesday and made public Monday.

The auditor concluded, however, that regardless of confusion over the federal rule, the state should have required Flint to start pursuing corrosion treatment in March after the first six months of testing showed too-high lead levels instead of waiting until August after a second six-month period. He also said the DEQ did not verify that Flint was correctly sampling water from houses only with lead pipes or lead service lines. He suggested that the department consider doing so.

"We agreed with the findings in the Auditor General's review," DEQ spokesman Brad Wurfel said. "The findings align with our internal department review. We appreciate the Auditor General's work to provide a fair and well considered look at some key issues."

The Republican governor has come under scrutiny for the Flint fiasco. Spokesman Dave Murray said the letter "includes some criticisms, but also reflects that state officials were following accepted protocols, or in one case, an interpretation of the corrosion control program that the EPA later clarified. But we need to do better in ensuring Flint residents have safe water and tracking children affected by elevated lead levels."

Ananich, D-Flint, said "there are serious failings in our system that must be addressed" and again called for GOP leaders to schedule legislative hearings. They have rejected the requests, citing the work of a task force formed by Snyder.

The auditor's letter did not provide clarity on who specifically decided to use the Flint River for water. It was supposed to be an interim source until the city could join a new system getting water from Lake Huron.

Ringler noted that the city council voted in March 2013 to support moving to the Karegnondi Water Authority but was "silent" on using the river temporarily. Flint was being run by a Snyder-appointed manager until this past April and remains under some state oversight.

BREAKING: DEQ Director Resigns Over Flint Water Crisis (West Bloomfield Patch)

Gov. Rick Snyder apologizes to Flint, pledges to help officials address public health crisis surrounding dangerous lead levels in water.

http://patch.com/michigan/westbloomfield/breaking-deq-director-resigns-over-flint-water-crisis

West Bloomfield, MI

By BETH DALBEY (Patch Staff) December 29, 2015

LANSING, MI – The director of the Michigan Department of Environmental Quality has resigned over the Flint water debacle, Gov. Rick Snyder said Tuesday.

DEQ Director Dan Wyant “has offered his resignation, and I’ve determined that it’s appropriate to accept it,” Snyder said in a statement.

The governor said he will be “making other personnel changes at MDEQ” as well.

State officials encouraged officials in Flint, where the mayor has asked for federal emergency reliefto deal with a public health crisis resulting from high lead levels in water, to understate the results, according to e-mails obtained by the American Civil Liberties Union of Michigan and Marc Edwards, a Virginia Tech researcher who helped bring the water crisis to the forefront.

After the testing revealed dangerous lead levels in June, the Michigan Department of Environmental Quality wrongly indicated the water was safe to drink, according to the e-mails.

Related

Erin Brockovich Keeping an Eye on Flint's 'Poop Water'
Pediatrician Exposed Crisis of Lead in Flint Water
State Delayed Action on Lead in Flint Water
The financially struggling city of Flint turned off the taps to water from Detroit, which gets its supply from Lake Huron, and switched to water from the Flint River in a money-saving move in 2014. Flint was under the control of a state-appointed emergency manager at the time.

The e-mail trail suggests state officials were aware of the impending water crisis well ahead of a study released in September by West Bloomfield pediatrician Dr. Mona Hanna-Attisha, pediatric residency director at Flint's Hurley Children's Hospital.

More from West Bloomfield Patch
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Opioid Addicts Younger Than Ever: Study

The study showed the proportion of children with above-average levels of lead in their blood had nearly doubled since the city began getting its water from the Flint River.
The consequences of lead poisoning are serious and long lasting.

Lead's trail is virtually invisible, discoverable only through finger-prick blood test or when children begin showing signs of learning disabilities, reduced IQ, behavioral changes, anti-social behavior, anemia, hypertension, renal impairment, immunotoxicity and a plethora of other neurological and behavioral problems that are thought to be irreversible, according to theWorld Health Organization.

The e-mails showed that DEQ district coordinator Stephen Busch told the U.S. Environmental Protection Agency in February that Flint had "an optimized corrosion control program" to prevent lead from getting into the water system when, in fact, the city had no corrosion control program at all.

In his statement, the governor apologized to the residents of Flint and to residents of other cities with aging infrastructure.

“I want the Flint community to know how very sorry I am that this has happened. And I want all Michigan citizens to know that we will learn from this experience, because Flint is not the only city that has an aging infrastructure,” he wrote.

Changes in leadership and staff aren’t enough, Snyder said. The statement continued:

“I understand there can be disagreements within the scientific community. That is why I have directed both the departments of Environmental Quality and Health and Human Services to invite every external scientist who has worked on this issue to be our partners in helping us improve Flint water.

“Let’s share research on water and blood lead level testing so we can arrive at accurate and mutually supported conclusions,” he wrote. “Together, we should work to affirm that we’re using the very best testing protocols to ensure Flint residents have safe drinking water and that we’re taking steps to protect their health over the short and long term.

“I know many Flint citizens are angry and want more than an apology. That’s why I’m taking the actions today to ensure a culture of openness and trust. We’ve already allocated $10 million to test the water, distribute water filters, and help in other ways. Last week, I called Flint Mayor Karen Weaver, and we’re going to meet soon to discuss other ways the state can offer assistance.

“These are only initial steps — we fully expect to take more actions following the recommendations of our task force. When it comes to matters of health and quality of life, we’re committed to doing everything we can to protect the well-being of our citizens.”

MDEQ Director Wyant resigns over Flint water crisis, Snyder apologizes (Michigan Radio)
http://michiganradio.org/post/mdeq-director-wyant-resigns-over-flint-water-crisis-snyder-apologizes#stream/0
By JAKE NEHER • 16 HOURS AGO
SHARETwitter Facebook Google+ Email
Former MDEQ director Dan Wyant
CREDIT STEVE CARMODY / MICHIGAN RADIO
UPDATED AT 5:37 PM ON 12/29/15

The head of the Michigan Department of Environmental Quality (MDEQ) has resigned over the drinking water crisis in Flint.

Gov. Rick Snyder has also now apologized to the community of Flint for his administration’s involvement in the situation.

“I want the Flint community to know how very sorry I am that this has happened,” said Snyder in a statement on Tuesday. “And I want all Michigan citizens to know that we will learn from this experience, because Flint is not the only city that has an aging infrastructure."

"I know many Flint citizens are angry and want more than an apology. That's why I'm taking the actions today to ensure a culture of openness and trust."

MDEQ Director Dan Wyant will step down immediately. The resignation comes after Snyder received initial findings from the task force he appointed to investigate the situation. A number of reports have pointed to mistakes the department made that resulted in elevated lead levels in the city's water.

The governor says he plans to make additional personnel changes in the department – although he hasn't announced what those will be. And he says he'll meet with Flint Mayer Karen Weaver to discuss further actions the state could take to help the city.

Also resigning from the MDEQ today was spokesman Brad Wurfel.

Letter says the state department is at fault in Flint Water Crisis (WLNS News 6)
http://wlns.com/2015/12/30/letter-says-the-state-department-is-at-fault-in-flint-water-crisis/
6 News StaffPublished: December 30, 2015, 6:11 am
Photo: MLive
LANSING, MI. (WLNS) – At the state capital, a letter sent to Governor Snyder from his Flint Water Crisis task force says there's a state department to blame for the city's water problems.

In the letter the task force says the Department of Environmental Quality must be held accountable for failing to ensure the safe drinking water for people of Flint.

It says Flint residents were exposed to toxic levels of lead in their water because of a culture of passive compliance.

In addition to the letter, Dan Wyant stepped down as director of the department

###

To: Meiburg, Stan[Meiburg.Stan@epa.gov]; Purchia, Liz[Purchia.Liz@epa.gov]; Grantham, Nancy[Grantham.Nancy@epa.gov]
Cc: Kaplan, Robert[kaplan.robert@epa.gov]
From: Hedman, Susan
Sent: Wed 12/30/2015 4:13:52 PM
Subject: Fwd: Flint Water Clips Dec. 30, 2015

I think we need to reach out to TRMS to correct the repeated references to a "EPA whistleblower/rogue employee" that appear in this segment and previous segments. Our review of EPA actions in Flint show that the so-called whistleblower/rogue employee was acting under the direction of and with the support of EPA management when he tested water at three residences in Flint and prepared a report summarizing his findings. I personally objected to MDEQ management and the Governor's office when they called this R5 staffer a "rogue employee." This misrepresentation is especially problematic in the wake of the House Oversight hearing last summer, which focused on alleged whistleblowers in R5. I don't know if we need to ask for a formal correction, but we should at least ask TRMS to avoid this inaccurate characterization in future segments.

I am happy to talk about this if you would like us to set up a call.

Sent from my iPhone

Begin forwarded message:

> **From:** "Cassell, Peter" <cassell.peter@epa.gov>
> **Date:** December 30, 2015 at 9:06:05 AM CST
> **To:** "Peterson, John" <peterson.john@epa.gov>, "Hedman, Susan" <hedman.susan@epa.gov>, "Kaplan, Robert" <kaplan.robert@epa.gov>, "Hyde, Tinka" <hyde.tinka@epa.gov>
> **Cc:** "Kelley, Jeff" <kelley.jeff@epa.gov>, "Rowan, Anne" <rowan.anne@epa.gov>, "Beckmann, Ronna Erin" <beckmann.ronna@epa.gov>, "Harrison, Melissa" <Harrison.Melissa@epa.gov>, "Abrams, Dan" <Abrams.Dan@epa.gov>, "Poy, Thomas" <poy.thomas@epa.gov>, "Singer, Joshua" <Singer.Joshua@epa.gov>, "Arcaute, Francisco" <Arcaute.Francisco@epa.gov>, "Cannon, Phillippa" <Cannon.Phillippa@epa.gov>, "Deamer, Eileen" <deamer.eileen@epa.gov>, "Fortin, Denise" <Fortin.Denise@epa.gov>, "Nowotarski, Allison" <nowotarski.allison@epa.gov>, "Reshkin, Karen" <Reshkin.Karen@epa.gov>, "Loop, Travis" <Loop.Travis@epa.gov>, "Purchia, Liz" <Purchia.Liz@epa.gov>, "Henry, Timothy" <henry.timothy@epa.gov>, "Lee, Monica" <Lee.Monica@epa.gov>, "Grantham, Nancy" <Grantham.Nancy@epa.gov>, "Davis, CatherineM" <Davis.CatherineM@epa.gov>
> **Subject: Re: Flint Water Clips Dec. 30, 2015**
>
> Congressman Kildee was on the Rachel Maddow show last night. The clip is available at: on.msnbc.com/1krBTbv. Sorry that this wasn't in the rest of the clips.

From: Cassell, Peter
Sent: Wednesday, December 30, 2015 8:42 AM
To: Peterson, John; Hedman, Susan; Kaplan, Robert; Hyde, Tinka
Cc: Kelley, Jeff; Rowan, Anne; Beckmann, Ronna Erin; Harrison, Melissa; Abrams, Dan; Poy, Thomas; Singer, Joshua; Arcaute, Francisco; Cannon, Phillippa; Deamer, Eileen; Fortin, Denise; Nowotarski, Allison; Reshkin, Karen; Loop, Travis; Purchia, Liz; Henry, Timothy; Lee, Monica; Grantham, Nancy; Davis, CatherineM
Subject: Flint Water Clips Dec. 30, 2015

FLINT DRINKING WATER CLIPS
US. EPA REGION 5 – AS PREPARED BY PETER CASSELL (ORA/OEC/PA) ON DEC. 30, 2015

Snyder apologizes, Wyant resigns in Flint water crisis (Detroit Free Press)
Flint water report prompts apologies, resignations (Detroit News)
Michigan Regulator Resigns Amid Flint's Lead-in-Water Crisis (AP)
Task force lays most blame for Flint water crisis on MDEQ (Michigan Radio)
Flint water scandal: Snyder apologizes, DEQ director resigns (Fox 2 Detroit)
Flint leaders applaud DEQ director's resignation, governor's apology (MLive.com)
Michigan Gov. Rick Snyder apologizes for lead levels in Flint water (Detroit 4)
Director Dan Wyant resigns after task force blasts MDEQ over Flint water crisis (MLive.com)
Auditor: State erred on Flint water but didn't mislead feds (AP/Crain's Detroit)
BREAKING: DEQ Director Resigns Over Flint Water Crisis (West Bloomfield Patch)
MDEQ Director Wyant resigns over Flint water crisis, Snyder apologizes (Michigan Radio)
Letter says the state department is at fault in Flint Water Crisis (WLNS News 6)

Snyder apologizes, Wyant resigns in Flint water crisis (Detroit Free Press)
Paul Egan, Detroit Free Press9:07 p.m. EST December 29, 2015
http://www.freep.com/story/news/local/michigan/2015/12/29/deq-director-wyant-resigns-over-flint-water-crisis/78027052/
LANSING — Gov. Rick Snyder apologized to the City of Flint on Tuesday for the drinking water crisis that has left children poisoned by lead and announced that he accepted the resignation of Michigan Department of Environmental Quality Director Dan Wyant.
Snyder said in a news release that there will be other personnel changes at the DEQ and that the moves he announced are among "initial steps" he is taking to assure the safety of Flint residents, with more action to come.
"I want the Flint community to know how very sorry I am that this has happened," Snyder said. "And I want all Michigan citizens to know that we will learn from this experience, because Flint is not the only city that has an aging infrastructure."

The governor, who previously stood by his DEQ director amid the controversy, said, "Dan Wyant has offered his resignation, and I've determined that it's appropriate to accept it."

Before joining the Snyder administration as DEQ director, Wyant was president and chief operating officer of the Edward Lowe Foundation, which promotes entrepreneurship and helps business owners grow their companies. Before that, he served as director of the Michigan Department of Agriculture under Govs. John Engler and Jennifer Granholm.

Brad Wurfel, the DEQ public information officer who apologized after criticizing a researcher's reports of rising lead levels in the blood of Flint children as irresponsible, also resigned Tuesday, a spokesman for Snyder confirmed.

The governor said he acted based on interim findings of the Flint Water Advisory Task Force, which he appointed Oct. 21 to investigate the crisis and is continuing its work. He received a letter Tuesday morning that was highly critical of the DEQ.

The letter from the task force said the "primary responsibility" for what happened in Flint lies with the DEQ; the agency "failed in its responsibility" to ensure safe drinking water for Michigan residents and "must be held accountable for that failure." It was signed by task force members Matt Davis, Chris Kolb, Larry Reynolds, Eric Rothstein and Ken Sikkema.

The Free Press reported Thursday that records obtained by the Michigan ACLU and Virginia Tech researcher Marc Edwards show that elevated lead levels in Flint's drinking water would have spurred action months sooner if the results of city testing that wrapped up in June had not been revised by the DEQ to wrongly indicate the water was safe to drink.

Auditor General Doug Ringler said in a letter released Monday that it was appropriate for the DEQ to disqualify two samples with high lead levels that did not meet the sampling criteria. But the records obtained by the ACLU and Edwards also show that a DEQ official sent Flint an e-mail saying that samples as of late June showed Flint's water had lead levels above the "action level" that would require public notice and remedial action, and he hoped the city could send the remaining required samples quickly and that they would be below the action level for lead.

The records also suggest the DEQ was not as strict in disqualifying samples with low lead levels that did not meet the testing criteria as it was in disqualifying samples with high lead readings.

'It's ... not enough'

Flint, which was under the control of a state-appointed emergency manager at the time of the cost-cutting move, switched its drinking water source, starting in April 2014, from Lake Huron water supplied by Detroit to the much more polluted and corrosive water from the Flint River.

The state has acknowledged that it misinterpreted a federal rule and failed to require Flint to add needed corrosion-control chemicals that would have prevented lead from leaching into the drinking water from pipes, connections and fixtures.

That change in the drinking-water source brought immediate complaints from Flint residents about the taste, smell and appearance of the water. The lead tests of the water could have spurred action in July, but it was not until October — after blood test results analyzed by Hurley Children's Hospital pediatrician Dr. Mona Hanna-

Attisha showed elevated lead levels in Flint children — that the DEQ admitted making a mistake by failing to require the addition of corrosion-control chemicals to the Flint River water. The state also then provided funds to help Flint reconnect to Lake Huron water supplied by Detroit.

Lead can cause irreversible brain damage in children and has also been linked to behavioral problems.

Melissa Mays, a Flint resident who drank the contaminated water along with her three boys, said she was more shocked by Snyder's apology than by Wyant's resignation. She welcomed the announcements but said more DEQ officials need to be removed because Flint residents can't trust those officials to make sure their water is safe to drink today.

"This all should have happened a long time ago, and it's also not enough," she said.

Mays questioned why Snyder has not endorsed Flint Mayor Karen Weaver's declaration of a state of emergency in Flint, which she said would help secure federal funding to help rectify problems.

Snyder spokesman Dave Murray said "no formal request has been made to the state" to declare a state of emergency in Flint.

"We are committed to working with Mayor Weaver and Genesee County leaders," and the emergency management division of the Michigan State Police is working with city and county officials on potential avenues for federal aid, Murray said.

The crisis has prompted a federal class-action and calls for an investigation by the U.S. Department of Justice.

Goals: Openness, trust

Snyder said "changes in leadership and staff are not enough. I understand there can be disagreements within the scientific community. That is why I have directed both the departments of Environmental Quality and Health and Human Services to invite every external scientist who has worked on this issue to be our partners in helping us improve Flint water."

Snyder said he wants to "share research on water and blood-lead level testing so we can arrive at accurate and mutually supported conclusions. Together, we should work to affirm that we're using the very best testing protocols to ensure Flint residents have safe drinking water and that we're taking steps to protect their health over the short and long term."

The other personnel changes at DEQ referenced by Snyder, aside from Wurfel's resignation, have not yet been made, Murray said.

“I know many Flint citizens are angry and want more than an apology," Snyder said. "That’s why I’m taking the actions today to ensure a culture of openness and trust. We’ve already allocated $10 million to test the water, distribute water filters, and help in other ways. Last week, I called Flint Mayor Karen Weaver, and we’re going to meet soon to discuss other ways the state can offer assistance.

“These are only initial steps - we fully expect to take more actions following the recommendations of our task force. When it comes to matters of health and quality of life, we’re committed to doing everything we can to protect the well-being of our citizens.”

The letter from the task force said a minimalist culture of "technical compliance" had developed in the DEQ's Office of Drinking Water and Municipal Assistance and "it led to MDEQ's failure to recognize a number of indications that switching the water source in Flint would — and did — compromise both water safety and water quality."

The office "must adopt a posture that is driven not by this minimalist technical compliance approach, but rather by one that is founded on what needs to be done to assure drinking water safety," the letter said.

The letter also said that both the tone and substance of DEQ statements to the public during the crisis were "completely unacceptable," marked by a "persistent tone of scorn and derision."

Task force members met with Wyant, and while he agreed with many of the task force's interim conclusions, "it was disappointing to hear his weak defense of the (corrosion control) decision," the letter said.

Senate Minority Leader Jim Ananich, D-Flint, said the personnel changes Snyder announced could be a sign of progress if they "lead to a more aggressive response and resources to improve public health."

"I still believe that legislative hearings will be required to get all the answers and help shape the necessary policy changes, and ensure this never happens again," Ananich said in a news release.

"Dan Wyant gets to walk away from this crisis, but the people of Flint do not," said Lonnie Scott, the group's executive director. "There's a lot we don't know about this man-made catastrophe. What did Gov. Snyder know and when did he know it? We need complete transparency so that justice for the families of Flint can be realized and the proper people can be held accountable."

Contact Paul Egan: 517-372-8660, pegan@freepress.com or on Twitter @paulegan4

Flint water report prompts apologies, resignations (Detroit News)

Jim Lynch The Detroit News9:13 a.m. EST December 30, 2015

http://www.detroitnews.com/story/news/politics/2015/12/29/deq-director-wyant-resigns-due-flint-water-crisis/78028616/

Buy Photo

(Photo: Dale G. Young / The Detroit News)

Michigan's top environmental official resigned Tuesday after an independent task force delivered its initial findings on the Flint water contamination crisis — conclusions that also prompted an apology from Gov. Rick Snyder.

Dan Wyant, director of the Department of Environmental Quality since 2011, tendered his resignation Tuesday, marking the second agency shakeup in just over two months related to Flint's lead-tainted drinking water problems. The industrial city has been plagued by lead issues since an April 2014 switch to the Flint River as its water source.

A Snyder-appointed task force investigating the long-running situation announced it found Tuesday the DEQ "primarily responsible for failing to ensure safe drinking water in Flint." Snyder accepted the initial findings and Wyant's resignation — "I've determined that it's appropriate to accept it, he said — and then issued an apology.

"I want the Flint community to know how very sorry I am that this has happened," Snyder said in a press release. "And I want all Michigan citizens to know that we will learn from this experience, because Flint is not the only city that has an aging infrastructure."

"I know many Flint citizens are angry and want more than an apology. That's why I'm taking the actions today to ensure a culture of openness and trust."

A Flint Water Advisory Task Force co-chair blamed the DEQ's passive culture for Flint's water ills.

"Flint residents were exposed to toxic levels of lead in their water primarily due to a regulatory culture of passive technical compliance that is simply insufficient to the task of public protection," wrote Ken Sikkema, a former state senator. "We also believe that the dismissive and disrespectful tone of much of the MDEQ's response to public concerns is unacceptable."

The water switch, made while Flint was under the leadership of a Snyder-appointed emergency manager, immediately led to resident complaints about the smell, taste and discoloration of their drinking water. Eventually, researchers found a link between the switch and a rise in lead poisoning among city children.

Lead poisoning can cause learning disabilities and, at high levels, may lead to seizures, coma and death, according to the Centers for Disease Control and Prevention.

Wyant could not be reached for comment Tuesday. In October, Wyant admitted the DEQ erred in its application of the federal Lead and Copper Rule, designed to ensure safe drinking water for residents.

Late on Tuesday, DEQ spokesman Brad Wurfel resigned as well.

Flint was allowed to begin drawing its drinking water from the river without any corrosion controls in place to prevent lead in old plumbing connections from leaching. The task force said the DEQ failed in the regulatory handling of Flint's water problems, the "substance and tone" in the department's response as well as its "interpretation of the Lead and Copper Rule."

State Sen. Jim Ananich, D-Flint, criticized the DEQ culture Tuesday, saying workers were more concerned with following rules than informing the public about potential problems.

"When you have lead in the water, I don't care if you follow the rules or not: You need to notify the public first," Ananich said.

Critics have put increasing pressure on Snyder's administration to answer for the Flint water decisions in the last two years. Among the harshest critics is Marc Edwards, a Virginia Tech researcher whose water sampling at Flint homes and public record requests have helped keep the spotlight on the state government's actions.

But Edwards said Wyant should not be the one on the chopping block.

"I'm glad that someone is sorry and someone is being held accountable," Edwards said. "But Dan Wyant would not be at the top of my list — or even on the list. I feel strongly he was misled by his staff at every point, and he was put in publicly embarrassing situations by the staff's misinformation."

Dr. Mona Hanna-Attisha, a Hurley Medical Center pediatrician who uncovered lead exposure in city children following the switch, echoed Edwards by saying DEQ staffers' mistakes led to Flint's problems.

"(Wyant) wasn't directly involved," she said. "There are other people, particularly in (the Office of Drinking Water and Municipal Assistance), that need to take some responsibility. ... (Wyant) was a nice person being fed bad information."

In 2013, Flint agreed to create a new regional water authority in an attempt to save money. The city had tried to negotiate lower rates with former provider Detroit Water and Sewerage Department for years, to little avail.

But the Karegondi Water Authority will not be completed until some time next year. In the interim, Flint looked to its river to provide drinking water. That water turned out to be far more corrosive than the Lake Huron water used by the Detroit system. With pressure mounting from troublesome water samples and health studies, Flint reconnected to the Detroit system in October.

Snyder previously was elusive in acknowledging the extent of the state's responsibility for the lead contamination of the city's water when it switched to the more corrosive Flint River in 2014, saying he was awaiting the task force report. On Tuesday, the governor was more contrite.

“We've already allocated $10 million to test the water, distribute water filters, and help in other ways,” Snyder said. “Last week, I called Flint Mayor Karen Weaver, and we're going to meet soon to discuss other ways the state can offer assistance.”

jlynch@detroitnews.com
(313) 222-2034

Michigan Regulator Resigns Amid Flint's Lead-in-Water Crisis (AP)
By DAVID EGGERT, ASSOCIATED PRESS
LANSING, Mich. — Dec 29, 2015, 7:16 PM ET
http://abcnews.go.com/Politics/wireStory/michigan-official-resigns-amid-flint-water-issue-35996502

Michigan's top environmental regulator resigned Tuesday after elevated levels of lead were found in Flint children during a drinking water crisis that a task force blamed primarily on his agency.

Gov. Rick Snyder accepted the resignation of Department of Environmental Quality Director Dan Wyant and apologized for what occurred in Flint, which switched its drinking water supply in a cost-cutting move while under state financial management. Communications director Brad Wurfel also resigned, and Snyder said he plans additional personnel changes in the agency.

Wyant quit the same day a task force appointed by the Republican governor reported that the department was primarily responsible for the fiasco because it did not require Flint to keep corrosive water from leaching lead from service pipes into residents' homes and belittled concerns from the public. Exposure to lead can cause behavior problems and learning disabilities in children.

"I want the Flint community to know how very sorry I am that this has happened," Snyder said in a written statement. "And I want all Michigan citizens to know that we will learn from this experience, because Flint is not the only city that has an aging infrastructure."

The five-member task force, which previously brought up concerns about a lack of organization in responding to the disaster, said the environmental department's Office of Drinking Water and Municipal Assistance has a "minimalist approach" to regulatory oversight in which "technical compliance" is sufficient. It faulted the agency for a "tone of scorn and derision" toward the public, including outside water and health experts who raised alarm bells.

The task force confirmed that the state did not follow the federal Lead and Copper

Rule when Flint disconnected from Detroit's water system in April 2014 and switched to Flint River water while waiting to connect to a new regional water authority.

Detroit's water from Lake Huron had been treated for corrosion. State officials thought that after Flint made the transition to the river it could test the new water for lead over two six-month intervals to determine potential corrosion treatment instead of needing to immediately add corrosion controls. Flint returned to Detroit's water in October after a public health emergency was declared.

The task force, which met with Wyant on Dec. 16, noted his substantial agreement with many of its conclusions but expressed disappointment with his "weak defense" regarding the federal rule.

The U.S. Environmental Protection Agency said in a November memo that there are "differing possible interpretations" of the Lead and Copper Rule, explaining that it does not explicitly discuss a scenario like in Flint.

But task force members said, "Individuals and agencies responsible must be held accountable in a timely fashion."

They also cited recent revelations of the Department of Health and Human Services' apparent early knowledge of and silence about elevated blood-lead levels, and said the committee's final report in early 2016 would review local governments' decision processes while under emergency management.

"I know many Flint citizens are angry and want more than an apology. That's why I'm taking the actions today to ensure a culture of openness and trust," Snyder said.

Wyant, 56, led the Environmental Quality Department for nearly five years. He previously served as the state's agricultural director under Republican Gov. John Engler and Democratic Gov. Jennifer Granholm.

"If these personnel moves and change in tone lead to a more aggressive response and resources to improve public health, then we are finally making progress," said Senate Minority Leader Jim Ananich, a Democrat from Flint.

Follow David Eggert at http://twitter.com/DavidEggert00 . His work can be found at http://bigstory.ap.org/author/david-eggert

Task force lays most blame for Flint water crisis on MDEQ (Michigan Radio)

By VINCENT DUFFY • 14 HOURS AGO

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http://michiganradio.org/post/task-force-lays-most-blame-flint-water-crisis-mdeq#stream/0

MDEQ Director Dan Wyant at a recent press conference.

CREDIT SCREEN GRAB / MLIVE USTREAM

A task force appointed by Gov. Rick Snyder says Michigan's environmental regulatory agency is primarily responsible for the state's failure to ensure safe drinking water for Flint residents.

The Flint Water Advisory Task Force says in a letter to Snyder that the state Department of Environmental Quality "must be held accountable for that failure."

The letter was made public Tuesday. You can read it here.

Corrosive Flint River water leached lead from service pipes into homes after the city switched last year from Detroit water. Elevated blood-lead levels later were found in some children.

Department of Environmental Quality Director Dan Wyant and spokesman Brad Wurfel both resigned Tuesday.

Task force co-chair Ken Sikkema says in the letter that "Flint residents were exposed to toxic levels of lead in their water primarily due to a regulatory culture of passive technical compliance."

The FWATF letter stated in part:

“We believe the primary responsibility for what happened in Flint rests with the Michigan Department of Environmental Quality (MDEQ). Although many individuals and entities at state and local levels contributed to creating and prolonging the problem, MDEQ is the government agency that has responsibility to ensure safe drinking water in Michigan. It failed in that responsibility and must be held accountable for that failure.”

“The City of Flint’s water customers—fellow Michigan citizens—were needlessly and tragically exposed to toxic levels of lead through their drinking water supply. They deserve a commitment to properly assess responsibility and ensure accountability. They also deserve a commitment to needed mitigation in both the short and long term. The Flint water crisis never should have happened. Having failed to prevent it, state government should coordinate a sustained, public-health-focused response to remedy, to the fullest extent possible, the impacts on the Flint community.”

The letter outlined three areas where MDEQ failed:

Regulatory Failure
Failure in Substance and Tone of MDEQ Response to the Public
Failure in MDEQ Interpretation of the Lead and Copper Rule
This is the second letter sent by the Task Force. The first, sent earlier this month, made several recommendations concerning coordination of state efforts that were supported and implemented by Governor Snyder.

The full FWATF report is expected to be completed in early 2016.

Members of the Task Force include:

Matthew Davis, M.D., M.A.P.P., is professor of pediatrics and internal medicine at the University of Michigan Health System and professor of public policy at the Gerald R. Ford School at the University of Michigan.

Chris Kolb is president of the Michigan Environmental Council.

Lawrence Reynolds, M.D., is a pediatrician in Flint who serves as president of the Mott Children's Health Center.

Eric Rothstein is a national water issues consultant and principal at the Galardi Rothstein Group. He served as an independent advisor on the creation of the Great Lakes Water Authority.

Ken Sikkema is a senior policy fellow at Public Sector Consultants. (Full Disclosure - he is also a regular commenter on Michigan Radio.)

The FWATF was formed by Governor Snyder to review actions regarding the Flint water system and offer recommendations both for Flint and Michigan to protect the health and safety of state residents.

Flint water scandal: Snyder apologizes, DEQ director resigns (Fox 2 Detroit)

Gov. Rick Snyder announced changes at the Michigan DEQ.
http://www.fox2detroit.com/news/local-news/66000998-story

POSTED:DEC 29 2015 10:25PM EST
UPDATED:DEC 29 2015 11:24PM EST
FLINT, Mich. - Gov. Rick Snyder says he's sorry for Flint's water crisis as one of his top appointees resigns.
The director of the state's department of environmental quality Dan Wyant resigned.

Wyant was in charge of keeping the water safe. When Flint switched its drinking water source from Lake Huron water supplied by detroit...to the flint river - to save money -- corrosion flowed through the pipes.

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Tests showed elevated levels of lead in the city's drinking water back in June. But the state didn't take action until October after blood testing showed high lead levels in Flint's children.
Flint water scandal: Snyder apologizes, DEQ director resigns
Snyder's office issued a press release Tuesday:
"I want the Flint community to know how very sorry I am that this has happened," he said. "And I want all Michigan citizens to know that we will learn from this experience, because Flint is not the only city that has an aging infrastructure.
"When I became aware that the city of Flint's water showed elevated lead levels and that the state's handling of the situation was being questioned," he said. "I

requested funding to switch the source back to the Great Lakes Water Authority and appointed an independent task force to identify possible missteps and areas for improvement.

"The task force has done an exceptional job, reviewing stacks of documents and interviewing scores of Flint, Genesee County, state and federal officials ... We'll continue to work with the community members to make sure we hear and respond to their concerns.

"MDEQ Director Dan Wyant has offered his resignation, and I've determined that it's appropriate to accept it. I'm also making other personnel changes at MDEQ to address problems cited by the task force."

In a previous FOX 2 report it was discovered a year after the city began using the Flint River as its water source; a local hospital's study found the number of Flint kids under the age of 5 years old with above average lead levels nearly doubled city-wide and in some cases, tripled.

Virginia Tech University tested resident Ronda Thornton's water. Anything more than 30 micrograms a liter is a sign of serious lead contamination. Hers registered 138.

"I know many Flint citizens are angry and want more than an apology," Snyder said. "That's why I'm taking the actions today to ensure a culture of openness and trust. We've already allocated $10 million to test the water, distribute water filters, and help in other ways. Last week, I called Flint Mayor Karen Weaver, and we're going to meet soon to discuss other ways the state can offer assistance."

"But changes in leadership and staff are not enough. I understand there can be disagreements within the scientific community. That is why I have directed both the departments of Environmental Quality and Health and Human Services to invite every external scientist who has worked on this issue to be our partners in helping us improve Flint water. Let's share research on water and blood lead level testing so we can arrive at accurate and mutually supported conclusions. Together, we should work to affirm that we're using the very best testing protocols to ensure Flint residents have safe drinking water and that we're taking steps to protect their health over the short and long term."

"These are only initial steps - we fully expect to take more actions following the recommendations of our task force. When it comes to matters of health and quality of life, we're committed to doing everything we can to protect the well-being of our citizens."

Flint leaders applaud DEQ director's resignation, governor's apology (MLive.com)

http://www.mlive.com/news/flint/index.ssf/2015/12/gov_rick_snyder_accepts_mdeq_h.html

By Jiquanda Johnson | jjohns16@mlive.com
Follow on Twitter
on December 29, 2015 at 6:41 PM, updated December 29, 2015 at 8:44 PM

DEQ spokesman also resigns over Flint water crisis, says city 'didn't feel like we cared'

Flint leaders applaud DEQ director's resignation, governor's apology

Congressman Dan Kildee will again discuss Flint water on 'The Rachel Maddow Show'

Gov. Rick Snyder still doesn't get it when it comes to Flint water crisis
Director Dan Wyant resigns after task force blasts MDEQ over Flint water crisis
All Stories

FLINT, MI – Mayor Karen Weaver and other local leaders say the resignation of Michigan Department of Environmental Quality Director Dan Wyant and release of Flint Water Task Force findings Tuesday are the first steps toward holding people accountable for Flint's water crisis.

"There is some accountability being put in place and that's a good thing," Weaver said. "That's what is happening and I think that's a good sign because it shows that our voices have been heard and that they will continue to be heard."

According to a statement issued by Gov. Rick Snyder on Dec. 29, he has accepted Wyant's resignation after findings from a report by the task force, which was created by Snyder in October to look into Flint's water crisis. In the same statement, Snyder also said he was "sorry" to the Flint community for the water issues.

"I know many Flint citizens are angry and want more than an apology," Snyder said. "That's why I'm taking the actions today to ensure a culture of openness and trust ... Last week, I called Flint Mayor Karen Weaver, and we're going to meet soon to discuss other ways the state can offer assistance."

Weaver confirmed that she will be meeting with Snyder after the first of the year.

"I hope this will help move Flint forward," she said. "One thing that has been an issue for us here in Flint has been that broken trust. We will have a new person that we will be working with, and that's a positive step."

The task force report, which is preliminary, revealed that the MDEQ failed the city in multiple areas including regulatory failures, substance and tone of the MDEQ's response to public and the interpretation of the federal lead and copper rule.

"We believe the primary responsibility for what happened in Flint rests with the Michigan Department of Environmental Quality (MDEQ)," said the preliminary report. "Although many individuals and entities at state and local levels contributed to creating a prolonging problem, MDEQ is the government agency that has responsibility to ensure safe drinking water in Michigan. It failed in that responsibility and must be held accountable."

State Rep. Sheldon Neeley, D-Flint, said that he and others in the city have called for legislative hearings regarding the water crisis and that Wyant's departure is just the first, not the only, person held responsible for the condition of Flint's water.

"For months, the call has been public and aggressive for Dan Wyant to remove himself from his position, or have Gov. Rick Snyder do the deed for him," Neeley said in a statement issued Dec. 29. "There are many culpable parties involved in the continued decline of health and safety during the water crisis in the city of Flint, and Wyant was just one figure in a menagerie of offenders."

Neeley, who along with Sen. Jim Ananich, D-Flint, have been pushing for legislative hearings on Flint's water crisis, went on to say there is still "cleanup do be done" and he is "glad" that Wyant has stepped down in what Neeley considers a "disorganized and flawed DEQ."

The task force's report also says members spoke with Wyant on Dec. 16 and they were not pleased with how he responded to the city's water crisis and he was in agreement with some of their findings.

"It is our understanding that he has drawn similar conclusions in his own evaluation of MDEQ's role in the Flint water crisis," said the report. "At the same time, it was disappointing to hear his weak defense of the CCT (corrosion control treatment) decision based on the EPA's November 2015 memorandum."

Both Ananich and Neeley's push led to an independent review by the Office of State Auditor Genera,l which made it clear in a Dec. 23 letter that corrosion control should have been maintained during Flint's transition from Detroit water to Flint River water. The review was based on a series of questions sent to the auditor from Ananich in October.

The corrosiveness of Flint River water is blamed for lead that leached from pipes into drinking water, causing elevated levels of lead in the blood of Flint children.

"I think the best apology (Snyder) can offer the residents of Flint and the rest of the state is a promise that this will never happen again," Ananich said. "The proof is in the long-term commitment. I'm going to continue to work to make sure that we get that."

Michigan Gov. Rick Snyder apologizes for lead levels in Flint water (Detroit 4)

DEQ head Dan Wyant's resigns after task force blames department for crisis

By Jason Colthorp – Reporter

http://www.clickondetroit.com/news/michigan-official-resigns-amid-flint-water-issue

LANSING, Mich. - Gov. Rick Snyder issued an apology Tuesday as Dan Wyant, his head of the Department of Environmental Quality, resigned after a task force lead by the state's auditor general blasted the DEQ for it's role in Flint's water crisis.

The state's mishandling of Flint's water system ultimately exposed Flint residents to dangerously elevated levels of lead.

“I want the Flint community to know how very sorry I am that this has happened,” Snyder said in a statement. “And I want all Michigan citizens to know that we will learn from this experience.”

The governor's apology and the DEQ head's resignation has helped to temper concerns that no one cared about Flint said the city's mayor Karen Weaver.

“One of the things we've always talked about is accountability and that seems to be what's happening,” said Weaver. “It also let us know here in Flint that our voice is being heard.”

Snyder's apology and Wyant's resignation come after the task force released their finding that the DEQ was primarily at fault for Flint's unhealthy level of lead in their drinking water.

“Although many contributed to creating and prolonging the problem, MDEQ is the government agency that has responsibility to ensure safe drinking water in Michigan,” the task force said in a written statement. “It failed in that responsibility.”

For many Flint residents like Kim Peterson, Tuesday's announcements do little to help them feel confident about the safety of their drinking water. Peterson says she is still hesitant to drink the water even though it is again coming from a healthy source in Lake Huron.

“I take it to mean that something was really wrong with this whole system of checks and balances,” she said.

“You don't trust it because you've heard so many conflicting things from so many different people, so we still continue to buy the water.”

Mayor Weaver, however, believes Snyder’s apology is a first step toward rebuilding trust: “This is a good step to get some things started because people had lost faith and they had lost trust.”

Snyder has promised more steps will be taken after the task force releases its final and full report.

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Director Dan Wyant resigns after task force blasts MDEQ over Flint water crisis (MLive.com)

http://www.mlive.com/lansing-news/index.ssf/2015/12/deq_director_dan_wyant_resigns.html

Michigan Department of Environmental Quality Director Dan Wyant speaks during a news conference in Flint on Oct. 2, 2015. (Danny Miller | MLive.com)
PrintEmail
By Emily Lawler | elawler@mlive.com
on December 29, 2015 at 4:39 PM, updated December 29, 2015 at 6:51 PM
LANSING, MI -- Gov. Rick Snyder on Tuesday accepted a resignation from Michigan Department of Environmental Quality Director Dan Wyant after a task force laid responsibility for the Flint water crisis at the feet of the department.
Snyder, in a statement, announced Wyant's resignation and apologized to Flint residents after he received a letter from the Flint Water Advisory Task Force.
"...MDEQ Director Dan Wyant has offered his resignation, and I've determined that it's appropriate to accept it. I'm also making other personnel changes at MDEQ to address problems cited by the task force," Snyder said.
Wyant and the DEQ have come under fire in recent months for handling a Flint drinking water crisis that lead to corrosive water running through city pipes and resulted in children with elevated levels of lead. In October, Wyant acknowledgeda mistake in oversight from his office, saying DEQ officials were confused about federal regulations on making the drinking water less corrosive.
The task force in its letter blamed the department for the crisis.
"We believe the primary responsibility for what happened in Flint rests with the Michigan Department of Environmental Quality (MDEQ)," read the letter to Snyder.
"Although many individuals and entities at state and local levels contributed to creating and prolonging the problem, MDEQ is the government agency that has responsibility to ensure safe drinking water in Michigan. It failed in that

responsibility and must be held accountable for that failure."

The task force cited DEQ's involvement as regulatory failure, failure in substance and tone of response to the public and a failure of interpreting the lead and copper rule.

Gov. Rick Snyder recently named the Flint water crisis as his biggest disappointment in 2015.

Wyant had a long track record of service for the state. He served as director of the Michigan Department of Agriculture under both Democratic Gov. Jennifer Granholm and Republican Gov. John Engler before Gov. Rick Snyder tapped him to head up the DEQ in 2011.

He shepherded the department through a transition into being its own entity again after Gov. Jennifer Granholm had combined it with the Department of Natural Resources, forming the Department of Natural Resources and Environment. He also led the "quality of life group" within state government, meaning he coordinated efforts between the DNR, DEQ and Department of Agriculture and Rural Development.

The statement from Snyder alluded to other structural changes within the DEQ, and spokesperson Dave Murray said those decisions would be made in the coming days. DEQ spokesperson Brad Wurfel did not immediately return a call for comment.

Wyant's resignation met with mixed reaction from political groups and leaders.

Senate Minority Leader Jim Ananich (D-Flint) released the following statement:

"If these personnel moves and change in tone lead to a more aggressive response and resources to improve public health, then we are finally making progress. I still believe that legislative hearings will be required to get all the answers and help shape the necessary policy changes, and ensure this never happens again."

Attorney General Bill Schuette praised Wyant's service to the state.

"I am saddened to hear of the resignation of Department of Environment Quality Director Dan Wyant. In my 20-plus years of knowing him, Dan has been a hardworking, dedicated public servant. I am committed to working with all parties, including the legislature and Governor, to ensure the public's health and the well being of Michigan residents."

Democratic Congressman Dan Kildee, who represents Flint, said the steps taken today were appropriate but encouraged further action.

"Governor Snyder's apology over the Flint water crisis is appropriate, as are personnel changes announced today at the Department of Environmental Quality," Kildee said.

"Through this ongoing crisis, the people of Flint did nothing wrong – they are victims of this failure of government. The State of Michigan must not only acknowledge its role in this crisis, but also take responsibility and act right away to make it right."

He urged the state to establish a fund to ensure that kids receive developmental, nutritional and educational resources to help overcome the effects of their lead exposure.

Rep. Sheldon Neeley, D-Flint, said Wyant was not the only offender.

"For months, the call has been public and aggressive for Dan Wyant to remove himself from his position, or to have Gov. Rick Snyder do the deed for him. There are many culpable parties involved in the continued decline of health and safety during the water crisis in the city of Flint, and Wyant was just one figure in a menagerie of offenders," Neeley said.

"While there is still much cleanup to be done, I am glad Mr. Wyant realized he could no longer continue as the head of the disorganized and flawed DEQ, and I call on Gov. Snyder to take careful effort in repairing this department so that it earns back the trust of the people of Flint and this great state.

Progress Michigan said there had been a lack of accountability for the Flint water crisis.

"So far under Gov. Rick Snyder's watch, there has been zero accountability in this crisis and that continues today," said Lonnie Scott, executive director of Progress Michigan.

"Dan Wyant gets to walk away from this criss, but the people of Flint do not. There's a lot we don't know about this man-made catastrophe. What did Gov. Snyder know and when did he know it? We need complete transparency so that justice for the families of Flint can be realized and the proper people can be held accountable. All documentation related this this crisis needs to be released to the public immediately."

Emily Lawler is a Capitol/Business reporter for MLive. You can reach her atelawler@mlive.com, subscribe to her on Facebook or follow her on Twitter:@emilyjanelawler.

Auditor: State erred on Flint water but didn't mislead feds (AP/Crain's Detroit)

http://www.crainsdetroit.com/article/20151228/NEWS01/151229867/auditor-state-erred-on-flint-water-but-didnt-mislead-feds By David Eggert

Associated Press

Michigan Department of Environmental Quality Environment More +

LANSING — The director of Michigan's Department of Environmental Quality has resigned after the Flint Water Task Force delivered its findings on the the city's water contamination crisis to Gov. Rick Snyder.

Snyder said Tuesday afternoon in a statement that he accepted the resignation of Dan Wyant and plans to make "other personnel changes at MDEQ to address problems cited by the task force.

“But changes in leadership and staff are not enough."

In a preliminary report released Monday, Michigan's auditor general said state regulators should have required Flint to treat its corrosive drinking water to keep lead from leaching from service lines into people's homes but did not purposely mislead federal officials about the lack of corrosion control.

Doug Ringler, citing a memo issued last month by the U.S. Environmental Protection Agency, concluded that the Michigan Department of Environmental Quality erred in not requiring the city to immediately combat corrosion when it switched from Detroit's system to the Flint River in April 2014 in a cost-cutting move while under state financial management. State officials interpreted federal rules to mean Flint could make the transition and then test the new water for lead over two six-month intervals to determine potential corrosion treatment.

Flint children have been found to have elevated levels of lead in their blood since the water change. Gov. Rick Snyder's administration initially downplayed concerns but later committed funding to reconnect Flint to Detroit and to provide filters, testing and other services.

Ringler was already conducting an audit of Michigan's Office of Drinking Water and Municipal Assistance when the Flint corrosion issue arose. At the request of Senate Minority Leader Jim Ananich, he answered questions specific to Flint's lead contamination, including concerns that state regulators misled federal environmental regulators.

In February, a DEQ water supervisor told the EPA that Flint had a corrosion control program in place. But in April, an EPA official confirmed through another DEQ official that the city was not practicing corrosion treatment, according to emails. The EPA apparently interpreted the word "program" to mean treatment, while the DEQ meant it as testing to determine if corrosion controls would be needed in the future.

"Based on our review of this and other emails, we have no specific reason to believe that DEQ willfully misrepresented the information to the EPA," Ringler wrote in a letter dated Wednesday and made public Monday.

The auditor concluded, however, that regardless of confusion over the federal rule, the state should have required Flint to start pursuing corrosion treatment in March after the first six months of testing showed too-high lead levels instead of waiting until August after a second six-month period. He also said the DEQ did not verify that Flint was correctly sampling water from houses only with lead pipes or lead service lines. He suggested that the department consider doing so.

"We agreed with the findings in the Auditor General's review," DEQ spokesman Brad Wurfel said. "The findings align with our internal department review. We appreciate the Auditor General's work to provide a fair and well considered look at some key issues."

The Republican governor has come under scrutiny for the Flint fiasco. Spokesman Dave Murray said the letter "includes some criticisms, but also reflects that state officials were following accepted protocols, or in one case, an interpretation of the corrosion control program that the EPA later clarified. But we need to do better in ensuring Flint residents have safe water and tracking children affected by elevated lead levels."

Ananich, D-Flint, said "there are serious failings in our system that must be addressed" and again called for GOP leaders to schedule legislative hearings. They have rejected the requests, citing the work of a task force formed by Snyder.

The auditor's letter did not provide clarity on who specifically decided to use the Flint River for water. It was supposed to be an interim source until the city could join a new system getting water from Lake Huron.

Ringler noted that the city council voted in March 2013 to support moving to the Karegnondi Water Authority but was "silent" on using the river temporarily. Flint was being run by a Snyder-appointed manager until this past April and remains under some state oversight.

BREAKING: DEQ Director Resigns Over Flint Water Crisis (West Bloomfield Patch)

Gov. Rick Snyder apologizes to Flint, pledges to help officials address public health crisis surrounding dangerous lead levels in water.

http://patch.com/michigan/westbloomfield/breaking-deq-director-resigns-over-flint-

water-crisis
West Bloomfield, MI

By BETH DALBEY (Patch Staff) December 29, 2015

LANSING, MI – The director of the Michigan Department of Environmental Quality has resigned over the Flint water debacle, Gov. Rick Snyder said Tuesday.
DEQ Director Dan Wyant "has offered his resignation, and I've determined that it's appropriate to accept it," Snyder said in a statement.

The governor said he will be "making other personnel changes at MDEQ" as well.

State officials encouraged officials in Flint, where the mayor has asked for federal emergency reliefto deal with a public health crisis resulting from high lead levels in water, to understate the results, according to e-mails obtained by the American Civil Liberties Union of Michigan and Marc Edwards, a Virginia Tech researcher who helped bring the water crisis to the forefront.

After the testing revealed dangerous lead levels in June, the Michigan Department of Environmental Quality wrongly indicated the water was safe to drink, according to the e-mails.

Related

Erin Brockovich Keeping an Eye on Flint's 'Poop Water'
Pediatrician Exposed Crisis of Lead in Flint Water
State Delayed Action on Lead in Flint Water
The financially struggling city of Flint turned off the taps to water from Detroit, which gets its supply from Lake Huron, and switched to water from the Flint River in a money-saving move in 2014. Flint was under the control of a state-appointed emergency manager at the time.

The e-mail trail suggests state officials were aware of the impending water crisis well ahead of a study released in September by West Bloomfield pediatrician Dr. Mona Hanna-Attisha, pediatric residency director at Flint's Hurley Children's Hospital.

More from West Bloomfield Patch
10 Amazon Deals On Accessories For Your New Smartphone
Michigan State Has 'Unfinished Business' in Cotton Bowl: Watch
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Opioid Addicts Younger Than Ever: Study

The study showed the proportion of children with above-average levels of lead in their blood had nearly doubled since the city began getting its water from the Flint River.
The consequences of lead poisoning are serious and long lasting.

Lead's trail is virtually invisible, discoverable only through finger-prick blood test or when children begin showing signs of learning disabilities, reduced IQ, behavioral changes, anti-social behavior, anemia, hypertension, renal impairment, immunotoxicity and a plethora of other neurological and behavioral problems that are thought to be irreversible, according to theWorld Health Organization.

The e-mails showed that DEQ district coordinator Stephen Busch told the U.S. Environmental Protection Agency in February that Flint had "an optimized corrosion control program" to prevent lead from getting into the water system when, in fact, the city had no corrosion control program at all.

In his statement, the governor apologized to the residents of Flint and to residents of other cities with aging infrastructure.

"I want the Flint community to know how very sorry I am that this has happened. And I want all Michigan citizens to know that we will learn from this experience, because Flint is not the only city that has an aging infrastructure," he wrote.

Changes in leadership and staff aren't enough, Snyder said. The statement continued:

"I understand there can be disagreements within the scientific community. That is why I have directed both the departments of Environmental Quality and Health and Human Services to invite every external scientist who has worked on this issue to be our partners in helping us improve Flint water.

"Let's share research on water and blood lead level testing so we can arrive at accurate and mutually supported conclusions," he wrote. "Together, we should work to affirm that we're using the very best testing protocols to ensure Flint residents have safe drinking water and that we're taking steps to protect their health over the short and long term.

"I know many Flint citizens are angry and want more than an apology. That's why I'm taking the actions today to ensure a culture of openness and trust. We've already allocated $10 million to test the water, distribute water filters, and help in other ways. Last week, I called Flint Mayor Karen Weaver, and we're going to meet soon to discuss other ways the state can offer assistance.

"These are only initial steps — we fully expect to take more actions following the recommendations of our task force. When it comes to matters of health and quality of life, we're committed to doing everything we can to protect the well-being of our citizens."

MDEQ Director Wyant resigns over Flint water crisis, Snyder apologizes (Michigan Radio)
http://michiganradio.org/post/mdeq-director-wyant-resigns-over-flint-water-crisis-

snyder-apologizes#stream/0
By JAKE NEHER • 16 HOURS AGO
SHARETwitter Facebook Google+ Email
Former MDEQ director Dan Wyant
CREDIT STEVE CARMODY / MICHIGAN RADIO
UPDATED AT 5:37 PM ON 12/29/15

The head of the Michigan Department of Environmental Quality (MDEQ) has resigned over the drinking water crisis in Flint.

Gov. Rick Snyder has also now apologized to the community of Flint for his administration's involvement in the situation.

"I want the Flint community to know how very sorry I am that this has happened," said Snyder in a statement on Tuesday. "And I want all Michigan citizens to know that we will learn from this experience, because Flint is not the only city that has an aging infrastructure."

"I know many Flint citizens are angry and want more than an apology. That's why I'm taking the actions today to ensure a culture of openness and trust."

MDEQ Director Dan Wyant will step down immediately. The resignation comes after Snyder received initial findings from the task force he appointed to investigate the situation. A number of reports have pointed to mistakes the department made that resulted in elevated lead levels in the city's water.

The governor says he plans to make additional personnel changes in the department – although he hasn't announced what those will be. And he says he'll meet with Flint Mayer Karen Weaver to discuss further actions the state could take to help the city.

Also resigning from the MDEQ today was spokesman Brad Wurfel.

Letter says the state department is at fault in Flint Water Crisis (WLNS News 6)
http://wlns.com/2015/12/30/letter-says-the-state-department-is-at-fault-in-flint-water-crisis/
6 News StaffPublished: December 30, 2015, 6:11 am
Photo: MLive
LANSING, MI. (WLNS) – At the state capital, a letter sent to Governor Snyder from his Flint Water Crisis task force says there's a state department to blame for the city's water problems.

In the letter the task force says the Department of Environmental Quality must be held accountable for failing to ensure the safe drinking water for people of Flint.

It says Flint residents were exposed to toxic levels of lead in their water because of a culture of passive compliance.

In addition to the letter, Dan Wyant stepped down as director of the department

###

To: Kelley, Jeff[kelley.jeff@epa.gov]; Rowan, Anne[rowan.anne@epa.gov]; Deamer, Eileen[deamer.eileen@epa.gov]
Cc: Kaplan, Robert[kaplan.robert@epa.gov]; Nelson, Leverett[nelson.leverett@epa.gov]; Hyde, Tinka[hyde.tinka@epa.gov]
From: Hedman, Susan
Sent: Wed 12/30/2015 4:15:34 PM
Subject: Fwd: Flint Water Clips Dec. 30, 2015

FYI

Sent from my iPhone

Begin forwarded message:

> **From:** "Hedman, Susan" <hedman.susan@epa.gov>
> **Date:** December 30, 2015 at 10:13:52 AM CST
> **To:** "Meiburg, Stan" <Meiburg.Stan@epa.gov>, "Purchia, Liz" <Purchia.Liz@epa.gov>, "Grantham, Nancy" <Grantham.Nancy@epa.gov>
> **Cc:** "Kaplan, Robert" <kaplan.robert@epa.gov>
> **Subject: Fwd: Flint Water Clips Dec. 30, 2015**
>
> I think we need to reach out to TRMS to correct the repeated references to a "EPA whistleblower/rogue employee" that appear in this segment and previous segments. Our review of EPA actions in Flint show that the so-called whistleblower/rogue employee was acting under the direction of and with the support of EPA management when he tested water at three residences in Flint and prepared a report summarizing his findings. I personally objected to MDEQ management and the Governor's office when they called this R5 staffer a "rogue employee." This misrepresentation is especially problematic in the wake of the House Oversight hearing last summer, which focused on alleged whistleblowers in R5. I don't know if we need to ask for a formal correction, but we should at least ask TRMS to avoid this inaccurate characterization in future segments.
>
> I am happy to talk about this if you would like us to set up a call.
>
> Sent from my iPhone
>
> Begin forwarded message:
>
>> **From:** "Cassell, Peter" <cassell.peter@epa.gov>
>> **Date:** December 30, 2015 at 9:06:05 AM CST
>> **To:** "Peterson, John" <peterson.john@epa.gov>, "Hedman, Susan" <hedman.susan@epa.gov>, "Kaplan, Robert" <kaplan.robert@epa.gov>, "Hyde, Tinka" <hyde.tinka@epa.gov>
>> **Cc:** "Kelley, Jeff" <kelley.jeff@epa.gov>, "Rowan, Anne" <rowan.anne@epa.gov>,

"Beckmann, Ronna Erin" <beckmann.ronna@epa.gov>, "Harrison, Melissa" <Harrison.Melissa@epa.gov>, "Abrams, Dan" <Abrams.Dan@epa.gov>, "Poy, Thomas" <poy.thomas@epa.gov>, "Singer, Joshua" <Singer.Joshua@epa.gov>, "Arcaute, Francisco" <Arcaute.Francisco@epa.gov>, "Cannon, Phillippa" <Cannon.Phillippa@epa.gov>, "Deamer, Eileen" <deamer.eileen@epa.gov>, "Fortin, Denise" <Fortin.Denise@epa.gov>, "Nowotarski, Allison" <nowotarski.allison@epa.gov>, "Reshkin, Karen" <Reshkin.Karen@epa.gov>, "Loop, Travis" <Loop.Travis@epa.gov>, "Purchia, Liz" <Purchia.Liz@epa.gov>, "Henry, Timothy" <henry.timothy@epa.gov>, "Lee, Monica" <Lee.Monica@epa.gov>, "Grantham, Nancy" <Grantham.Nancy@epa.gov>, "Davis, CatherineM" <Davis.CatherineM@epa.gov>
Subject: Re: Flint Water Clips Dec. 30, 2015

Congressman Kildee was on the Rachel Maddow show last night. The clip is available at: on.msnbc.com/1krBTbv. Sorry that this wasn't in the rest of the clips.

From: Cassell, Peter
Sent: Wednesday, December 30, 2015 8:42 AM
To: Peterson, John; Hedman, Susan; Kaplan, Robert; Hyde, Tinka
Cc: Kelley, Jeff; Rowan, Anne; Beckmann, Ronna Erin; Harrison, Melissa; Abrams, Dan; Poy, Thomas; Singer, Joshua; Arcaute, Francisco; Cannon, Phillippa; Deamer, Eileen; Fortin, Denise; Nowotarski, Allison; Reshkin, Karen; Loop, Travis; Purchia, Liz; Henry, Timothy; Lee, Monica; Grantham, Nancy; Davis, CatherineM
Subject: Flint Water Clips Dec. 30, 2015

FLINT DRINKING WATER CLIPS
US. EPA REGION 5 – AS PREPARED BY PETER CASSELL (ORA/OEC/PA)
ON DEC. 30, 2015

Snyder apologizes, Wyant resigns in Flint water crisis (Detroit Free Press)
Flint water report prompts apologies, resignations (Detroit News)
Michigan Regulator Resigns Amid Flint's Lead-in-Water Crisis (AP)
Task force lays most blame for Flint water crisis on MDEQ (Michigan Radio)
Flint water scandal: Snyder apologizes, DEQ director resigns (Fox 2 Detroit)
Flint leaders applaud DEQ director's resignation, governor's apology (MLive.com)
Michigan Gov. Rick Snyder apologizes for lead levels in Flint water (Detroit 4)
Director Dan Wyant resigns after task force blasts MDEQ over Flint water crisis (MLive.com)
Auditor: State erred on Flint water but didn't mislead feds (AP/Crain's Detroit)
BREAKING: DEQ Director Resigns Over Flint Water Crisis (West Bloomfield

Patch)
MDEQ Director Wyant resigns over Flint water crisis, Snyder apologizes (Michigan Radio)
Letter says the state department is at fault in Flint Water Crisis (WLNS News 6)

Snyder apologizes, Wyant resigns in Flint water crisis (Detroit Free Press)

Paul Egan, Detroit Free Press9:07 p.m. EST December 29, 2015
http://www.freep.com/story/news/local/michigan/2015/12/29/deq-director-wyant-resigns-over-flint-water-crisis/78027052/

LANSING — Gov. Rick Snyder apologized to the City of Flint on Tuesday for the drinking water crisis that has left children poisoned by lead and announced that he accepted the resignation of Michigan Department of Environmental Quality Director Dan Wyant.

Snyder said in a news release that there will be other personnel changes at the DEQ and that the moves he announced are among "initial steps" he is taking to assure the safety of Flint residents, with more action to come.

“I want the Flint community to know how very sorry I am that this has happened," Snyder said. "And I want all Michigan citizens to know that we will learn from this experience, because Flint is not the only city that has an aging infrastructure."

The governor, who previously stood by his DEQ director amid the controversy, said, "Dan Wyant has offered his resignation, and I’ve determined that it’s appropriate to accept it."

Before joining the Snyder administration as DEQ director, Wyant was president and chief operating officer of the Edward Lowe Foundation, which promotes entrepreneurship and helps business owners grow their companies. Before that, he served as director of the Michigan Department of Agriculture under Govs. John Engler and Jennifer Granholm.

Brad Wurfel, the DEQ public information officer who apologized after criticizing a researcher's reports of rising lead levels in the blood of Flint children as irresponsible, also resigned Tuesday, a spokesman for Snyder confirmed.

The governor said he acted based on interim findings of the Flint Water Advisory Task Force, which he appointed Oct. 21 to investigate the crisis and is continuing its work. He received a letter Tuesday morning that was highly critical of the DEQ.

The letter from the task force said the "primary responsibility" for what happened in Flint lies with the DEQ; the agency "failed in its responsibility" to ensure safe drinking water for Michigan residents and "must be held accountable for that failure." It was signed by task force members Matt Davis, Chris Kolb, Larry Reynolds, Eric Rothstein and Ken Sikkema.

The Free Press reported Thursday that records obtained by the Michigan ACLU and Virginia Tech researcher Marc Edwards show that elevated lead levels in Flint's drinking water would have spurred action months sooner if the results of city testing that wrapped up in June had not been revised by the DEQ to wrongly indicate the water was safe to drink.

Auditor General Doug Ringler said in a letter released Monday that it was appropriate for the DEQ to disqualify two samples with high lead levels that did not meet the sampling criteria. But the records obtained by the ACLU and Edwards also show that a DEQ official sent Flint an e-mail saying that samples as of late June showed Flint's water had lead levels above the "action level" that would require public notice and remedial action, and he hoped the city could send the remaining required samples quickly and that they would be below the action level for lead.

The records also suggest the DEQ was not as strict in disqualifying samples with low lead levels that did not meet the testing criteria as it was in disqualifying samples with high lead readings.

'It's ... not enough'

Flint, which was under the control of a state-appointed emergency manager at the time of the cost-cutting move, switched its drinking water source, starting in April 2014, from Lake Huron water supplied by Detroit to the much more polluted and corrosive water from the Flint River.

The state has acknowledged that it misinterpreted a federal rule and failed to require Flint to add needed corrosion-control chemicals that would have prevented lead from leaching into the drinking water from pipes, connections and fixtures.

That change in the drinking-water source brought immediate complaints from Flint residents about the taste, smell and appearance of the water. The lead tests of the water could have spurred action in July, but it was not until October — after blood test results analyzed by Hurley Children's Hospital pediatrician Dr. Mona Hanna-Attisha showed elevated lead levels in Flint children — that the DEQ admitted making a mistake by failing to require the addition of corrosion-control chemicals to the Flint River water. The state also then provided funds to help Flint reconnect to Lake Huron water supplied by Detroit.

Lead can cause irreversible brain damage in children and has also been linked to behavioral problems.

Melissa Mays, a Flint resident who drank the contaminated water along with her three boys, said she was more shocked by Snyder's apology than by Wyant's resignation. She welcomed the announcements but said more DEQ officials need to be removed because Flint residents can't trust those officials to make sure their water is safe to drink today.

"This all should have happened a long time ago, and it's also not enough," she said.

Mays questioned why Snyder has not endorsed Flint Mayor Karen Weaver's declaration of a state of emergency in Flint, which she said would help secure federal funding to help rectify problems.

Snyder spokesman Dave Murray said "no formal request has been made to the state" to declare a state of emergency in Flint.

"We are committed to working with Mayor Weaver and Genesee County leaders," and the emergency management division of the Michigan State Police is working with city and county officials on potential avenues for federal aid, Murray said.

The crisis has prompted a federal class-action and calls for an investigation by the U.S. Department of Justice.

Goals: Openness, trust

Snyder said "changes in leadership and staff are not enough. I understand there can be disagreements within the scientific community. That is why I have directed both the departments of Environmental Quality and Health and Human Services to invite every external scientist who has worked on this issue to be our partners in helping us improve Flint water."

Snyder said he wants to "share research on water and blood-lead level testing so we can arrive at accurate and mutually supported conclusions. Together, we should work to affirm that we're using the very best testing protocols to ensure Flint residents have safe drinking water and that we're taking steps to protect their health over the short and long term."

The other personnel changes at DEQ referenced by Snyder, aside from Wurfel's resignation, have not yet been made, Murray said.

“I know many Flint citizens are angry and want more than an apology," Snyder said. "That's why I'm taking the actions today to ensure a culture of openness and trust. We've already allocated $10 million to test the water, distribute water filters, and help in other ways. Last week, I called Flint Mayor Karen Weaver, and we're going to meet soon to discuss other ways the state can offer assistance.

“These are only initial steps - we fully expect to take more actions following the recommendations of our task force. When it comes to matters of health and quality of life, we're committed to doing everything we can to protect the well-being of our citizens.”

The letter from the task force said a minimalist culture of "technical compliance" had developed in the DEQ's Office of Drinking Water and Municipal Assistance and "it led to MDEQ's failure to recognize a number of indications that switching the water source in Flint would — and did — compromise both water safety and water quality."

The office "must adopt a posture that is driven not by this minimalist technical compliance approach, but rather by one that is founded on what needs to be done to assure drinking water safety," the letter said.

The letter also said that both the tone and substance of DEQ statements to the public during the crisis were "completely unacceptable," marked by a "persistent tone of scorn and derision."

Task force members met with Wyant, and while he agreed with many of the task force's interim conclusions, "it was disappointing to hear his weak defense of the (corrosion control) decision," the letter said.

Senate Minority Leader Jim Ananich, D-Flint, said the personnel changes Snyder announced could be a sign of progress if they "lead to a more aggressive response and resources to improve public health."

"I still believe that legislative hearings will be required to get all the answers and help shape the necessary policy changes, and ensure this never happens again," Ananich said in a news release.

"Dan Wyant gets to walk away from this crisis, but the people of Flint do not," said Lonnie Scott, the group's executive director. "There's a lot we don't know about this man-made catastrophe. What did Gov. Snyder know and when did

he know it? We need complete transparency so that justice for the families of Flint can be realized and the proper people can be held accountable."
Contact Paul Egan: 517-372-8660, pegan@freepress.com or on Twitter @paulegan4

Flint water report prompts apologies, resignations (Detroit News)
Jim Lynch The Detroit News9:13 a.m. EST December 30, 2015
http://www.detroitnews.com/story/news/politics/2015/12/29/deq-director-wyant-resigns-due-flint-water-crisis/78028616/

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(Photo: Dale G. Young / The Detroit News)
Michigan's top environmental official resigned Tuesday after an independent task force delivered its initial findings on the Flint water contamination crisis — conclusions that also prompted an apology from Gov. Rick Snyder.
Dan Wyant, director of the Department of Environmental Quality since 2011, tendered his resignation Tuesday, marking the second agency shakeup in just over two months related to Flint's lead-tainted drinking water problems. The industrial city has been plagued by lead issues since an April 2014 switch to the Flint River as its water source.
A Snyder-appointed task force investigating the long-running situation announced it found Tuesday the DEQ "primarily responsible for failing to ensure safe drinking water in Flint." Snyder accepted the initial findings and Wyant's resignation — "I've determined that it's appropriate to accept it, he said — and then issued an apology.
"I want the Flint community to know how very sorry I am that this has happened," Snyder said in a press release. "And I want all Michigan citizens to know that we will learn from this experience, because Flint is not the only city that has an aging infrastructure."
"I know many Flint citizens are angry and want more than an apology. That's why I'm taking the actions today to ensure a culture of openness and trust."
A Flint Water Advisory Task Force co-chair blamed the DEQ's passive culture for Flint's water ills.
"Flint residents were exposed to toxic levels of lead in their water primarily due to a regulatory culture of passive technical compliance that is simply insufficient to the task of public protection," wrote Ken Sikkema, a former state senator. "We also believe that the dismissive and disrespectful tone of much of the MDEQ's response to public concerns is unacceptable."
The water switch, made while Flint was under the leadership of a Snyder-appointed emergency manager, immediately led to resident complaints about the smell, taste and discoloration of their drinking water. Eventually, researchers found a link between the switch and a rise in lead poisoning among city children.
Lead poisoning can cause learning disabilities and, at high levels, may lead to seizures, coma and death, according to the Centers for Disease Control and Prevention.
Wyant could not be reached for comment Tuesday. In October, Wyant

admitted the DEQ erred in its application of the federal Lead and Copper Rule, designed to ensure safe drinking water for residents.

Late on Tuesday, DEQ spokesman Brad Wurfel resigned as well.

Flint was allowed to begin drawing its drinking water from the river without any corrosion controls in place to prevent lead in old plumbing connections from leaching. The task force said the DEQ failed in the regulatory handling of Flint's water problems, the "substance and tone" in the department's response as well as its "interpretation of the Lead and Copper Rule."

State Sen. Jim Ananich, D-Flint, criticized the DEQ culture Tuesday, saying workers were more concerned with following rules than informing the public about potential problems.

"When you have lead in the water, I don't care if you follow the rules or not: You need to notify the public first," Ananich said.

Critics have put increasing pressure on Snyder's administration to answer for the Flint water decisions in the last two years. Among the harshest critics is Marc Edwards, a Virginia Tech researcher whose water sampling at Flint homes and public record requests have helped keep the spotlight on the state government's actions.

But Edwards said Wyant should not be the one on the chopping block.

"I'm glad that someone is sorry and someone is being held accountable," Edwards said. "But Dan Wyant would not be at the top of my list — or even on the list. I feel strongly he was misled by his staff at every point, and he was put in publicly embarrassing situations by the staff's misinformation."

Dr. Mona Hanna-Attisha, a Hurley Medical Center pediatrician who uncovered lead exposure in city children following the switch, echoed Edwards by saying DEQ staffers' mistakes led to Flint's problems.

"(Wyant) wasn't directly involved," she said. "There are other people, particularly in (the Office of Drinking Water and Municipal Assistance), that need to take some responsibility. ... (Wyant) was a nice person being fed bad information."

In 2013, Flint agreed to create a new regional water authority in an attempt to save money. The city had tried to negotiate lower rates with former provider Detroit Water and Sewerage Department for years, to little avail.

But the Karegondi Water Authority will not be completed until some time next year. In the interim, Flint looked to its river to provide drinking water. That water turned out to be far more corrosive than the Lake Huron water used by the Detroit system.

With pressure mounting from troublesome water samples and health studies, Flint reconnected to the Detroit system in October.

Snyder previously was elusive in acknowledging the extent of the state's responsibility for the lead contamination of the city's water when it switched to the more corrosive Flint River in 2014, saying he was awaiting the task force report. On Tuesday, the governor was more contrite.

"We've already allocated $10 million to test the water, distribute water filters, and help in other ways," Snyder said. "Last week, I called Flint Mayor Karen Weaver, and we're going to meet soon to discuss other ways the state can offer assistance."

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Michigan Regulator Resigns Amid Flint's Lead-in-Water Crisis (AP)
By DAVID EGGERT, ASSOCIATED PRESS
LANSING, Mich. — Dec 29, 2015, 7:16 PM ET
http://abcnews.go.com/Politics/wireStory/michigan-official-resigns-amid-flint-water-issue-35996502

Michigan's top environmental regulator resigned Tuesday after elevated levels of lead were found in Flint children during a drinking water crisis that a task force blamed primarily on his agency.

Gov. Rick Snyder accepted the resignation of Department of Environmental Quality Director Dan Wyant and apologized for what occurred in Flint, which switched its drinking water supply in a cost-cutting move while under state financial management. Communications director Brad Wurfel also resigned, and Snyder said he plans additional personnel changes in the agency.

Wyant quit the same day a task force appointed by the Republican governor reported that the department was primarily responsible for the fiasco because it did not require Flint to keep corrosive water from leaching lead from service pipes into residents' homes and belittled concerns from the public. Exposure to lead can cause behavior problems and learning disabilities in children.

"I want the Flint community to know how very sorry I am that this has happened," Snyder said in a written statement. "And I want all Michigan citizens to know that we will learn from this experience, because Flint is not the only city that has an aging infrastructure."

The five-member task force, which previously brought up concerns about a lack of organization in responding to the disaster, said the environmental department's Office of Drinking Water and Municipal Assistance has a "minimalist approach" to regulatory oversight in which "technical compliance" is sufficient. It faulted the agency for a "tone of scorn and derision" toward the public, including outside water and health experts who raised alarm bells.

The task force confirmed that the state did not follow the federal Lead and Copper Rule when Flint disconnected from Detroit's water system in April 2014 and switched to Flint River water while waiting to connect to a new regional water authority.

Detroit's water from Lake Huron had been treated for corrosion. State officials thought that after Flint made the transition to the river it could test the new water for lead over two six-month intervals to determine potential corrosion treatment instead of needing to immediately add corrosion controls. Flint returned to Detroit's water in October after a public health emergency was declared.

The task force, which met with Wyant on Dec. 16, noted his substantial agreement with many of its conclusions but expressed disappointment with his "weak defense" regarding the federal rule.

The U.S. Environmental Protection Agency said in a November memo that there are "differing possible interpretations" of the Lead and Copper Rule, explaining that it does not explicitly discuss a scenario like in Flint.

But task force members said, "Individuals and agencies responsible must be held accountable in a timely fashion."
They also cited recent revelations of the Department of Health and Human Services' apparent early knowledge of and silence about elevated blood-lead levels, and said the committee's final report in early 2016 would review local governments' decision processes while under emergency management.
"I know many Flint citizens are angry and want more than an apology. That's why I'm taking the actions today to ensure a culture of openness and trust," Snyder said.
Wyant, 56, led the Environmental Quality Department for nearly five years. He previously served as the state's agricultural director under Republican Gov. John Engler and Democratic Gov. Jennifer Granholm.
"If these personnel moves and change in tone lead to a more aggressive response and resources to improve public health, then we are finally making progress," said Senate Minority Leader Jim Ananich, a Democrat from Flint.

Follow David Eggert at http://twitter.com/DavidEggert00 . His work can be found at http://bigstory.ap.org/author/david-eggert

Task force lays most blame for Flint water crisis on MDEQ (Michigan Radio)

By VINCENT DUFFY • 14 HOURS AGO
SHARETwitter Facebook Google+ Email
http://michiganradio.org/post/task-force-lays-most-blame-flint-water-crisis-mdeq#stream/0
MDEQ Director Dan Wyant at a recent press conference.
CREDIT SCREEN GRAB / MLIVE USTREAM
A task force appointed by Gov. Rick Snyder says Michigan's environmental regulatory agency is primarily responsible for the state's failure to ensure safe drinking water for Flint residents.

The Flint Water Advisory Task Force says in a letter to Snyder that the state Department of Environmental Quality "must be held accountable for that failure."

The letter was made public Tuesday. You can read it here.

Corrosive Flint River water leached lead from service pipes into homes after the city switched last year from Detroit water. Elevated blood-lead levels later were found in some children.

Department of Environmental Quality Director Dan Wyant and spokesman Brad Wurfel both resigned Tuesday.

Task force co-chair Ken Sikkema says in the letter that "Flint residents were exposed to toxic levels of lead in their water primarily due to a regulatory culture of passive technical compliance."

The FWATF letter stated in part:

“We believe the primary responsibility for what happened in Flint rests with the Michigan Department of Environmental Quality (MDEQ). Although many individuals and entities at state and local levels contributed to creating and prolonging the problem, MDEQ is the government agency that has responsibility to ensure safe drinking water in Michigan. It failed in that responsibility and must be held accountable for that failure.”

“The City of Flint’s water customers—fellow Michigan citizens—were needlessly and tragically exposed to toxic levels of lead through their drinking water supply. They deserve a commitment to properly assess responsibility and ensure accountability. They also deserve a commitment to needed mitigation in both the short and long term. The Flint water crisis never should have happened. Having failed to prevent it, state government should coordinate a sustained, public-health-focused response to remedy, to the fullest extent possible, the impacts on the Flint community.”

The letter outlined three areas where MDEQ failed:

Regulatory Failure
Failure in Substance and Tone of MDEQ Response to the Public
Failure in MDEQ Interpretation of the Lead and Copper Rule
This is the second letter sent by the Task Force. The first, sent earlier this month, made several recommendations concerning coordination of state efforts that were supported and implemented by Governor Snyder.

The full FWATF report is expected to be completed in early 2016.

Members of the Task Force include:

Matthew Davis, M.D., M.A.P.P., is professor of pediatrics and internal medicine at the University of Michigan Health System and professor of public policy at the Gerald R. Ford School at the University of Michigan.

Chris Kolb is president of the Michigan Environmental Council.

Lawrence Reynolds, M.D., is a pediatrician in Flint who serves as president of the Mott Children’s Health Center.

Eric Rothstein is a national water issues consultant and principal at the Galardi Rothstein Group. He served as an independent advisor on the creation of the Great Lakes Water Authority.

Ken Sikkema is a senior policy fellow at Public Sector Consultants. (Full Disclosure - he is also a regular commenter on Michigan Radio.)

The FWATF was formed by Governor Snyder to review actions regarding the Flint water system and offer recommendations both for Flint and Michigan to protect the health and safety of state residents.

Flint water scandal: Snyder apologizes, DEQ director resigns (Fox 2 Detroit)

Gov. Rick Snyder announced changes at the Michigan DEQ.
http://www.fox2detroit.com/news/local-news/66000998-story

POSTED:DEC 29 2015 10:25PM EST
UPDATED:DEC 29 2015 11:24PM EST
FLINT, Mich. - Gov. Rick Snyder says he's sorry for Flint's water crisis as one of his top appointees resigns.
The director of the state's department of environmental quality Dan Wyant resigned.

Wyant was in charge of keeping the water safe. When Flint switched its drinking water source from Lake Huron water supplied by detroit...to the flint river - to save money -- corrosion flowed through the pipes.

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Tests showed elevated levels of lead in the city's drinking water back in June. But the state didn't take action until October after blood testing showed high lead levels in Flint's children.
Flint water scandal: Snyder apologizes, DEQ director resigns
Snyder's office issued a press release Tuesday:
"I want the Flint community to know how very sorry I am that this has happened," he said. "And I want all Michigan citizens to know that we will learn from this experience, because Flint is not the only city that has an aging infrastructure.
"When I became aware that the city of Flint's water showed elevated lead levels and that the state's handling of the situation was being questioned," he said. "I requested funding to switch the source back to the Great Lakes Water Authority and appointed an independent task force to identify possible missteps and areas for improvement.
"The task force has done an exceptional job, reviewing stacks of documents and interviewing scores of Flint, Genesee County, state and federal officials … We'll continue to work with the community members to make sure we hear and respond to their concerns.
"MDEQ Director Dan Wyant has offered his resignation, and I've determined that it's appropriate to accept it. I'm also making other personnel changes at

MDEQ to address problems cited by the task force."

In a previous FOX 2 report it was discovered a year after the city began using the Flint River as its water source; a local hospital's study found the number of Flint kids under the age of 5 years old with above average lead levels nearly doubled city-wide and in some cases, tripled.

Virginia Tech University tested resident Ronda Thornton's water. Anything more than 30 micrograms a liter is a sign of serious lead contamination. Hers registered 138.

"I know many Flint citizens are angry and want more than an apology," Snyder said. "That's why I'm taking the actions today to ensure a culture of openness and trust. We've already allocated $10 million to test the water, distribute water filters, and help in other ways. Last week, I called Flint Mayor Karen Weaver, and we're going to meet soon to discuss other ways the state can offer assistance."

"But changes in leadership and staff are not enough. I understand there can be disagreements within the scientific community. That is why I have directed both the departments of Environmental Quality and Health and Human Services to invite every external scientist who has worked on this issue to be our partners in helping us improve Flint water. Let's share research on water and blood lead level testing so we can arrive at accurate and mutually supported conclusions. Together, we should work to affirm that we're using the very best testing protocols to ensure Flint residents have safe drinking water and that we're taking steps to protect their health over the short and long term."

"These are only initial steps - we fully expect to take more actions following the recommendations of our task force. When it comes to matters of health and quality of life, we're committed to doing everything we can to protect the well-being of our citizens."

Flint leaders applaud DEQ director's resignation, governor's apology (MLive.com)

http://www.mlive.com/news/flint/index.ssf/2015/12/gov_rick_snyder_accepts_mdeq_h.html

By Jiquanda Johnson | jjohns16@mlive.com

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on December 29, 2015 at 6:41 PM, updated December 29, 2015 at 8:44 PM

DEQ spokesman also resigns over Flint water crisis, says city 'didn't feel like we cared'

Flint leaders applaud DEQ director's resignation, governor's apology

Congressman Dan Kildee will again discuss Flint water on 'The Rachel Maddow Show'

Gov. Rick Snyder still doesn't get it when it comes to Flint water crisis

Director Dan Wyant resigns after task force blasts MDEQ over Flint water crisis

All Stories

FLINT, MI – Mayor Karen Weaver and other local leaders say the resignation of Michigan Department of Environmental Quality Director Dan Wyant and release of Flint Water Task Force findings Tuesday are the first steps toward holding people accountable for Flint's water crisis.

"There is some accountability being put in place and that's a good thing," Weaver said. "That's what is happening and I think that's a good sign because it shows that our voices have been heard and that they will continue to be heard."

According to a statement issued by Gov. Rick Snyder on Dec. 29, he has accepted Wyant's resignation after findings from a report by the task force, which was created by Snyder in October to look into Flint's water crisis. In the same statement, Snyder also said he was "sorry" to the Flint community for the water issues.

"I know many Flint citizens are angry and want more than an apology," Snyder said. "That's why I'm taking the actions today to ensure a culture of openness and trust ... Last week, I called Flint Mayor Karen Weaver, and we're going to meet soon to discuss other ways the state can offer assistance."

Weaver confirmed that she will be meeting with Snyder after the first of the year.

"I hope this will help move Flint forward," she said. "One thing that has been an issue for us here in Flint has been that broken trust. We will have a new person that we will be working with, and that's a positive step."

The task force report, which is preliminary, revealed that the MDEQ failed the city in multiple areas including regulatory failures, substance and tone of the MDEQ's response to public and the interpretation of the federal lead and copper rule.

"We believe the primary responsibility for what happened in Flint rests with the Michigan Department of Environmental Quality (MDEQ)," said the preliminary report. "Although many individuals and entities at state and local levels contributed to creating a prolonging problem, MDEQ is the government agency that has responsibility to ensure safe drinking water in Michigan. It failed in that responsibility and must be held accountable."

State Rep. Sheldon Neeley, D-Flint, said that he and others in the city have called for legislative hearings regarding the water crisis and that Wyant's departure is just the first, not the only, person held responsible for the condition of Flint's water.

"For months, the call has been public and aggressive for Dan Wyant to remove himself from his position, or have Gov. Rick Snyder do the deed for him," Neeley said in a statement issued Dec. 29. "There are many culpable parties involved in the continued decline of health and safety during the water crisis in the city of Flint, and Wyant was just one figure in a menagerie of offenders."

Neeley, who along with Sen. Jim Ananich, D-Flint, have been pushing for legislative hearings on Flint's water crisis, went on to say there is still "cleanup do be done" and he is "glad" that Wyant has stepped down in what Neeley considers a "disorganized and flawed DEQ."

The task force's report also says members spoke with Wyant on Dec. 16 and they were not pleased with how he responded to the city's water crisis and he was in agreement with some of their findings.

"It is our understanding that he has drawn similar conclusions in his own evaluation of MDEQ's role in the Flint water crisis," said the report. "At the same time, it was disappointing to hear his weak defense of the CCT (corrosion control treatment) decision based on the EPA's November 2015 memorandum."

Both Ananich and Neeley's push led to an independent review by the Office of State Auditor Genera,l which made it clear in a Dec. 23 letter that corrosion control should have been maintained during Flint's transition from Detroit water to Flint River water. The review was based on a series of questions sent to the auditor from Ananich in October.

The corrosiveness of Flint River water is blamed for lead that leached from pipes into drinking water, causing elevated levels of lead in the blood of Flint children.

"I think the best apology (Snyder) can offer the residents of Flint and the rest of the state is a promise that this will never happen again," Ananich said. "The proof is in the long-term commitment. I'm going to continue to work to make sure that we get that."

Michigan Gov. Rick Snyder apologizes for lead levels in Flint water (Detroit 4)

DEQ head Dan Wyant's resigns after task force blames department for crisis

By Jason Colthorp – Reporter
http://www.clickondetroit.com/news/michigan-official-resigns-amid-flint-water-issue

LANSING, Mich. - Gov. Rick Snyder issued an apology Tuesday as Dan Wyant, his head of the Department of Environmental Quality, resigned after a task force lead by the state's auditor general blasted the DEQ for it's role in Flint's water crisis.

The state's mishandling of Flint's water system ultimately exposed Flint residents to dangerously elevated levels of lead.

“I want the Flint community to know how very sorry I am that this has happened,” Snyder said in a statement. “And I want all Michigan citizens to know that we will learn from this experience.”

The governor's apology and the DEQ head's resignation has helped to temper concerns that no one cared about Flint said the city's mayor Karen Weaver.

“One of the things we've always talked about is accountability and that seems to be what's happening,” said Weaver. “It also let us know here in Flint that our voice is being heard.”

Snyder's apology and Wyant's resignation come after the task force released their finding that the DEQ was primarily at fault for Flint's unhealthy level of lead in their drinking water.

“Although many contributed to creating and prolonging the problem, MDEQ is the government agency that has responsibility to ensure safe drinking water in Michigan,” the task force said in a written statement. “It failed in that responsibility."

For many Flint residents like Kim Peterson, Tuesday's announcements do little to help them feel confident about the safety of their drinking water. Peterson says she is still hesitant to drink the water even though it is again coming from a healthy source in Lake Huron.

"I take it to mean that something was really wrong with this whole system of checks and balances," she said.

"You don't trust it because you've heard so many conflicting things from so many different people, so we still continue to buy the water."

Mayor Weaver, however, believes Snyder's apology is a first step toward rebuilding trust: "This is a good step to get some things started because people had lost faith and they had lost trust."

Snyder has promised more steps will be taken after the task force releases its final and full report.

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Director Dan Wyant resigns after task force blasts MDEQ over Flint water crisis (MLive.com)
http://www.mlive.com/lansing-news/index.ssf/2015/12/deq_director_dan_wyant_resigns.html
Michigan Department of Environmental Quality Director Dan Wyant speaks during a news conference in Flint on Oct. 2, 2015. (Danny Miller | MLive.com)
PrintEmail
By Emily Lawler | elawler@mlive.com
on December 29, 2015 at 4:39 PM, updated December 29, 2015 at 6:51 PM
LANSING, MI -- Gov. Rick Snyder on Tuesday accepted a resignation from Michigan Department of Environmental Quality Director Dan Wyant after a task force laid responsibility for the Flint water crisis at the feet of the department.
Snyder, in a statement, announced Wyant's resignation and apologized to Flint residents after he received a letter from the Flint Water Advisory Task Force.
"...MDEQ Director Dan Wyant has offered his resignation, and I've determined that it's appropriate to accept it. I'm also making other personnel changes at MDEQ to address problems cited by the task force," Snyder said.
Wyant and the DEQ have come under fire in recent months for handling a Flint drinking water crisis that lead to corrosive water running through city pipes and resulted in children with elevated levels of lead. In October, Wyant acknowledgeda mistake in oversight from his office, saying DEQ officials were confused about federal regulations on making the drinking water less corrosive.
The task force in its letter blamed the department for the crisis.
"We believe the primary responsibility for what happened in Flint rests with the

Michigan Department of Environmental Quality (MDEQ)," read the letter to Snyder.

"Although many individuals and entities at state and local levels contributed to creating and prolonging the problem, MDEQ is the government agency that has responsibility to ensure safe drinking water in Michigan. It failed in that responsibility and must be held accountable for that failure."

The task force cited DEQ's involvement as regulatory failure, failure in substance and tone of response to the public and a failure of interpreting the lead and copper rule.

Gov. Rick Snyder recently named the Flint water crisis as his biggest disappointment in 2015.

Wyant had a long track record of service for the state. He served as director of the Michigan Department of Agriculture under both Democratic Gov. Jennifer Granholm and Republican Gov. John Engler before Gov. Rick Snyder tapped him to head up the DEQ in 2011.

He shepherded the department through a transition into being its own entity again after Gov. Jennifer Granholm had combined it with the Department of Natural Resources, forming the Department of Natural Resources and Environment. He also led the "quality of life group" within state government, meaning he coordinated efforts between the DNR, DEQ and Department of Agriculture and Rural Development.

The statement from Snyder alluded to other structural changes within the DEQ, and spokesperson Dave Murray said those decisions would be made in the coming days. DEQ spokesperson Brad Wurfel did not immediately return a call for comment.

Wyant's resignation met with mixed reaction from political groups and leaders.

Senate Minority Leader Jim Ananich (D-Flint) released the following statement:

"If these personnel moves and change in tone lead to a more aggressive response and resources to improve public health, then we are finally making progress. I still believe that legislative hearings will be required to get all the answers and help shape the necessary policy changes, and ensure this never happens again."

Attorney General Bill Schuette praised Wyant's service to the state.

"I am saddened to hear of the resignation of Department of Environment Quality Director Dan Wyant. In my 20-plus years of knowing him, Dan has been a hardworking, dedicated public servant. I am committed to working with all parties, including the legislature and Governor, to ensure the public's health and the well being of Michigan residents."

Democratic Congressman Dan Kildee, who represents Flint, said the steps taken today were appropriate but encouraged further action.

"Governor Snyder's apology over the Flint water crisis is appropriate, as are personnel changes announced today at the Department of Environmental Quality," Kildee said.

"Through this ongoing crisis, the people of Flint did nothing wrong – they are victims of this failure of government. The State of Michigan must not only acknowledge its role in this crisis, but also take responsibility and act right away to make it right."

He urged the state to establish a fund to ensure that kids receive developmental, nutritional and educational resources to help overcome the effects of their lead exposure.

Rep. Sheldon Neeley, D-Flint, said Wyant was not the only offender.

"For months, the call has been public and aggressive for Dan Wyant to remove himself from his position, or to have Gov. Rick Snyder do the deed for him. There are many culpable parties involved in the continued decline of health and safety during the water crisis in the city of Flint, and Wyant was just one figure in a menagerie of offenders," Neeley said.

"While there is still much cleanup to be done, I am glad Mr. Wyant realized he could no longer continue as the head of the disorganized and flawed DEQ, and I call on Gov. Snyder to take careful effort in repairing this department so that it earns back the trust of the people of Flint and this great state.

Progress Michigan said there had been a lack of accountability for the Flint water crisis.

"So far under Gov. Rick Snyder's watch, there has been zero accountability in this crisis and that continues today," said Lonnie Scott, executive director of Progress Michigan.

"Dan Wyant gets to walk away from this criss, but the people of Flint do not. There's a lot we don't know about this man-made catastrophe. What did Gov. Snyder know and when did he know it? We need complete transparency so that justice for the families of Flint can be realized and the proper people can be held accountable. All documentation related this this crisis needs to be released to the public immediately."

Emily Lawler is a Capitol/Business reporter for MLive. You can reach her atelawler@mlive.com, subscribe to her on Facebook or follow her on Twitter:@emilyjanelawler.

Auditor: State erred on Flint water but didn't mislead feds (AP/Crain's Detroit)

http://www.crainsdetroit.com/article/20151228/NEWS01/151229867/auditor-state-erred-on-flint-water-but-didnt-mislead-feds By David Eggert
Associated Press

Michigan Department of Environmental Quality Environment More +

LANSING — The director of Michigan's Department of Environmental Quality has resigned after the Flint Water Task Force delivered its findings on the the city's water contamination crisis to Gov. Rick Snyder.

Snyder said Tuesday afternoon in a statement that he accepted the resignation of Dan Wyant and plans to make "other personnel changes at MDEQ to address problems cited by the task force.

"But changes in leadership and staff are not enough."

In a preliminary report released Monday, Michigan's auditor general said state regulators should have required Flint to treat its corrosive drinking water to keep lead from leaching from service lines into people's homes but did not purposely mislead federal officials about the lack of corrosion control.

Doug Ringler, citing a memo issued last month by the U.S. Environmental Protection Agency, concluded that the Michigan Department of Environmental

Quality erred in not requiring the city to immediately combat corrosion when it switched from Detroit's system to the Flint River in April 2014 in a cost-cutting move while under state financial management. State officials interpreted federal rules to mean Flint could make the transition and then test the new water for lead over two six-month intervals to determine potential corrosion treatment.

Flint children have been found to have elevated levels of lead in their blood since the water change. Gov. Rick Snyder's administration initially downplayed concerns but later committed funding to reconnect Flint to Detroit and to provide filters, testing and other services.

Ringler was already conducting an audit of Michigan's Office of Drinking Water and Municipal Assistance when the Flint corrosion issue arose. At the request of Senate Minority Leader Jim Ananich, he answered questions specific to Flint's lead contamination, including concerns that state regulators misled federal environmental regulators.

In February, a DEQ water supervisor told the EPA that Flint had a corrosion control program in place. But in April, an EPA official confirmed through another DEQ official that the city was not practicing corrosion treatment, according to emails.

The EPA apparently interpreted the word "program" to mean treatment, while the DEQ meant it as testing to determine if corrosion controls would be needed in the future.

"Based on our review of this and other emails, we have no specific reason to believe that DEQ willfully misrepresented the information to the EPA," Ringler wrote in a letter dated Wednesday and made public Monday.

The auditor concluded, however, that regardless of confusion over the federal rule, the state should have required Flint to start pursuing corrosion treatment in March after the first six months of testing showed too-high lead levels instead of waiting until August after a second six-month period. He also said the DEQ did not verify that Flint was correctly sampling water from houses only with lead pipes or lead service lines. He suggested that the department consider doing so.

"We agreed with the findings in the Auditor General's review," DEQ spokesman Brad Wurfel said. "The findings align with our internal department review. We appreciate the Auditor General's work to provide a fair and well considered look at some key issues."

The Republican governor has come under scrutiny for the Flint fiasco. Spokesman Dave Murray said the letter "includes some criticisms, but also reflects that state officials were following accepted protocols, or in one case, an interpretation of the corrosion control program that the EPA later clarified. But we need to do better in ensuring Flint residents have safe water and tracking children affected by elevated lead levels."

Ananich, D-Flint, said "there are serious failings in our system that must be addressed" and again called for GOP leaders to schedule legislative hearings. They have rejected the requests, citing the work of a task force formed by Snyder.

The auditor's letter did not provide clarity on who specifically decided to use the

Flint River for water. It was supposed to be an interim source until the city could join a new system getting water from Lake Huron.
Ringler noted that the city council voted in March 2013 to support moving to the Karegnondi Water Authority but was "silent" on using the river temporarily. Flint was being run by a Snyder-appointed manager until this past April and remains under some state oversight.

BREAKING: DEQ Director Resigns Over Flint Water Crisis (West Bloomfield Patch)
Gov. Rick Snyder apologizes to Flint, pledges to help officials address public health crisis surrounding dangerous lead levels in water.
http://patch.com/michigan/westbloomfield/breaking-deq-director-resigns-over-flint-water-crisis
West Bloomfield, MI

By BETH DALBEY (Patch Staff) December 29, 2015

LANSING, MI – The director of the Michigan Department of Environmental Quality has resigned over the Flint water debacle, Gov. Rick Snyder said Tuesday.
DEQ Director Dan Wyant "has offered his resignation, and I've determined that it's appropriate to accept it," Snyder said in a statement.

The governor said he will be "making other personnel changes at MDEQ" as well.

State officials encouraged officials in Flint, where the mayor has asked for federal emergency reliefto deal with a public health crisis resulting from high lead levels in water, to understate the results, according to e-mails obtained by the American Civil Liberties Union of Michigan and Marc Edwards, a Virginia Tech researcher who helped bring the water crisis to the forefront.

After the testing revealed dangerous lead levels in June, the Michigan Department of Environmental Quality wrongly indicated the water was safe to drink, according to the e-mails.

Related

Erin Brockovich Keeping an Eye on Flint's 'Poop Water'
Pediatrician Exposed Crisis of Lead in Flint Water
State Delayed Action on Lead in Flint Water
The financially struggling city of Flint turned off the taps to water from Detroit, which gets its supply from Lake Huron, and switched to water from the Flint River in a money-saving move in 2014. Flint was under the control of a state-appointed emergency manager at the time.

The e-mail trail suggests state officials were aware of the impending water crisis well ahead of a study released in September by West Bloomfield pediatrician Dr. Mona Hanna-Attisha, pediatric residency director at Flint's Hurley Children's Hospital.

More from West Bloomfield Patch
10 Amazon Deals On Accessories For Your New Smartphone
Michigan State Has 'Unfinished Business' in Cotton Bowl: Watch
Penguins! See Detroit Zoo's Newest Residents: Watch
Opioid Addicts Younger Than Ever: Study

The study showed the proportion of children with above-average levels of lead in their blood had nearly doubled since the city began getting its water from the Flint River.
The consequences of lead poisoning are serious and long lasting.

Lead's trail is virtually invisible, discoverable only through finger-prick blood test or when children begin showing signs of learning disabilities, reduced IQ, behavioral changes, anti-social behavior, anemia, hypertension, renal impairment, immunotoxicity and a plethora of other neurological and behavioral problems that are thought to be irreversible, according to theWorld Health Organization.

The e-mails showed that DEQ district coordinator Stephen Busch told the U.S. Environmental Protection Agency in February that Flint had "an optimized corrosion control program" to prevent lead from getting into the water system when, in fact, the city had no corrosion control program at all.

In his statement, the governor apologized to the residents of Flint and to residents of other cities with aging infrastructure.

"I want the Flint community to know how very sorry I am that this has happened. And I want all Michigan citizens to know that we will learn from this experience, because Flint is not the only city that has an aging infrastructure," he wrote.

Changes in leadership and staff aren't enough, Snyder said. The statement continued:

"I understand there can be disagreements within the scientific community. That is why I have directed both the departments of Environmental Quality and Health and Human Services to invite every external scientist who has worked on this issue to be our partners in helping us improve Flint water.

"Let's share research on water and blood lead level testing so we can arrive at accurate and mutually supported conclusions," he wrote. "Together, we should work to affirm that we're using the very best testing protocols to ensure Flint residents have safe drinking water and that we're taking steps to protect their health over the short and long term.

“I know many Flint citizens are angry and want more than an apology. That’s why I’m taking the actions today to ensure a culture of openness and trust. We’ve already allocated $10 million to test the water, distribute water filters, and help in other ways. Last week, I called Flint Mayor Karen Weaver, and we’re going to meet soon to discuss other ways the state can offer assistance.

“These are only initial steps — we fully expect to take more actions following the recommendations of our task force. When it comes to matters of health and quality of life, we’re committed to doing everything we can to protect the well-being of our citizens.”

MDEQ Director Wyant resigns over Flint water crisis, Snyder apologizes (Michigan Radio)
http://michiganradio.org/post/mdeq-director-wyant-resigns-over-flint-water-crisis-snyder-apologizes#stream/0
By JAKE NEHER • 16 HOURS AGO
SHARETwitter Facebook Google+ Email
Former MDEQ director Dan Wyant
CREDIT STEVE CARMODY / MICHIGAN RADIO
UPDATED AT 5:37 PM ON 12/29/15

The head of the Michigan Department of Environmental Quality (MDEQ) has resigned over the drinking water crisis in Flint.

Gov. Rick Snyder has also now apologized to the community of Flint for his administration’s involvement in the situation.

“I want the Flint community to know how very sorry I am that this has happened,” said Snyder in a statement on Tuesday. “And I want all Michigan citizens to know that we will learn from this experience, because Flint is not the only city that has an aging infrastructure.”

“I know many Flint citizens are angry and want more than an apology. That’s why I’m taking the actions today to ensure a culture of openness and trust.”

MDEQ Director Dan Wyant will step down immediately. The resignation comes after Snyder received initial findings from the task force he appointed to investigate the situation. A number of reports have pointed to mistakes the department made that resulted in elevated lead levels in the city’s water.

The governor says he plans to make additional personnel changes in the department – although he hasn’t announced what those will be. And he says he’ll meet with Flint Mayer Karen Weaver to discuss further actions the state could take to help the city.

Also resigning from the MDEQ today was spokesman Brad Wurfel.

Letter says the state department is at fault in Flint Water Crisis (WLNS News 6)
http://wlns.com/2015/12/30/letter-says-the-state-department-is-at-fault-in-flint-water-crisis/
6 News StaffPublished: December 30, 2015, 6:11 am
Photo: MLive
LANSING, MI. (WLNS) – At the state capital, a letter sent to Governor Snyder from his Flint Water Crisis task force says there's a state department to blame for the city's water problems.

In the letter the task force says the Department of Environmental Quality must be held accountable for failing to ensure the safe drinking water for people of Flint.

It says Flint residents were exposed to toxic levels of lead in their water because of a culture of passive compliance.

In addition to the letter, Dan Wyant stepped down as director of the department

###

To: Hedman, Susan[hedman.susan@epa.gov]; Meiburg, Stan[Meiburg.Stan@epa.gov]; Grantham, Nancy[Grantham.Nancy@epa.gov]
Cc: Kaplan, Robert[kaplan.robert@epa.gov]
From: Purchia, Liz
Sent: Wed 12/30/2015 6:22:59 PM
Subject: RE: Flint Water Clips Dec. 30, 2015

We'll work with your comms staff on this moving forward.

From: Hedman, Susan
Sent: Wednesday, December 30, 2015 11:14 AM
To: Meiburg, Stan <Meiburg.Stan@epa.gov>; Purchia, Liz <Purchia.Liz@epa.gov>; Grantham, Nancy <Grantham.Nancy@epa.gov>
Cc: Kaplan, Robert <kaplan.robert@epa.gov>
Subject: Fwd: Flint Water Clips Dec. 30, 2015

I think we need to reach out to TRMS to correct the repeated references to a "EPA whistleblower/rogue employee" that appear in this segment and previous segments. Our review of EPA actions in Flint show that the so-called whistleblower/rogue employee was acting under the direction of and with the support of EPA management when he tested water at three residences in Flint and prepared a report summarizing his findings. I personally objected to MDEQ management and the Governor's office when they called this R5 staffer a "rogue employee." This misrepresentation is especially problematic in the wake of the House Oversight hearing last summer, which focused on alleged whistleblowers in R5. I don't know if we need to ask for a formal correction, but we should at least ask TRMS to avoid this inaccurate characterization in future segments.

I am happy to talk about this if you would like us to set up a call.

Sent from my iPhone

Begin forwarded message:

> **From:** "Cassell, Peter" <cassell.peter@epa.gov>
> **Date:** December 30, 2015 at 9:06:05 AM CST
> **To:** "Peterson, John" <peterson.john@epa.gov>, "Hedman, Susan" <hedman.susan@epa.gov>, "Kaplan, Robert" <kaplan.robert@epa.gov>, "Hyde, Tinka" <hyde.tinka@epa.gov>
> **Cc:** "Kelley, Jeff" <kelley.jeff@epa.gov>, "Rowan, Anne" <rowan.anne@epa.gov>, "Beckmann, Ronna Erin" <beckmann.ronna@epa.gov>, "Harrison, Melissa" <Harrison.Melissa@epa.gov>, "Abrams, Dan" <Abrams.Dan@epa.gov>, "Poy, Thomas"

<poy.thomas@epa.gov>, "Singer, Joshua" <Singer.Joshua@epa.gov>, "Arcaute, Francisco" <Arcaute.Francisco@epa.gov>, "Cannon, Phillippa" <Cannon.Phillippa@epa.gov>, "Deamer, Eileen" <deamer.eileen@epa.gov>, "Fortin, Denise" <Fortin.Denise@epa.gov>, "Nowotarski, Allison" <nowotarski.allison@epa.gov>, "Reshkin, Karen" <Reshkin.Karen@epa.gov>, "Loop, Travis" <Loop.Travis@epa.gov>, "Purchia, Liz" <Purchia.Liz@epa.gov>, "Henry, Timothy" <henry.timothy@epa.gov>, "Lee, Monica" <Lee.Monica@epa.gov>, "Grantham, Nancy" <Grantham.Nancy@epa.gov>, "Davis, CatherineM" <Davis.CatherineM@epa.gov>
Subject: Re: Flint Water Clips Dec. 30, 2015

Congressman Kildee was on the Rachel Maddow show last night. The clip is available at: on.msnbc.com/1krBTbv. Sorry that this wasn't in the rest of the clips.

From: Cassell, Peter
Sent: Wednesday, December 30, 2015 8:42 AM
To: Peterson, John; Hedman, Susan; Kaplan, Robert; Hyde, Tinka
Cc: Kelley, Jeff; Rowan, Anne; Beckmann, Ronna Erin; Harrison, Melissa; Abrams, Dan; Poy, Thomas; Singer, Joshua; Arcaute, Francisco; Cannon, Phillippa; Deamer, Eileen; Fortin, Denise; Nowotarski, Allison; Reshkin, Karen; Loop, Travis; Purchia, Liz; Henry, Timothy; Lee, Monica; Grantham, Nancy; Davis, CatherineM
Subject: Flint Water Clips Dec. 30, 2015

FLINT DRINKING WATER CLIPS
US. EPA REGION 5 – AS PREPARED BY PETER CASSELL (ORA/OEC/PA) ON DEC. 30, 2015

Snyder apologizes, Wyant resigns in Flint water crisis (Detroit Free Press)
Flint water report prompts apologies, resignations (Detroit News)
Michigan Regulator Resigns Amid Flint's Lead-in-Water Crisis (AP)
Task force lays most blame for Flint water crisis on MDEQ (Michigan Radio)
Flint water scandal: Snyder apologizes, DEQ director resigns (Fox 2 Detroit)
Flint leaders applaud DEQ director's resignation, governor's apology (MLive.com)
Michigan Gov. Rick Snyder apologizes for lead levels in Flint water (Detroit 4)
Director Dan Wyant resigns after task force blasts MDEQ over Flint water crisis (MLive.com)
Auditor: State erred on Flint water but didn't mislead feds (AP/Crain's Detroit)
BREAKING: DEQ Director Resigns Over Flint Water Crisis (West Bloomfield Patch)
MDEQ Director Wyant resigns over Flint water crisis, Snyder apologizes (Michigan Radio)
Letter says the state department is at fault in Flint Water Crisis (WLNS News 6)

Snyder apologizes, Wyant resigns in Flint water crisis (Detroit Free Press)

Paul Egan, Detroit Free Press9:07 p.m. EST December 29, 2015

http://www.freep.com/story/news/local/michigan/2015/12/29/deq-director-wyant-resigns-over-flint-water-crisis/78027052/

LANSING — Gov. Rick Snyder apologized to the City of Flint on Tuesday for the drinking water crisis that has left children poisoned by lead and announced that he accepted the resignation of Michigan Department of Environmental Quality Director Dan Wyant.

Snyder said in a news release that there will be other personnel changes at the DEQ and that the moves he announced are among "initial steps" he is taking to assure the safety of Flint residents, with more action to come.

“I want the Flint community to know how very sorry I am that this has happened," Snyder said. "And I want all Michigan citizens to know that we will learn from this experience, because Flint is not the only city that has an aging infrastructure."

The governor, who previously stood by his DEQ director amid the controversy, said, "Dan Wyant has offered his resignation, and I’ve determined that it’s appropriate to accept it."

Before joining the Snyder administration as DEQ director, Wyant was president and chief operating officer of the Edward Lowe Foundation, which promotes entrepreneurship and helps business owners grow their companies. Before that, he served as director of the Michigan Department of Agriculture under Govs. John Engler and Jennifer Granholm.

Brad Wurfel, the DEQ public information officer who apologized after criticizing a researcher's reports of rising lead levels in the blood of Flint children as irresponsible, also resigned Tuesday, a spokesman for Snyder confirmed.

The governor said he acted based on interim findings of the Flint Water Advisory Task Force, which he appointed Oct. 21 to investigate the crisis and is continuing its work. He received a letter Tuesday morning that was highly critical of the DEQ.

The letter from the task force said the "primary responsibility" for what happened in Flint lies with the DEQ; the agency "failed in its responsibility" to ensure safe drinking water for Michigan residents and "must be held accountable for that failure." It was signed by task force members Matt Davis, Chris Kolb, Larry Reynolds, Eric Rothstein and Ken Sikkema.

The Free Press reported Thursday that records obtained by the Michigan ACLU and Virginia Tech researcher Marc Edwards show that elevated lead levels in Flint's drinking water would have spurred action months sooner if the results of city testing that wrapped up in June had not been revised by the DEQ to wrongly indicate the water was safe to drink.

Auditor General Doug Ringler said in a letter released Monday that it was appropriate for the DEQ to disqualify two samples with high lead levels that did not meet the sampling criteria. But the records obtained by the ACLU and Edwards also show that a DEQ official sent Flint an e-mail saying that samples as of late June showed Flint's water had lead levels above the "action level" that would require public notice and remedial action, and he hoped the city could send the remaining required samples quickly and that they would be below the action level for lead.

The records also suggest the DEQ was not as strict in disqualifying samples with low lead levels that did not meet the testing criteria as it was in disqualifying samples with high lead readings.

'It's ... not enough'

Flint, which was under the control of a state-appointed emergency manager at the time of the cost-cutting move, switched its drinking water source, starting in April 2014, from Lake Huron water supplied by Detroit to the much more polluted and corrosive water from the Flint River.

The state has acknowledged that it misinterpreted a federal rule and failed to require Flint to add needed corrosion-control chemicals that would have prevented lead from leaching into the drinking water from pipes, connections and fixtures.

That change in the drinking-water source brought immediate complaints from Flint residents about the taste, smell and appearance of the water. The lead tests of the water could have spurred action in July, but it was not until October — after blood test results analyzed by Hurley Children's Hospital pediatrician Dr. Mona Hanna-Attisha showed elevated lead levels in Flint children — that the DEQ admitted making a mistake by failing to require the addition of corrosion-control chemicals to the Flint River water. The state also then provided funds to help Flint reconnect to Lake Huron water supplied by Detroit.

Lead can cause irreversible brain damage in children and has also been linked to behavioral problems.

Melissa Mays, a Flint resident who drank the contaminated water along with her three boys, said she was more shocked by Snyder's apology than by Wyant's resignation. She welcomed the announcements but said more DEQ officials need to be removed because Flint residents can't trust those officials to make sure their water is safe to drink today.

"This all should have happened a long time ago, and it's also not enough," she said.

Mays questioned why Snyder has not endorsed Flint Mayor Karen Weaver's declaration of a state of emergency in Flint, which she said would help secure federal funding to help rectify problems.

Snyder spokesman Dave Murray said "no formal request has been made to the state" to declare a state of emergency in Flint.

"We are committed to working with Mayor Weaver and Genesee County leaders," and the emergency management division of the Michigan State Police is working with city and county officials on potential avenues for federal aid, Murray said.

The crisis has prompted a federal class-action and calls for an investigation by the U.S. Department of Justice.

Goals: Openness, trust

Snyder said "changes in leadership and staff are not enough. I understand there can be disagreements within the scientific community. That is why I have directed both the departments of Environmental Quality and Health and Human Services to invite every external scientist who has worked on this issue to be our partners in helping us improve Flint water."

Snyder said he wants to "share research on water and blood-lead level testing so we can arrive at accurate and mutually supported conclusions. Together, we should work to affirm that we're using the very best testing protocols to ensure Flint residents have safe drinking water and that we're taking steps to protect their health over the short and long term."

The other personnel changes at DEQ referenced by Snyder, aside from Wurfel's resignation, have not yet been made, Murray said.

“I know many Flint citizens are angry and want more than an apology," Snyder said. "That’s why I’m taking the actions today to ensure a culture of openness and trust. We’ve already allocated $10 million to test the water, distribute water filters, and help in other ways. Last week, I called Flint Mayor Karen Weaver, and we’re going to meet soon to discuss other ways the state can offer assistance.

“These are only initial steps - we fully expect to take more actions following the recommendations of our task force. When it comes to matters of health and quality of life, we’re committed to doing everything we can to protect the well-being of our citizens.”

The letter from the task force said a minimalist culture of "technical compliance" had developed in the DEQ's Office of Drinking Water and Municipal Assistance and "it led to MDEQ's failure to recognize a number of indications that switching the water source in Flint would — and did — compromise both water safety and water quality."

The office "must adopt a posture that is driven not by this minimalist technical compliance approach, but rather by one that is founded on what needs to be done to assure drinking water safety," the letter said.

The letter also said that both the tone and substance of DEQ statements to the public during the crisis were "completely unacceptable," marked by a "persistent tone of scorn and derision."

Task force members met with Wyant, and while he agreed with many of the task force's interim conclusions, "it was disappointing to hear his weak defense of the (corrosion control) decision," the letter said.

Senate Minority Leader Jim Ananich, D-Flint, said the personnel changes Snyder announced could be a sign of progress if they "lead to a more aggressive response and resources to improve public health."

"I still believe that legislative hearings will be required to get all the answers and help shape the necessary policy changes, and ensure this never happens again," Ananich said in a news release.

"Dan Wyant gets to walk away from this crisis, but the people of Flint do not," said Lonnie Scott, the group's executive director. "There's a lot we don't know about this man-made catastrophe. What did Gov. Snyder know and when did he know it? We need complete transparency so that justice for the families of Flint can be realized and the proper people can be held accountable."

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Flint water report prompts apologies, resignations (Detroit News)

Jim Lynch The Detroit News9:13 a.m. EST December 30, 2015
http://www.detroitnews.com/story/news/politics/2015/12/29/deq-director-wyant-resigns-due-flint-water-crisis/78028616/

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(Photo: Dale G. Young / The Detroit News)

Michigan's top environmental official resigned Tuesday after an independent task force delivered its initial findings on the Flint water contamination crisis — conclusions that also prompted an apology from Gov. Rick Snyder.

Dan Wyant, director of the Department of Environmental Quality since 2011, tendered his resignation Tuesday, marking the second agency shakeup in just over two months related to Flint's lead-tainted drinking water problems. The industrial city has been plagued by lead issues since an April 2014 switch to the Flint River as its water source.

A Snyder-appointed task force investigating the long-running situation announced it found Tuesday the DEQ "primarily responsible for failing to ensure safe drinking water in Flint." Snyder accepted the initial findings and Wyant's resignation — "I've determined that it's appropriate to accept it, he said — and then issued an apology.

"I want the Flint community to know how very sorry I am that this has happened," Snyder said in a press release. "And I want all Michigan citizens to know that we will learn from this experience, because Flint is not the only city that has an aging infrastructure."

"I know many Flint citizens are angry and want more than an apology. That's why I'm taking the actions today to ensure a culture of openness and trust."

A Flint Water Advisory Task Force co-chair blamed the DEQ's passive culture for Flint's water ills.

"Flint residents were exposed to toxic levels of lead in their water primarily due to a regulatory culture of passive technical compliance that is simply insufficient to the task of public protection," wrote Ken Sikkema, a former state senator. "We also believe that the dismissive and disrespectful tone of much of the MDEQ's response to public concerns is unacceptable."

The water switch, made while Flint was under the leadership of a Snyder-appointed emergency manager, immediately led to resident complaints about the smell, taste and discoloration of their drinking water. Eventually, researchers found a link between the switch and a rise in lead poisoning among city children.

Lead poisoning can cause learning disabilities and, at high levels, may lead to seizures, coma and death, according to the Centers for Disease Control and Prevention.

Wyant could not be reached for comment Tuesday. In October, Wyant admitted the DEQ erred in its application of the federal Lead and Copper Rule, designed to ensure safe drinking water for residents.

Late on Tuesday, DEQ spokesman Brad Wurfel resigned as well.

Flint was allowed to begin drawing its drinking water from the river without any corrosion controls in place to prevent lead in old plumbing connections from leaching. The task force said the DEQ failed in the regulatory handling of Flint's water problems, the "substance and tone" in the department's response as well as its "interpretation of the Lead and Copper Rule."

State Sen. Jim Ananich, D-Flint, criticized the DEQ culture Tuesday, saying workers were more concerned with following rules than informing the public about potential problems.

"When you have lead in the water, I don't care if you follow the rules or not: You need to notify the public first," Ananich said.

Critics have put increasing pressure on Snyder's administration to answer for the

Flint water decisions in the last two years. Among the harshest critics is Marc Edwards, a Virginia Tech researcher whose water sampling at Flint homes and public record requests have helped keep the spotlight on the state government's actions.

But Edwards said Wyant should not be the one on the chopping block.

"I'm glad that someone is sorry and someone is being held accountable," Edwards said. "But Dan Wyant would not be at the top of my list — or even on the list. I feel strongly he was misled by his staff at every point, and he was put in publicly embarrassing situations by the staff's misinformation."

Dr. Mona Hanna-Attisha, a Hurley Medical Center pediatrician who uncovered lead exposure in city children following the switch, echoed Edwards by saying DEQ staffers' mistakes led to Flint's problems.

"(Wyant) wasn't directly involved," she said. "There are other people, particularly in (the Office of Drinking Water and Municipal Assistance), that need to take some responsibility. ... (Wyant) was a nice person being fed bad information."

In 2013, Flint agreed to create a new regional water authority in an attempt to save money. The city had tried to negotiate lower rates with former provider Detroit Water and Sewerage Department for years, to little avail.

But the Karegondi Water Authority will not be completed until some time next year. In the interim, Flint looked to its river to provide drinking water. That water turned out to be far more corrosive than the Lake Huron water used by the Detroit system. With pressure mounting from troublesome water samples and health studies, Flint reconnected to the Detroit system in October.

Snyder previously was elusive in acknowledging the extent of the state's responsibility for the lead contamination of the city's water when it switched to the more corrosive Flint River in 2014, saying he was awaiting the task force report. On Tuesday, the governor was more contrite.

"We've already allocated $10 million to test the water, distribute water filters, and help in other ways," Snyder said. "Last week, I called Flint Mayor Karen Weaver, and we're going to meet soon to discuss other ways the state can offer assistance."

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Michigan Regulator Resigns Amid Flint's Lead-in-Water Crisis (AP)

By DAVID EGGERT, ASSOCIATED PRESS
LANSING, Mich. — Dec 29, 2015, 7:16 PM ET
http://abcnews.go.com/Politics/wireStory/michigan-official-resigns-amid-flint-water-issue-35996502

Michigan's top environmental regulator resigned Tuesday after elevated levels of lead were found in Flint children during a drinking water crisis that a task force blamed primarily on his agency.

Gov. Rick Snyder accepted the resignation of Department of Environmental Quality Director Dan Wyant and apologized for what occurred in Flint, which switched its drinking water supply in a cost-cutting move while under state financial management. Communications director Brad Wurfel also resigned, and Snyder said he plans additional personnel changes in the agency.

Wyant quit the same day a task force appointed by the Republican governor reported that the department was primarily responsible for the fiasco because it did not require Flint to keep corrosive water from leaching lead from service pipes into residents' homes and belittled concerns from the public. Exposure to lead can cause behavior problems and learning disabilities in children.

"I want the Flint community to know how very sorry I am that this has happened," Snyder said in a written statement. "And I want all Michigan citizens to know that we will learn from this experience, because Flint is not the only city that has an aging infrastructure."

The five-member task force, which previously brought up concerns about a lack of organization in responding to the disaster, said the environmental department's Office of Drinking Water and Municipal Assistance has a "minimalist approach" to regulatory oversight in which "technical compliance" is sufficient. It faulted the agency for a "tone of scorn and derision" toward the public, including outside water and health experts who raised alarm bells.

The task force confirmed that the state did not follow the federal Lead and Copper Rule when Flint disconnected from Detroit's water system in April 2014 and switched to Flint River water while waiting to connect to a new regional water authority.

Detroit's water from Lake Huron had been treated for corrosion. State officials thought that after Flint made the transition to the river it could test the new water for lead over two six-month intervals to determine potential corrosion treatment instead of needing to immediately add corrosion controls. Flint returned to Detroit's water in October after a public health emergency was declared.

The task force, which met with Wyant on Dec. 16, noted his substantial agreement with many of its conclusions but expressed disappointment with his "weak defense" regarding the federal rule.

The U.S. Environmental Protection Agency said in a November memo that there are "differing possible interpretations" of the Lead and Copper Rule, explaining that it does not explicitly discuss a scenario like in Flint.

But task force members said, "Individuals and agencies responsible must be held accountable in a timely fashion."

They also cited recent revelations of the Department of Health and Human Services' apparent early knowledge of and silence about elevated blood-lead levels, and said the committee's final report in early 2016 would review local governments' decision processes while under emergency management.

"I know many Flint citizens are angry and want more than an apology. That's why I'm taking the actions today to ensure a culture of openness and trust," Snyder said.

Wyant, 56, led the Environmental Quality Department for nearly five years. He previously served as the state's agricultural director under Republican Gov. John Engler and Democratic Gov. Jennifer Granholm.

"If these personnel moves and change in tone lead to a more aggressive response and resources to improve public health, then we are finally making progress," said Senate Minority Leader Jim Ananich, a Democrat from Flint.

Follow David Eggert at http://twitter.com/DavidEggert00 . His work can be found at http://bigstory.ap.org/author/david-eggert

Task force lays most blame for Flint water crisis on MDEQ (Michigan Radio)
By VINCENT DUFFY • 14 HOURS AGO
SHARETwitter Facebook Google+ Email
http://michiganradio.org/post/task-force-lays-most-blame-flint-water-crisis-mdeq#stream/0
MDEQ Director Dan Wyant at a recent press conference.
CREDIT SCREEN GRAB / MLIVE USTREAM
A task force appointed by Gov. Rick Snyder says Michigan's environmental regulatory agency is primarily responsible for the state's failure to ensure safe drinking water for Flint residents.

The Flint Water Advisory Task Force says in a letter to Snyder that the state Department of Environmental Quality "must be held accountable for that failure."

The letter was made public Tuesday. You can read it here.

Corrosive Flint River water leached lead from service pipes into homes after the city switched last year from Detroit water. Elevated blood-lead levels later were found in some children.

Department of Environmental Quality Director Dan Wyant and spokesman Brad Wurfel both resigned Tuesday.

Task force co-chair Ken Sikkema says in the letter that "Flint residents were exposed to toxic levels of lead in their water primarily due to a regulatory culture of passive technical compliance."

The FWATF letter stated in part:

“We believe the primary responsibility for what happened in Flint rests with the Michigan Department of Environmental Quality (MDEQ). Although many individuals and entities at state and local levels contributed to creating and prolonging the problem, MDEQ is the government agency that has responsibility to ensure safe drinking water in Michigan. It failed in that responsibility and must be held accountable for that failure.”

“The City of Flint’s water customers—fellow Michigan citizens—were needlessly and tragically exposed to toxic levels of lead through their drinking water supply. They deserve a commitment to properly assess responsibility and ensure accountability. They also deserve a commitment to needed mitigation in both the short and long term. The Flint water crisis never should have happened. Having failed to prevent it, state government should coordinate a sustained, public-health-focused response to remedy, to the fullest extent possible, the impacts on the Flint community.”

The letter outlined three areas where MDEQ failed:

Regulatory Failure
Failure in Substance and Tone of MDEQ Response to the Public
Failure in MDEQ Interpretation of the Lead and Copper Rule
This is the second letter sent by the Task Force. The first, sent earlier this month, made several recommendations concerning coordination of state efforts that were supported and implemented by Governor Snyder.

The full FWATF report is expected to be completed in early 2016.

Members of the Task Force include:

Matthew Davis, M.D., M.A.P.P., is professor of pediatrics and internal medicine at the University of Michigan Health System and professor of public policy at the Gerald R. Ford School at the University of Michigan.

Chris Kolb is president of the Michigan Environmental Council.

Lawrence Reynolds, M.D., is a pediatrician in Flint who serves as president of the Mott Children's Health Center.

Eric Rothstein is a national water issues consultant and principal at the Galardi Rothstein Group. He served as an independent advisor on the creation of the Great Lakes Water Authority.

Ken Sikkema is a senior policy fellow at Public Sector Consultants. (Full Disclosure - he is also a regular commenter on Michigan Radio.)

The FWATF was formed by Governor Snyder to review actions regarding the Flint water system and offer recommendations both for Flint and Michigan to protect the health and safety of state residents.

Flint water scandal: Snyder apologizes, DEQ director resigns (Fox 2 Detroit)

Gov. Rick Snyder announced changes at the Michigan DEQ.
http://www.fox2detroit.com/news/local-news/66000998-story

POSTED:DEC 29 2015 10:25PM EST
UPDATED:DEC 29 2015 11:24PM EST
FLINT, Mich. - Gov. Rick Snyder says he's sorry for Flint's water crisis as one of his top appointees resigns.
The director of the state's department of environmental quality Dan Wyant resigned.

Wyant was in charge of keeping the water safe. When Flint switched its drinking water source from Lake Huron water supplied by detroit...to the flint river - to save money -- corrosion flowed through the pipes.

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Tests showed elevated levels of lead in the city's drinking water back in June. But the state didn't take action until October after blood testing showed high lead levels in Flint's children.

Flint water scandal: Snyder apologizes, DEQ director resigns

Snyder's office issued a press release Tuesday:

"I want the Flint community to know how very sorry I am that this has happened," he said. "And I want all Michigan citizens to know that we will learn from this experience, because Flint is not the only city that has an aging infrastructure.

"When I became aware that the city of Flint's water showed elevated lead levels and that the state's handling of the situation was being questioned," he said. "I requested funding to switch the source back to the Great Lakes Water Authority and appointed an independent task force to identify possible missteps and areas for improvement.

"The task force has done an exceptional job, reviewing stacks of documents and interviewing scores of Flint, Genesee County, state and federal officials ... We'll continue to work with the community members to make sure we hear and respond to their concerns.

"MDEQ Director Dan Wyant has offered his resignation, and I've determined that it's appropriate to accept it. I'm also making other personnel changes at MDEQ to address problems cited by the task force."

In a previous FOX 2 report it was discovered a year after the city began using the Flint River as its water source; a local hospital's study found the number of Flint kids under the age of 5 years old with above average lead levels nearly doubled city-wide and in some cases, tripled.

Virginia Tech University tested resident Ronda Thornton's water. Anything more than 30 micrograms a liter is a sign of serious lead contamination. Hers registered 138.

"I know many Flint citizens are angry and want more than an apology," Snyder said. "That's why I'm taking the actions today to ensure a culture of openness and trust. We've already allocated $10 million to test the water, distribute water filters, and help in other ways. Last week, I called Flint Mayor Karen Weaver, and we're going to meet soon to discuss other ways the state can offer assistance."

"But changes in leadership and staff are not enough. I understand there can be disagreements within the scientific community. That is why I have directed both the departments of Environmental Quality and Health and Human Services to invite every external scientist who has worked on this issue to be our partners in helping us improve Flint water. Let's share research on water and blood lead level testing so we can arrive at accurate and mutually supported conclusions. Together, we should work to affirm that we're using the very best testing protocols to ensure Flint residents have safe drinking water and that we're taking steps to protect their health over the short and long term."

"These are only initial steps - we fully expect to take more actions following the recommendations of our task force. When it comes to matters of health and quality of life, we're committed to doing everything we can to protect the well-being of our citizens."

Flint leaders applaud DEQ director's resignation, governor's apology (MLive.com)
http://www.mlive.com/news/flint/index.ssf/2015/12/gov_rick_snyder_accepts_mdeq_h.html
By Jiquanda Johnson | jjohns16@mlive.com
Follow on Twitter
on December 29, 2015 at 6:41 PM, updated December 29, 2015 at 8:44 PM
DEQ spokesman also resigns over Flint water crisis, says city 'didn't feel like we cared'
Flint leaders applaud DEQ director's resignation, governor's apology
Congressman Dan Kildee will again discuss Flint water on 'The Rachel Maddow Show'
Gov. Rick Snyder still doesn't get it when it comes to Flint water crisis
Director Dan Wyant resigns after task force blasts MDEQ over Flint water crisis
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FLINT, MI – Mayor Karen Weaver and other local leaders say the resignation of Michigan Department of Environmental Quality Director Dan Wyant and release of Flint Water Task Force findings Tuesday are the first steps toward holding people accountable for Flint's water crisis.
"There is some accountability being put in place and that's a good thing," Weaver said. "That's what is happening and I think that's a good sign because it shows that our voices have been heard and that they will continue to be heard."
According to a statement issued by Gov. Rick Snyder on Dec. 29, he has accepted Wyant's resignation after findings from a report by the task force, which was created by Snyder in October to look into Flint's water crisis. In the same statement, Snyder also said he was "sorry" to the Flint community for the water issues.
"I know many Flint citizens are angry and want more than an apology," Snyder said. "That's why I'm taking the actions today to ensure a culture of openness and trust ... Last week, I called Flint Mayor Karen Weaver, and we're going to meet soon to discuss other ways the state can offer assistance."
Weaver confirmed that she will be meeting with Snyder after the first of the year.
"I hope this will help move Flint forward," she said. "One thing that has been an issue for us here in Flint has been that broken trust. We will have a new person that we will be working with, and that's a positive step."
The task force report, which is preliminary, revealed that the MDEQ failed the city in multiple areas including regulatory failures, substance and tone of the MDEQ's response to public and the interpretation of the federal lead and copper rule.
"We believe the primary responsibility for what happened in Flint rests with the Michigan Department of Environmental Quality (MDEQ)," said the preliminary report. "Although many individuals and entities at state and local levels contributed to creating a prolonging problem, MDEQ is the government agency that has responsibility to ensure safe drinking water in Michigan. It failed in that responsibility and must be held accountable."
State Rep. Sheldon Neeley, D-Flint, said that he and others in the city have called for legislative hearings regarding the water crisis and that Wyant's departure is just

the first, not the only, person held responsible for the condition of Flint's water.
"For months, the call has been public and aggressive for Dan Wyant to remove himself from his position, or have Gov. Rick Snyder do the deed for him," Neeley said in a statement issued Dec. 29. "There are many culpable parties involved in the continued decline of health and safety during the water crisis in the city of Flint, and Wyant was just one figure in a menagerie of offenders."
Neeley, who along with Sen. Jim Ananich, D-Flint, have been pushing for legislative hearings on Flint's water crisis, went on to say there is still "cleanup do be done" and he is "glad" that Wyant has stepped down in what Neeley considers a "disorganized and flawed DEQ."
The task force's report also says members spoke with Wyant on Dec. 16 and they were not pleased with how he responded to the city's water crisis and he was in agreement with some of their findings.
"It is our understanding that he has drawn similar conclusions in his own evaluation of MDEQ's role in the Flint water crisis," said the report. "At the same time, it was disappointing to hear his weak defense of the CCT (corrosion control treatment) decision based on the EPA's November 2015 memorandum."
Both Ananich and Neeley's push led to an independent review by the Office of State Auditor Genera,l which made it clear in a Dec. 23 letter that corrosion control should have been maintained during Flint's transition from Detroit water to Flint River water. The review was based on a series of questions sent to the auditor from Ananich in October.
The corrosiveness of Flint River water is blamed for lead that leached from pipes into drinking water, causing elevated levels of lead in the blood of Flint children.
"I think the best apology (Snyder) can offer the residents of Flint and the rest of the state is a promise that this will never happen again," Ananich said. "The proof is in the long-term commitment. I'm going to continue to work to make sure that we get that."

Michigan Gov. Rick Snyder apologizes for lead levels in Flint water (Detroit 4)
DEQ head Dan Wyant's resigns after task force blames department for crisis

By Jason Colthorp – Reporter
http://www.clickondetroit.com/news/michigan-official-resigns-amid-flint-water-issue
LANSING, Mich. - Gov. Rick Snyder issued an apology Tuesday as Dan Wyant, his head of the Department of Environmental Quality, resigned after a task force lead by the state's auditor general blasted the DEQ for it's role in Flint's water crisis.

The state’s mishandling of Flint’s water system ultimately exposed Flint residents to dangerously elevated levels of lead.

“I want the Flint community to know how very sorry I am that this has happened,” Snyder said in a statement. “And I want all Michigan citizens to know that we will learn from this experience.”

The governor’s apology and the DEQ head’s resignation has helped to temper concerns that no one cared about Flint said the city’s mayor Karen Weaver.

“One of the things we've always talked about is accountability and that seems to be what's happening,” said Weaver. “It also let us know here in Flint that our voice is being heard.”

Snyder’s apology and Wyant’s resignation come after the task force released their finding that the DEQ was primarily at fault for Flint’s unhealthy level of lead in their drinking water.

“Although many contributed to creating and prolonging the problem, MDEQ is the government agency that has responsibility to ensure safe drinking water in Michigan,” the task force said in a written statement. “It failed in that responsibility.”

For many Flint residents like Kim Peterson, Tuesday’s announcements do little to help them feel confident about the safety of their drinking water. Peterson says she is still hesitant to drink the water even though it is again coming from a healthy source in Lake Huron.

“I take it to mean that something was really wrong with this whole system of checks and balances,” she said.

“You don't trust it because you've heard so many conflicting things from so many different people, so we still continue to buy the water.”

Mayor Weaver, however, believes Snyder’s apology is a first step toward rebuilding trust: “This is a good step to get some things started because people had lost faith and they had lost trust.”

Snyder has promised more steps will be taken after the task force releases its final and full report.

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Director Dan Wyant resigns after task force blasts MDEQ over Flint water crisis (MLive.com)
http://www.mlive.com/lansing-news/index.ssf/2015/12/deq_director_dan_wyant_resigns.html
Michigan Department of Environmental Quality Director Dan Wyant speaks during a news conference in Flint on Oct. 2, 2015. (Danny Miller | MLive.com)
PrintEmail
By Emily Lawler | elawler@mlive.com
on December 29, 2015 at 4:39 PM, updated December 29, 2015 at 6:51 PM
LANSING, MI -- Gov. Rick Snyder on Tuesday accepted a resignation from Michigan Department of Environmental Quality Director Dan Wyant after a task force laid responsibility for the Flint water crisis at the feet of the department.
Snyder, in a statement, announced Wyant's resignation and apologized to Flint residents after he received a letter from the Flint Water Advisory Task Force.

"...MDEQ Director Dan Wyant has offered his resignation, and I've determined that it's appropriate to accept it. I'm also making other personnel changes at MDEQ to address problems cited by the task force," Snyder said.

Wyant and the DEQ have come under fire in recent months for handling a Flint drinking water crisis that lead to corrosive water running through city pipes and resulted in children with elevated levels of lead. In October, Wyant acknowledgeda mistake in oversight from his office, saying DEQ officials were confused about federal regulations on making the drinking water less corrosive.

The task force in its letter blamed the department for the crisis.

"We believe the primary responsibility for what happened in Flint rests with the Michigan Department of Environmental Quality (MDEQ)," read the letter to Snyder.

"Although many individuals and entities at state and local levels contributed to creating and prolonging the problem, MDEQ is the government agency that has responsibility to ensure safe drinking water in Michigan. It failed in that responsibility and must be held accountable for that failure."

The task force cited DEQ's involvement as regulatory failure, failure in substance and tone of response to the public and a failure of interpreting the lead and copper rule.

Gov. Rick Snyder recently named the Flint water crisis as his biggest disappointment in 2015.

Wyant had a long track record of service for the state. He served as director of the Michigan Department of Agriculture under both Democratic Gov. Jennifer Granholm and Republican Gov. John Engler before Gov. Rick Snyder tapped him to head up the DEQ in 2011.

He shepherded the department through a transition into being its own entity again after Gov. Jennifer Granholm had combined it with the Department of Natural Resources, forming the Department of Natural Resources and Environment. He also led the "quality of life group" within state government, meaning he coordinated efforts between the DNR, DEQ and Department of Agriculture and Rural Development.

The statement from Snyder alluded to other structural changes within the DEQ, and spokesperson Dave Murray said those decisions would be made in the coming days. DEQ spokesperson Brad Wurfel did not immediately return a call for comment.

Wyant's resignation met with mixed reaction from political groups and leaders.

Senate Minority Leader Jim Ananich (D-Flint) released the following statement:

"If these personnel moves and change in tone lead to a more aggressive response and resources to improve public health, then we are finally making progress. I still believe that legislative hearings will be required to get all the answers and help shape the necessary policy changes, and ensure this never happens again."

Attorney General Bill Schuette praised Wyant's service to the state.

"I am saddened to hear of the resignation of Department of Environment Quality Director Dan Wyant. In my 20-plus years of knowing him, Dan has been a hardworking, dedicated public servant. I am committed to working with all parties, including the legislature and Governor, to ensure the public's health and the well being of Michigan residents."

Democratic Congressman Dan Kildee, who represents Flint, said the steps taken today were appropriate but encouraged further action.

"Governor Snyder's apology over the Flint water crisis is appropriate, as are personnel changes announced today at the Department of Environmental Quality," Kildee said.

"Through this ongoing crisis, the people of Flint did nothing wrong – they are victims of this failure of government. The State of Michigan must not only acknowledge its role in this crisis, but also take responsibility and act right away to make it right."

He urged the state to establish a fund to ensure that kids receive developmental, nutritional and educational resources to help overcome the effects of their lead exposure.

Rep. Sheldon Neeley, D-Flint, said Wyant was not the only offender.

"For months, the call has been public and aggressive for Dan Wyant to remove himself from his position, or to have Gov. Rick Snyder do the deed for him. There are many culpable parties involved in the continued decline of health and safety during the water crisis in the city of Flint, and Wyant was just one figure in a menagerie of offenders," Neeley said.

"While there is still much cleanup to be done, I am glad Mr. Wyant realized he could no longer continue as the head of the disorganized and flawed DEQ, and I call on Gov. Snyder to take careful effort in repairing this department so that it earns back the trust of the people of Flint and this great state.

Progress Michigan said there had been a lack of accountability for the Flint water crisis.

"So far under Gov. Rick Snyder's watch, there has been zero accountability in this crisis and that continues today," said Lonnie Scott, executive director of Progress Michigan.

"Dan Wyant gets to walk away from this criss, but the people of Flint do not. There's a lot we don't know about this man-made catastrophe. What did Gov. Snyder know and when did he know it? We need complete transparency so that justice for the families of Flint can be realized and the proper people can be held accountable. All documentation related this this crisis needs to be released to the public immediately."

Emily Lawler is a Capitol/Business reporter for MLive. You can reach her atelawler@mlive.com, subscribe to her on Facebook or follow her on Twitter:@emilyjanelawler.

Auditor: State erred on Flint water but didn't mislead feds (AP/Crain's Detroit)

http://www.crainsdetroit.com/article/20151228/NEWS01/151229867/auditor-state-erred-on-flint-water-but-didnt-mislead-feds By David Eggert

Associated Press

Michigan Department of Environmental Quality Environment More +

LANSING — The director of Michigan's Department of Environmental Quality has resigned after the Flint Water Task Force delivered its findings on the the city's water contamination crisis to Gov. Rick Snyder.

Snyder said Tuesday afternoon in a statement that he accepted the resignation of Dan Wyant and plans to make "other personnel changes at MDEQ to address problems cited by the task force.

“But changes in leadership and staff are not enough."

In a preliminary report released Monday, Michigan's auditor general said state regulators should have required Flint to treat its corrosive drinking water to keep lead from leaching from service lines into people's homes but did not purposely mislead federal officials about the lack of corrosion control.

Doug Ringler, citing a memo issued last month by the U.S. Environmental Protection Agency, concluded that the Michigan Department of Environmental Quality erred in not requiring the city to immediately combat corrosion when it switched from Detroit's system to the Flint River in April 2014 in a cost-cutting move while under state financial management. State officials interpreted federal rules to mean Flint could make the transition and then test the new water for lead over two six-month intervals to determine potential corrosion treatment.

Flint children have been found to have elevated levels of lead in their blood since the water change. Gov. Rick Snyder's administration initially downplayed concerns but later committed funding to reconnect Flint to Detroit and to provide filters, testing and other services.

Ringler was already conducting an audit of Michigan's Office of Drinking Water and Municipal Assistance when the Flint corrosion issue arose. At the request of Senate Minority Leader Jim Ananich, he answered questions specific to Flint's lead contamination, including concerns that state regulators misled federal environmental regulators.

In February, a DEQ water supervisor told the EPA that Flint had a corrosion control program in place. But in April, an EPA official confirmed through another DEQ official that the city was not practicing corrosion treatment, according to emails. The EPA apparently interpreted the word "program" to mean treatment, while the DEQ meant it as testing to determine if corrosion controls would be needed in the future.

"Based on our review of this and other emails, we have no specific reason to believe that DEQ willfully misrepresented the information to the EPA," Ringler wrote in a letter dated Wednesday and made public Monday.

The auditor concluded, however, that regardless of confusion over the federal rule, the state should have required Flint to start pursuing corrosion treatment in March after the first six months of testing showed too-high lead levels instead of waiting until August after a second six-month period. He also said the DEQ did not verify that Flint was correctly sampling water from houses only with lead pipes or lead service lines. He suggested that the department consider doing so.

"We agreed with the findings in the Auditor General's review," DEQ spokesman Brad Wurfel said. "The findings align with our internal department review. We appreciate the Auditor General's work to provide a fair and well considered look at some key issues."

The Republican governor has come under scrutiny for the Flint fiasco. Spokesman Dave Murray said the letter "includes some criticisms, but also reflects that state officials were following accepted protocols, or in one case, an interpretation of the corrosion control program that the EPA later clarified. But we need to do better in ensuring Flint residents have safe water and tracking children affected by elevated lead levels."

Ananich, D-Flint, said "there are serious failings in our system that must be addressed" and again called for GOP leaders to schedule legislative hearings. They

have rejected the requests, citing the work of a task force formed by Snyder.
The auditor's letter did not provide clarity on who specifically decided to use the Flint River for water. It was supposed to be an interim source until the city could join a new system getting water from Lake Huron.
Ringler noted that the city council voted in March 2013 to support moving to the Karegnondi Water Authority but was "silent" on using the river temporarily. Flint was being run by a Snyder-appointed manager until this past April and remains under some state oversight.

BREAKING: DEQ Director Resigns Over Flint Water Crisis (West Bloomfield Patch)
Gov. Rick Snyder apologizes to Flint, pledges to help officials address public health crisis surrounding dangerous lead levels in water.
http://patch.com/michigan/westbloomfield/breaking-deq-director-resigns-over-flint-water-crisis
West Bloomfield, MI

By BETH DALBEY (Patch Staff) December 29, 2015

LANSING, MI – The director of the Michigan Department of Environmental Quality has resigned over the Flint water debacle, Gov. Rick Snyder said Tuesday.
DEQ Director Dan Wyant "has offered his resignation, and I've determined that it's appropriate to accept it," Snyder said in a statement.

The governor said he will be "making other personnel changes at MDEQ" as well.

State officials encouraged officials in Flint, where the mayor has asked for federal emergency reliefto deal with a public health crisis resulting from high lead levels in water, to understate the results, according to e-mails obtained by the American Civil Liberties Union of Michigan and Marc Edwards, a Virginia Tech researcher who helped bring the water crisis to the forefront.

After the testing revealed dangerous lead levels in June, the Michigan Department of Environmental Quality wrongly indicated the water was safe to drink, according to the e-mails.

Related

Erin Brockovich Keeping an Eye on Flint's 'Poop Water'
Pediatrician Exposed Crisis of Lead in Flint Water
State Delayed Action on Lead in Flint Water
The financially struggling city of Flint turned off the taps to water from Detroit, which gets its supply from Lake Huron, and switched to water from the Flint River in a money-saving move in 2014. Flint was under the control of a state-appointed emergency manager at the time.

The e-mail trail suggests state officials were aware of the impending water crisis well ahead of a study released in September by West Bloomfield pediatrician Dr. Mona Hanna-Attisha, pediatric residency director at Flint's Hurley Children's Hospital.

More from West Bloomfield Patch
10 Amazon Deals On Accessories For Your New Smartphone
Michigan State Has 'Unfinished Business' in Cotton Bowl: Watch
Penguins! See Detroit Zoo's Newest Residents: Watch
Opioid Addicts Younger Than Ever: Study

The study showed the proportion of children with above-average levels of lead in their blood had nearly doubled since the city began getting its water from the Flint River.
The consequences of lead poisoning are serious and long lasting.

Lead's trail is virtually invisible, discoverable only through finger-prick blood test or when children begin showing signs of learning disabilities, reduced IQ, behavioral changes, anti-social behavior, anemia, hypertension, renal impairment, immunotoxicity and a plethora of other neurological and behavioral problems that are thought to be irreversible, according to theWorld Health Organization.

The e-mails showed that DEQ district coordinator Stephen Busch told the U.S. Environmental Protection Agency in February that Flint had "an optimized corrosion control program" to prevent lead from getting into the water system when, in fact, the city had no corrosion control program at all.

In his statement, the governor apologized to the residents of Flint and to residents of other cities with aging infrastructure.

"I want the Flint community to know how very sorry I am that this has happened. And I want all Michigan citizens to know that we will learn from this experience, because Flint is not the only city that has an aging infrastructure," he wrote.

Changes in leadership and staff aren't enough, Snyder said. The statement continued:

"I understand there can be disagreements within the scientific community. That is why I have directed both the departments of Environmental Quality and Health and Human Services to invite every external scientist who has worked on this issue to be our partners in helping us improve Flint water.

"Let's share research on water and blood lead level testing so we can arrive at accurate and mutually supported conclusions," he wrote. "Together, we should work to affirm that we're using the very best testing protocols to ensure Flint residents have safe drinking water and that we're taking steps to protect their health over the short and long term.

“I know many Flint citizens are angry and want more than an apology. That’s why I’m taking the actions today to ensure a culture of openness and trust. We’ve already allocated $10 million to test the water, distribute water filters, and help in other ways. Last week, I called Flint Mayor Karen Weaver, and we’re going to meet soon to discuss other ways the state can offer assistance.

“These are only initial steps — we fully expect to take more actions following the recommendations of our task force. When it comes to matters of health and quality of life, we’re committed to doing everything we can to protect the well-being of our citizens.”

MDEQ Director Wyant resigns over Flint water crisis, Snyder apologizes (Michigan Radio)
http://michiganradio.org/post/mdeq-director-wyant-resigns-over-flint-water-crisis-snyder-apologizes#stream/0
By JAKE NEHER • 16 HOURS AGO
SHARETwitter Facebook Google+ Email
Former MDEQ director Dan Wyant
CREDIT STEVE CARMODY / MICHIGAN RADIO
UPDATED AT 5:37 PM ON 12/29/15

The head of the Michigan Department of Environmental Quality (MDEQ) has resigned over the drinking water crisis in Flint.

Gov. Rick Snyder has also now apologized to the community of Flint for his administration’s involvement in the situation.

“I want the Flint community to know how very sorry I am that this has happened,” said Snyder in a statement on Tuesday. “And I want all Michigan citizens to know that we will learn from this experience, because Flint is not the only city that has an aging infrastructure.”

“I know many Flint citizens are angry and want more than an apology. That’s why I’m taking the actions today to ensure a culture of openness and trust.”

MDEQ Director Dan Wyant will step down immediately. The resignation comes after Snyder received initial findings from the task force he appointed to investigate the situation. A number of reports have pointed to mistakes the department made that resulted in elevated lead levels in the city’s water.

The governor says he plans to make additional personnel changes in the department – although he hasn’t announced what those will be. And he says he’ll meet with Flint Mayer Karen Weaver to discuss further actions the state could take to help the city.

Also resigning from the MDEQ today was spokesman Brad Wurfel.

Letter says the state department is at fault in Flint Water Crisis (WLNS News 6)
http://wlns.com/2015/12/30/letter-says-the-state-department-is-at-fault-in-flint-water-crisis/
6 News StaffPublished: December 30, 2015, 6:11 am
Photo: MLive
LANSING, MI. (WLNS) – At the state capital, a letter sent to Governor Snyder from his Flint Water Crisis task force says there's a state department to blame for the city's water problems.

In the letter the task force says the Department of Environmental Quality must be held accountable for failing to ensure the safe drinking water for people of Flint.

It says Flint residents were exposed to toxic levels of lead in their water because of a culture of passive compliance.

In addition to the letter, Dan Wyant stepped down as director of the department

###

To: Purchia, Liz[Purchia.Liz@epa.gov]
Cc: Meiburg, Stan[Meiburg.Stan@epa.gov]; Grantham, Nancy[Grantham.Nancy@epa.gov]; Kaplan, Robert[kaplan.robert@epa.gov]
From: Hedman, Susan
Sent: Wed 12/30/2015 6:50:46 PM
Subject: Re: Flint Water Clips Dec. 30, 2015

OK -- thanks very much.

Sent from my iPhone

On Dec 30, 2015, at 12:23 PM, Purchia, Liz <Purchia.Liz@epa.gov> wrote:

We'll work with your comms staff on this moving forward.

From: Hedman, Susan
Sent: Wednesday, December 30, 2015 11:14 AM
To: Meiburg, Stan <Meiburg.Stan@epa.gov>; Purchia, Liz <Purchia.Liz@epa.gov>; Grantham, Nancy <Grantham.Nancy@epa.gov>
Cc: Kaplan, Robert <kaplan.robert@epa.gov>
Subject: Fwd: Flint Water Clips Dec. 30, 2015

I think we need to reach out to TRMS to correct the repeated references to a "EPA whistleblower/rogue employee" that appear in this segment and previous segments. Our review of EPA actions in Flint show that the so-called whistleblower/rogue employee was acting under the direction of and with the support of EPA management when he tested water at three residences in Flint and prepared a report summarizing his findings. I personally objected to MDEQ management and the Governor's office when they called this R5 staffer a "rogue employee." This misrepresentation is especially problematic in the wake of the House Oversight hearing last summer, which focused on alleged whistleblowers in R5. I don't know if we need to ask for a formal correction, but we should at least ask TRMS to avoid this inaccurate characterization in future segments.

I am happy to talk about this if you would like us to set up a call.

Sent from my iPhone

Begin forwarded message:

From: "Cassell, Peter" <cassell.peter@epa.gov>

Date: December 30, 2015 at 9:06:05 AM CST
To: "Peterson, John" <peterson.john@epa.gov>, "Hedman, Susan" <hedman.susan@epa.gov>, "Kaplan, Robert" <kaplan.robert@epa.gov>, "Hyde, Tinka" <hyde.tinka@epa.gov>
Cc: "Kelley, Jeff" <kelley.jeff@epa.gov>, "Rowan, Anne" <rowan.anne@epa.gov>, "Beckmann, Ronna Erin" <beckmann.ronna@epa.gov>, "Harrison, Melissa" <Harrison.Melissa@epa.gov>, "Abrams, Dan" <Abrams.Dan@epa.gov>, "Poy, Thomas" <poy.thomas@epa.gov>, "Singer, Joshua" <Singer.Joshua@epa.gov>, "Arcaute, Francisco" <Arcaute.Francisco@epa.gov>, "Cannon, Phillippa" <Cannon.Phillippa@epa.gov>, "Deamer, Eileen" <deamer.eileen@epa.gov>, "Fortin, Denise" <Fortin.Denise@epa.gov>, "Nowotarski, Allison" <nowotarski.allison@epa.gov>, "Reshkin, Karen" <Reshkin.Karen@epa.gov>, "Loop, Travis" <Loop.Travis@epa.gov>, "Purchia, Liz" <Purchia.Liz@epa.gov>, "Henry, Timothy" <henry.timothy@epa.gov>, "Lee, Monica" <Lee.Monica@epa.gov>, "Grantham, Nancy" <Grantham.Nancy@epa.gov>, "Davis, CatherineM" <Davis.CatherineM@epa.gov>
Subject: Re: Flint Water Clips Dec. 30, 2015

Congressman Kildee was on the Rachel Maddow show last night. The clip is available at: on.msnbc.com/1krBTbv. Sorry that this wasn't in the rest of the clips.

From: Cassell, Peter
Sent: Wednesday, December 30, 2015 8:42 AM
To: Peterson, John; Hedman, Susan; Kaplan, Robert; Hyde, Tinka
Cc: Kelley, Jeff; Rowan, Anne; Beckmann, Ronna Erin; Harrison, Melissa; Abrams, Dan; Poy, Thomas; Singer, Joshua; Arcaute, Francisco; Cannon, Phillippa; Deamer, Eileen; Fortin, Denise; Nowotarski, Allison; Reshkin, Karen; Loop, Travis; Purchia, Liz; Henry, Timothy; Lee, Monica; Grantham, Nancy; Davis, CatherineM
Subject: Flint Water Clips Dec. 30, 2015

FLINT DRINKING WATER CLIPS
US. EPA REGION 5 – AS PREPARED BY PETER CASSELL (ORA/OEC/PA)
ON DEC. 30, 2015

Snyder apologizes, Wyant resigns in Flint water crisis (Detroit Free Press)
Flint water report prompts apologies, resignations (Detroit News)
Michigan Regulator Resigns Amid Flint's Lead-in-Water Crisis (AP)
Task force lays most blame for Flint water crisis on MDEQ (Michigan Radio)
Flint water scandal: Snyder apologizes, DEQ director resigns (Fox 2 Detroit)
Flint leaders applaud DEQ director's resignation, governor's apology (MLive.com)

Michigan Gov. Rick Snyder apologizes for lead levels in Flint water (Detroit 4)
Director Dan Wyant resigns after task force blasts MDEQ over Flint water crisis (MLive.com)
Auditor: State erred on Flint water but didn't mislead feds (AP/Crain's Detroit)
BREAKING: DEQ Director Resigns Over Flint Water Crisis (West Bloomfield Patch)
MDEQ Director Wyant resigns over Flint water crisis, Snyder apologizes (Michigan Radio)
Letter says the state department is at fault in Flint Water Crisis (WLNS News 6)

Snyder apologizes, Wyant resigns in Flint water crisis (Detroit Free Press)

Paul Egan, Detroit Free Press9:07 p.m. EST December 29, 2015
http://www.freep.com/story/news/local/michigan/2015/12/29/deq-director-wyant-resigns-over-flint-water-crisis/78027052/

LANSING — Gov. Rick Snyder apologized to the City of Flint on Tuesday for the drinking water crisis that has left children poisoned by lead and announced that he accepted the resignation of Michigan Department of Environmental Quality Director Dan Wyant.

Snyder said in a news release that there will be other personnel changes at the DEQ and that the moves he announced are among "initial steps" he is taking to assure the safety of Flint residents, with more action to come.

"I want the Flint community to know how very sorry I am that this has happened," Snyder said. "And I want all Michigan citizens to know that we will learn from this experience, because Flint is not the only city that has an aging infrastructure."

The governor, who previously stood by his DEQ director amid the controversy, said, "Dan Wyant has offered his resignation, and I've determined that it's appropriate to accept it."

Before joining the Snyder administration as DEQ director, Wyant was president and chief operating officer of the Edward Lowe Foundation, which promotes entrepreneurship and helps business owners grow their companies. Before that, he served as director of the Michigan Department of Agriculture under Govs. John Engler and Jennifer Granholm.

Brad Wurfel, the DEQ public information officer who apologized after criticizing a researcher's reports of rising lead levels in the blood of Flint children as irresponsible, also resigned Tuesday, a spokesman for Snyder confirmed.

The governor said he acted based on interim findings of the Flint Water Advisory Task Force, which he appointed Oct. 21 to investigate the crisis and is continuing its work. He received a letter Tuesday morning that was highly critical of the DEQ.

The letter from the task force said the "primary responsibility" for what happened in Flint lies with the DEQ; the agency "failed in its responsibility" to ensure safe drinking water for Michigan residents and "must be held accountable for that failure." It was signed by task force members Matt Davis, Chris Kolb, Larry Reynolds, Eric Rothstein and Ken Sikkema.

The Free Press reported Thursday that records obtained by the Michigan ACLU and Virginia Tech researcher Marc Edwards show that elevated lead levels in Flint's drinking water would have spurred action months sooner if the results of city testing that wrapped up in June had not been revised by the DEQ to wrongly indicate the water was safe to drink.

Auditor General Doug Ringler said in a letter released Monday that it was appropriate for the DEQ to disqualify two samples with high lead levels that did not meet the sampling criteria. But the records obtained by the ACLU and Edwards also show that a DEQ official sent Flint an e-mail saying that samples as of late June showed Flint's water had lead levels above the "action level" that would require public notice and remedial action, and he hoped the city could send the remaining required samples quickly and that they would be below the action level for lead.

The records also suggest the DEQ was not as strict in disqualifying samples with low lead levels that did not meet the testing criteria as it was in disqualifying samples with high lead readings.

'It's ... not enough'

Flint, which was under the control of a state-appointed emergency manager at the time of the cost-cutting move, switched its drinking water source, starting in April 2014, from Lake Huron water supplied by Detroit to the much more polluted and corrosive water from the Flint River.

The state has acknowledged that it misinterpreted a federal rule and failed to require Flint to add needed corrosion-control chemicals that would have prevented lead from leaching into the drinking water from pipes, connections and fixtures.

That change in the drinking-water source brought immediate complaints from Flint residents about the taste, smell and appearance of the water. The lead tests of the water could have spurred action in July, but it was not until October — after blood test results analyzed by Hurley Children's Hospital pediatrician Dr. Mona Hanna-Attisha showed elevated lead levels in Flint children — that the DEQ admitted making a mistake by failing to require the addition of corrosion-control chemicals to the Flint River water. The state also then provided funds to help Flint reconnect to Lake Huron water supplied by Detroit.

Lead can cause irreversible brain damage in children and has also been linked to behavioral problems.

Melissa Mays, a Flint resident who drank the contaminated water along with her three boys, said she was more shocked by Snyder's apology than by Wyant's resignation. She welcomed the announcements but said more DEQ officials need to be removed because Flint residents can't trust those officials to make sure their water is safe to drink today.

"This all should have happened a long time ago, and it's also not enough," she said.

Mays questioned why Snyder has not endorsed Flint Mayor Karen Weaver's declaration of a state of emergency in Flint, which she said would help secure federal funding to help rectify problems.

Snyder spokesman Dave Murray said "no formal request has been made to the state" to declare a state of emergency in Flint.

"We are committed to working with Mayor Weaver and Genesee County leaders," and the emergency management division of the Michigan State Police is working with city and county officials on potential avenues for federal aid, Murray said.

The crisis has prompted a federal class-action and calls for an investigation by the U.S. Department of Justice.

Goals: Openness, trust

Snyder said "changes in leadership and staff are not enough. I understand there can be disagreements within the scientific community. That is why I have directed both the departments of Environmental Quality and Health and Human Services to invite every external scientist who has worked on this issue to be our partners in helping us improve Flint water."

Snyder said he wants to "share research on water and blood-lead level testing so we can arrive at accurate and mutually supported conclusions. Together, we should work to affirm that we're using the very best testing protocols to ensure Flint residents have safe drinking water and that we're taking steps to protect their health over the short and long term."

The other personnel changes at DEQ referenced by Snyder, aside from Wurfel's resignation, have not yet been made, Murray said.

“I know many Flint citizens are angry and want more than an apology," Snyder said. "That's why I'm taking the actions today to ensure a culture of openness and trust. We've already allocated $10 million to test the water, distribute water filters, and help in other ways. Last week, I called Flint Mayor Karen Weaver, and we're going to meet soon to discuss other ways the state can offer assistance.

“These are only initial steps - we fully expect to take more actions following the recommendations of our task force. When it comes to matters of health and quality of life, we're committed to doing everything we can to protect the well-being of our citizens.”

The letter from the task force said a minimalist culture of "technical compliance" had developed in the DEQ's Office of Drinking Water and Municipal Assistance and "it led to MDEQ's failure to recognize a number of indications that switching the water source in Flint would — and did — compromise both water safety and water quality."

The office "must adopt a posture that is driven not by this minimalist technical compliance approach, but rather by one that is founded on what needs to be done to assure drinking water safety," the letter said.

The letter also said that both the tone and substance of DEQ statements to the public during the crisis were "completely unacceptable," marked by a "persistent tone of scorn and derision."

Task force members met with Wyant, and while he agreed with many of the task force's interim conclusions, "it was disappointing to hear his weak defense of the (corrosion control) decision," the letter said.

Senate Minority Leader Jim Ananich, D-Flint, said the personnel changes Snyder announced could be a sign of progress if they "lead to a more aggressive response and resources to improve public health."

"I still believe that legislative hearings will be required to get all the answers and help shape the necessary policy changes, and ensure this never happens again," Ananich said in a news release.

"Dan Wyant gets to walk away from this crisis, but the people of Flint do not," said Lonnie Scott, the group's executive director. "There's a lot we don't know about this man-made catastrophe. What did Gov. Snyder know and when did he know it? We need complete transparency so that justice for the families of Flint can be realized and the proper people can be held accountable."

Contact Paul Egan: 517-372-8660, pegan@freepress.com or on Twitter @paulegan4

Flint water report prompts apologies, resignations (Detroit News)

Jim Lynch The Detroit News9:13 a.m. EST December 30, 2015

http://www.detroitnews.com/story/news/politics/2015/12/29/deq-director-wyant-resigns-due-flint-water-crisis/78028616/

Buy Photo

(Photo: Dale G. Young / The Detroit News)

Michigan's top environmental official resigned Tuesday after an independent task force delivered its initial findings on the Flint water contamination crisis — conclusions that also prompted an apology from Gov. Rick Snyder.

Dan Wyant, director of the Department of Environmental Quality since 2011, tendered his resignation Tuesday, marking the second agency shakeup in just over two months related to Flint's lead-tainted drinking water problems. The industrial city has been plagued by lead issues since an April 2014 switch to the Flint River as its water source.

A Snyder-appointed task force investigating the long-running situation announced it found Tuesday the DEQ "primarily responsible for failing to ensure safe drinking water in Flint." Snyder accepted the initial findings and Wyant's resignation — "I've determined that it's appropriate to accept it, he said — and then issued an apology.

"I want the Flint community to know how very sorry I am that this has happened," Snyder said in a press release. "And I want all Michigan citizens to know that we will learn from this experience, because Flint is not the only city that has an aging infrastructure."

"I know many Flint citizens are angry and want more than an apology. That's why I'm taking the actions today to ensure a culture of openness and trust."

A Flint Water Advisory Task Force co-chair blamed the DEQ's passive culture for Flint's water ills.

"Flint residents were exposed to toxic levels of lead in their water primarily due to a regulatory culture of passive technical compliance that is simply insufficient to the task of public protection," wrote Ken Sikkema, a former state senator. "We also believe that the dismissive and disrespectful tone of much of the MDEQ's response to public concerns is unacceptable."

The water switch, made while Flint was under the leadership of a Snyder-appointed emergency manager, immediately led to resident complaints about the smell, taste and discoloration of their drinking water. Eventually, researchers found a link between the switch and a rise in lead poisoning among city children.

Lead poisoning can cause learning disabilities and, at high levels, may lead to seizures, coma and death, according to the Centers for Disease Control and Prevention.

Wyant could not be reached for comment Tuesday. In October, Wyant admitted the DEQ erred in its application of the federal Lead and Copper Rule, designed to ensure safe drinking water for residents.

Late on Tuesday, DEQ spokesman Brad Wurfel resigned as well.

Flint was allowed to begin drawing its drinking water from the river without any corrosion controls in place to prevent lead in old plumbing connections from leaching. The task force said the DEQ failed in the regulatory handling of Flint's water problems, the "substance and tone" in the department's response as well as its "interpretation of the Lead and Copper Rule."

State Sen. Jim Ananich, D-Flint, criticized the DEQ culture Tuesday, saying workers were more concerned with following rules than informing the public about potential problems.

"When you have lead in the water, I don't care if you follow the rules or not: You need to notify the public first," Ananich said.

Critics have put increasing pressure on Snyder's administration to answer for the Flint water decisions in the last two years. Among the harshest critics is Marc Edwards, a Virginia Tech researcher whose water sampling at Flint homes and public record requests have helped keep the spotlight on the state government's actions.

But Edwards said Wyant should not be the one on the chopping block.

"I'm glad that someone is sorry and someone is being held accountable," Edwards said. "But Dan Wyant would not be at the top of my list — or even on the list. I feel strongly he was misled by his staff at every point, and he was put in publicly embarrassing situations by the staff's misinformation."

Dr. Mona Hanna-Attisha, a Hurley Medical Center pediatrician who uncovered lead exposure in city children following the switch, echoed Edwards by saying DEQ staffers' mistakes led to Flint's problems.

"(Wyant) wasn't directly involved," she said. "There are other people, particularly in (the Office of Drinking Water and Municipal Assistance), that need to take some responsibility. ... (Wyant) was a nice person being fed bad information."

In 2013, Flint agreed to create a new regional water authority in an attempt to save money. The city had tried to negotiate lower rates with former provider Detroit Water and Sewerage Department for years, to little avail.

But the Karegondi Water Authority will not be completed until some time next year. In the interim, Flint looked to its river to provide drinking water. That water turned out to be far more corrosive than the Lake Huron water used by the Detroit system.

With pressure mounting from troublesome water samples and health studies, Flint reconnected to the Detroit system in October.

Snyder previously was elusive in acknowledging the extent of the state's responsibility for the lead contamination of the city's water when it switched to the more corrosive Flint River in 2014, saying he was awaiting the task force report. On Tuesday, the governor was more contrite.

“We’ve already allocated $10 million to test the water, distribute water filters, and help in other ways,” Snyder said. “Last week, I called Flint Mayor Karen Weaver, and we’re going to meet soon to discuss other ways the state can offer assistance.”

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(313) 222-2034

Michigan Regulator Resigns Amid Flint's Lead-in-Water Crisis (AP)
By DAVID EGGERT, ASSOCIATED PRESS
LANSING, Mich. — Dec 29, 2015, 7:16 PM ET
http://abcnews.go.com/Politics/wireStory/michigan-official-resigns-amid-flint-water-issue-35996502

Michigan's top environmental regulator resigned Tuesday after elevated levels of lead were found in Flint children during a drinking water crisis that a task force blamed primarily on his agency.

Gov. Rick Snyder accepted the resignation of Department of Environmental Quality Director Dan Wyant and apologized for what occurred in Flint, which switched its drinking water supply in a cost-cutting move while under state financial management. Communications director Brad Wurfel also resigned, and Snyder said he plans additional personnel changes in the agency.

Wyant quit the same day a task force appointed by the Republican governor reported that the department was primarily responsible for the fiasco because it did not require Flint to keep corrosive water from leaching lead from service pipes into residents' homes and belittled concerns from the public. Exposure to lead can cause behavior problems and learning disabilities in children.

"I want the Flint community to know how very sorry I am that this has happened," Snyder said in a written statement. "And I want all Michigan citizens to know that we will learn from this experience, because Flint is not the only city that has an aging infrastructure."

The five-member task force, which previously brought up concerns about a lack of organization in responding to the disaster, said the environmental department's Office of Drinking Water and Municipal Assistance has a "minimalist approach" to regulatory oversight in which "technical compliance" is sufficient. It faulted the agency for a "tone of scorn and derision" toward the public, including outside water and health experts who raised alarm bells.

The task force confirmed that the state did not follow the federal Lead and Copper Rule when Flint disconnected from Detroit's water system in April 2014 and switched to Flint River water while waiting to connect to a new regional water authority.

Detroit's water from Lake Huron had been treated for corrosion. State officials thought that after Flint made the transition to the river it could test the new water for lead over two six-month intervals to determine potential corrosion treatment instead of needing to immediately add corrosion controls. Flint returned to Detroit's water in October after a public health emergency was declared.

The task force, which met with Wyant on Dec. 16, noted his substantial agreement with many of its conclusions but expressed disappointment with his "weak defense" regarding the federal rule.
The U.S. Environmental Protection Agency said in a November memo that there are "differing possible interpretations" of the Lead and Copper Rule, explaining that it does not explicitly discuss a scenario like in Flint.
But task force members said, "Individuals and agencies responsible must be held accountable in a timely fashion."

They also cited recent revelations of the Department of Health and Human Services' apparent early knowledge of and silence about elevated blood-lead levels, and said the committee's final report in early 2016 would review local governments' decision processes while under emergency management.
"I know many Flint citizens are angry and want more than an apology. That's why I'm taking the actions today to ensure a culture of openness and trust," Snyder said.
Wyant, 56, led the Environmental Quality Department for nearly five years. He previously served as the state's agricultural director under Republican Gov. John Engler and Democratic Gov. Jennifer Granholm.
"If these personnel moves and change in tone lead to a more aggressive response and resources to improve public health, then we are finally making progress," said Senate Minority Leader Jim Ananich, a Democrat from Flint.

Follow David Eggert at http://twitter.com/DavidEggert00 . His work can be found at http://bigstory.ap.org/author/david-eggert

Task force lays most blame for Flint water crisis on MDEQ (Michigan Radio)

By VINCENT DUFFY • 14 HOURS AGO
SHARETwitter Facebook Google+ Email
http://michiganradio.org/post/task-force-lays-most-blame-flint-water-crisis-mdeq#stream/0
MDEQ Director Dan Wyant at a recent press conference.
CREDIT SCREEN GRAB / MLIVE USTREAM
A task force appointed by Gov. Rick Snyder says Michigan's environmental regulatory agency is primarily responsible for the state's failure to ensure safe drinking water for Flint residents.

The Flint Water Advisory Task Force says in a letter to Snyder that the state Department of Environmental Quality "must be held accountable for that failure."

The letter was made public Tuesday. You can read it here.

Corrosive Flint River water leached lead from service pipes into homes after the city switched last year from Detroit water. Elevated blood-lead levels later were found in some children.

Department of Environmental Quality Director Dan Wyant and spokesman Brad Wurfel both resigned Tuesday.

Task force co-chair Ken Sikkema says in the letter that "Flint residents were exposed to toxic levels of lead in their water primarily due to a regulatory culture of passive technical compliance."

The FWATF letter stated in part:

"We believe the primary responsibility for what happened in Flint rests with the Michigan Department of Environmental Quality (MDEQ). Although many individuals and entities at state and local levels contributed to creating and prolonging the problem, MDEQ is the government agency that has responsibility to ensure safe drinking water in Michigan. It failed in that responsibility and must be held accountable for that failure."

"The City of Flint's water customers—fellow Michigan citizens—were needlessly and tragically exposed to toxic levels of lead through their drinking water supply. They deserve a commitment to properly assess responsibility and ensure accountability. They also deserve a commitment to needed mitigation in both the short and long term. The Flint water crisis never should have happened. Having failed to prevent it, state government should coordinate a sustained, public-health-focused response to remedy, to the fullest extent possible, the impacts on the Flint community."

The letter outlined three areas where MDEQ failed:

Regulatory Failure
Failure in Substance and Tone of MDEQ Response to the Public
Failure in MDEQ Interpretation of the Lead and Copper Rule
This is the second letter sent by the Task Force. The first, sent earlier this month, made several recommendations concerning coordination of state efforts that were supported and implemented by Governor Snyder.

The full FWATF report is expected to be completed in early 2016.

Members of the Task Force include:

Matthew Davis, M.D., M.A.P.P., is professor of pediatrics and internal medicine at the University of Michigan Health System and professor of public policy at the Gerald R. Ford School at the University of Michigan.

Chris Kolb is president of the Michigan Environmental Council.

Lawrence Reynolds, M.D., is a pediatrician in Flint who serves as president of the Mott Children's Health Center.

Eric Rothstein is a national water issues consultant and principal at the Galardi Rothstein Group. He served as an independent advisor on the creation of the Great Lakes Water Authority.

Ken Sikkema is a senior policy fellow at Public Sector Consultants. (Full Disclosure - he is also a regular commenter on Michigan Radio.)

The FWATF was formed by Governor Snyder to review actions regarding the Flint water system and offer recommendations both for Flint and Michigan to protect the health and safety of state residents.

Flint water scandal: Snyder apologizes, DEQ director resigns (Fox 2 Detroit)

Gov. Rick Snyder announced changes at the Michigan DEQ.
http://www.fox2detroit.com/news/local-news/66000998-story

POSTED:DEC 29 2015 10:25PM EST
UPDATED:DEC 29 2015 11:24PM EST
FLINT, Mich. - Gov. Rick Snyder says he's sorry for Flint's water crisis as one of his top appointees resigns.
The director of the state's department of environmental quality Dan Wyant resigned.

Wyant was in charge of keeping the water safe. When Flint switched its drinking water source from Lake Huron water supplied by detroit...to the flint river - to save money -- corrosion flowed through the pipes.

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Tests showed elevated levels of lead in the city's drinking water back in June. But the state didn't take action until October after blood testing showed high lead levels in Flint's children.
Flint water scandal: Snyder apologizes, DEQ director resigns
Snyder's office issued a press release Tuesday:
"I want the Flint community to know how very sorry I am that this has happened," he said. "And I want all Michigan citizens to know that we will learn from this experience, because Flint is not the only city that has an aging infrastructure.
"When I became aware that the city of Flint's water showed elevated lead levels and that the state's handling of the situation was being questioned," he said. "I requested funding to switch the source back to the Great Lakes Water Authority and appointed an independent task force to identify possible

missteps and areas for improvement.

"The task force has done an exceptional job, reviewing stacks of documents and interviewing scores of Flint, Genesee County, state and federal officials ... We'll continue to work with the community members to make sure we hear and respond to their concerns.

"MDEQ Director Dan Wyant has offered his resignation, and I've determined that it's appropriate to accept it. I'm also making other personnel changes at MDEQ to address problems cited by the task force."

In a previous FOX 2 report it was discovered a year after the city began using the Flint River as its water source; a local hospital's study found the number of Flint kids under the age of 5 years old with above average lead levels nearly doubled city-wide and in some cases, tripled.

Virginia Tech University tested resident Ronda Thornton's water. Anything more than 30 micrograms a liter is a sign of serious lead contamination. Hers registered 138.

"I know many Flint citizens are angry and want more than an apology," Snyder said. "That's why I'm taking the actions today to ensure a culture of openness and trust. We've already allocated $10 million to test the water, distribute water filters, and help in other ways. Last week, I called Flint Mayor Karen Weaver, and we're going to meet soon to discuss other ways the state can offer assistance."

"But changes in leadership and staff are not enough. I understand there can be disagreements within the scientific community. That is why I have directed both the departments of Environmental Quality and Health and Human Services to invite every external scientist who has worked on this issue to be our partners in helping us improve Flint water. Let's share research on water and blood lead level testing so we can arrive at accurate and mutually supported conclusions. Together, we should work to affirm that we're using the very best testing protocols to ensure Flint residents have safe drinking water and that we're taking steps to protect their health over the short and long term."

"These are only initial steps - we fully expect to take more actions following the recommendations of our task force. When it comes to matters of health and quality of life, we're committed to doing everything we can to protect the well-being of our citizens."

Flint leaders applaud DEQ director's resignation, governor's apology (MLive.com)

http://www.mlive.com/news/flint/index.ssf/2015/12/gov_rick_snyder_accepts_mdeq_h.html

By Jiquanda Johnson | jjohns16@mlive.com

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on December 29, 2015 at 6:41 PM, updated December 29, 2015 at 8:44 PM

DEQ spokesman also resigns over Flint water crisis, says city 'didn't feel like we cared'

Flint leaders applaud DEQ director's resignation, governor's apology

Congressman Dan Kildee will again discuss Flint water on 'The Rachel Maddow Show'

Gov. Rick Snyder still doesn't get it when it comes to Flint water crisis

Director Dan Wyant resigns after task force blasts MDEQ over Flint water crisis

All Stories

FLINT, MI – Mayor Karen Weaver and other local leaders say the resignation of Michigan Department of Environmental Quality Director Dan Wyant and release of Flint Water Task Force findings Tuesday are the first steps toward holding people accountable for Flint's water crisis.

"There is some accountability being put in place and that's a good thing," Weaver said. "That's what is happening and I think that's a good sign because it shows that our voices have been heard and that they will continue to be heard."

According to a statement issued by Gov. Rick Snyder on Dec. 29, he has accepted Wyant's resignation after findings from a report by the task force, which was created by Snyder in October to look into Flint's water crisis. In the same statement, Snyder also said he was "sorry" to the Flint community for the water issues.

"I know many Flint citizens are angry and want more than an apology," Snyder said. "That's why I'm taking the actions today to ensure a culture of openness and trust ... Last week, I called Flint Mayor Karen Weaver, and we're going to meet soon to discuss other ways the state can offer assistance."

Weaver confirmed that she will be meeting with Snyder after the first of the year.

"I hope this will help move Flint forward," she said. "One thing that has been an issue for us here in Flint has been that broken trust. We will have a new person that we will be working with, and that's a positive step."

The task force report, which is preliminary, revealed that the MDEQ failed the city in multiple areas including regulatory failures, substance and tone of the MDEQ's response to public and the interpretation of the federal lead and copper rule.

"We believe the primary responsibility for what happened in Flint rests with the Michigan Department of Environmental Quality (MDEQ)," said the preliminary report. "Although many individuals and entities at state and local levels contributed to creating a prolonging problem, MDEQ is the government agency that has responsibility to ensure safe drinking water in Michigan. It failed in that responsibility and must be held accountable."

State Rep. Sheldon Neeley, D-Flint, said that he and others in the city have called for legislative hearings regarding the water crisis and that Wyant's departure is just the first, not the only, person held responsible for the condition of Flint's water.

"For months, the call has been public and aggressive for Dan Wyant to remove himself from his position, or have Gov. Rick Snyder do the deed for him," Neeley said in a statement issued Dec. 29. "There are many culpable parties involved in the continued decline of health and safety during the water crisis in the city of Flint, and Wyant was just one figure in a menagerie of offenders."

Neeley, who along with Sen. Jim Ananich, D-Flint, have been pushing for legislative hearings on Flint's water crisis, went on to say there is still "cleanup do be done" and he is "glad" that Wyant has stepped down in what Neeley considers a "disorganized and flawed DEQ."

The task force's report also says members spoke with Wyant on Dec. 16 and they were not pleased with how he responded to the city's water crisis and he was in agreement with some of their findings.

"It is our understanding that he has drawn similar conclusions in his own evaluation of MDEQ's role in the Flint water crisis," said the report. "At the same time, it was disappointing to hear his weak defense of the CCT (corrosion control treatment) decision based on the EPA's November 2015 memorandum."

Both Ananich and Neeley's push led to an independent review by the Office of State Auditor Genera,l which made it clear in a Dec. 23 letter that corrosion control should have been maintained during Flint's transition from Detroit water to Flint River water. The review was based on a series of questions sent to the auditor from Ananich in October.

The corrosiveness of Flint River water is blamed for lead that leached from pipes into drinking water, causing elevated levels of lead in the blood of Flint children.

"I think the best apology (Snyder) can offer the residents of Flint and the rest of the state is a promise that this will never happen again," Ananich said. "The proof is in the long-term commitment. I'm going to continue to work to make sure that we get that."

Michigan Gov. Rick Snyder apologizes for lead levels in Flint water (Detroit 4)

DEQ head Dan Wyant's resigns after task force blames department for crisis

By Jason Colthorp – Reporter

http://www.clickondetroit.com/news/michigan-official-resigns-amid-flint-water-issue

LANSING, Mich. - Gov. Rick Snyder issued an apology Tuesday as Dan Wyant, his head of the Department of Environmental Quality, resigned after a task force lead by the state's auditor general blasted the DEQ for it's role in Flint's water crisis.

The state's mishandling of Flint's water system ultimately exposed Flint residents to dangerously elevated levels of lead.

“I want the Flint community to know how very sorry I am that this has happened,” Snyder said in a statement. “And I want all Michigan citizens to know that we will learn from this experience.”

The governor's apology and the DEQ head's resignation has helped to temper concerns that no one cared about Flint said the city's mayor Karen Weaver.

“One of the things we've always talked about is accountability and that seems to be what's happening,” said Weaver. “It also let us know here in Flint that our voice is being heard.”

Snyder's apology and Wyant's resignation come after the task force released their finding that the DEQ was primarily at fault for Flint's unhealthy level of lead in their drinking water.

"Although many contributed to creating and prolonging the problem, MDEQ is the government agency that has responsibility to ensure safe drinking water in Michigan," the task force said in a written statement. "It failed in that responsibility."

For many Flint residents like Kim Peterson, Tuesday's announcements do little to help them feel confident about the safety of their drinking water. Peterson says she is still hesitant to drink the water even though it is again coming from a healthy source in Lake Huron.

"I take it to mean that something was really wrong with this whole system of checks and balances," she said.

"You don't trust it because you've heard so many conflicting things from so many different people, so we still continue to buy the water."

Mayor Weaver, however, believes Snyder's apology is a first step toward rebuilding trust: "This is a good step to get some things started because people had lost faith and they had lost trust."

Snyder has promised more steps will be taken after the task force releases its final and full report.

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Director Dan Wyant resigns after task force blasts MDEQ over Flint water crisis (MLive.com)
http://www.mlive.com/lansing-news/index.ssf/2015/12/deq_director_dan_wyant_resigns.html
Michigan Department of Environmental Quality Director Dan Wyant speaks during a news conference in Flint on Oct. 2, 2015. (Danny Miller | MLive.com)
PrintEmail
By Emily Lawler | elawler@mlive.com
on December 29, 2015 at 4:39 PM, updated December 29, 2015 at 6:51 PM
LANSING, MI -- Gov. Rick Snyder on Tuesday accepted a resignation from Michigan Department of Environmental Quality Director Dan Wyant after a task force laid responsibility for the Flint water crisis at the feet of the department.
Snyder, in a statement, announced Wyant's resignation and apologized to Flint residents after he received a letter from the Flint Water Advisory Task Force.
"...MDEQ Director Dan Wyant has offered his resignation, and I've determined that it's appropriate to accept it. I'm also making other personnel changes at MDEQ to address problems cited by the task force," Snyder said.
Wyant and the DEQ have come under fire in recent months for handling a Flint

drinking water crisis that lead to corrosive water running through city pipes and resulted in children with elevated levels of lead. In October, Wyant acknowledgeda mistake in oversight from his office, saying DEQ officials were confused about federal regulations on making the drinking water less corrosive.

The task force in its letter blamed the department for the crisis.

"We believe the primary responsibility for what happened in Flint rests with the Michigan Department of Environmental Quality (MDEQ)," read the letter to Snyder.

"Although many individuals and entities at state and local levels contributed to creating and prolonging the problem, MDEQ is the government agency that has responsibility to ensure safe drinking water in Michigan. It failed in that responsibility and must be held accountable for that failure."

The task force cited DEQ's involvement as regulatory failure, failure in substance and tone of response to the public and a failure of interpreting the lead and copper rule.

Gov. Rick Snyder recently named the Flint water crisis as his biggest disappointment in 2015.

Wyant had a long track record of service for the state. He served as director of the Michigan Department of Agriculture under both Democratic Gov. Jennifer Granholm and Republican Gov. John Engler before Gov. Rick Snyder tapped him to head up the DEQ in 2011.

He shepherded the department through a transition into being its own entity again after Gov. Jennifer Granholm had combined it with the Department of Natural Resources, forming the Department of Natural Resources and Environment. He also led the "quality of life group" within state government, meaning he coordinated efforts between the DNR, DEQ and Department of Agriculture and Rural Development.

The statement from Snyder alluded to other structural changes within the DEQ, and spokesperson Dave Murray said those decisions would be made in the coming days. DEQ spokesperson Brad Wurfel did not immediately return a call for comment.

Wyant's resignation met with mixed reaction from political groups and leaders.

Senate Minority Leader Jim Ananich (D-Flint) released the following statement:

"If these personnel moves and change in tone lead to a more aggressive response and resources to improve public health, then we are finally making progress. I still believe that legislative hearings will be required to get all the answers and help shape the necessary policy changes, and ensure this never happens again."

Attorney General Bill Schuette praised Wyant's service to the state.

"I am saddened to hear of the resignation of Department of Environment Quality Director Dan Wyant. In my 20-plus years of knowing him, Dan has been a hardworking, dedicated public servant. I am committed to working with all parties, including the legislature and Governor, to ensure the public's health and the well being of Michigan residents."

Democratic Congressman Dan Kildee, who represents Flint, said the steps taken today were appropriate but encouraged further action.

"Governor Snyder's apology over the Flint water crisis is appropriate, as are personnel changes announced today at the Department of Environmental Quality," Kildee said.

"Through this ongoing crisis, the people of Flint did nothing wrong – they are victims of this failure of government. The State of Michigan must not only acknowledge its role in this crisis, but also take responsibility and act right away to make it right."

He urged the state to establish a fund to ensure that kids receive developmental, nutritional and educational resources to help overcome the effects of their lead exposure.

Rep. Sheldon Neeley, D-Flint, said Wyant was not the only offender.

"For months, the call has been public and aggressive for Dan Wyant to remove himself from his position, or to have Gov. Rick Snyder do the deed for him. There are many culpable parties involved in the continued decline of health and safety during the water crisis in the city of Flint, and Wyant was just one figure in a menagerie of offenders," Neeley said.

"While there is still much cleanup to be done, I am glad Mr. Wyant realized he could no longer continue as the head of the disorganized and flawed DEQ, and I call on Gov. Snyder to take careful effort in repairing this department so that it earns back the trust of the people of Flint and this great state.

Progress Michigan said there had been a lack of accountability for the Flint water crisis.

"So far under Gov. Rick Snyder's watch, there has been zero accountability in this crisis and that continues today," said Lonnie Scott, executive director of Progress Michigan.

"Dan Wyant gets to walk away from this criss, but the people of Flint do not. There's a lot we don't know about this man-made catastrophe. What did Gov. Snyder know and when did he know it? We need complete transparency so that justice for the families of Flint can be realized and the proper people can be held accountable. All documentation related this this crisis needs to be released to the public immediately."

Emily Lawler is a Capitol/Business reporter for MLive. You can reach her atelawler@mlive.com, subscribe to her on Facebook or follow her on Twitter:@emilyjanelawler.

Auditor: State erred on Flint water but didn't mislead feds (AP/Crain's Detroit)

http://www.crainsdetroit.com/article/20151228/NEWS01/151229867/auditor-state-erred-on-flint-water-but-didnt-mislead-feds By David Eggert
Associated Press

Michigan Department of Environmental Quality Environment More +

LANSING — The director of Michigan's Department of Environmental Quality has resigned after the Flint Water Task Force delivered its findings on the the city's water contamination crisis to Gov. Rick Snyder.

Snyder said Tuesday afternoon in a statement that he accepted the resignation of Dan Wyant and plans to make "other personnel changes at MDEQ to address problems cited by the task force.

“But changes in leadership and staff are not enough."

In a preliminary report released Monday, Michigan's auditor general said state regulators should have required Flint to treat its corrosive drinking water to keep lead from leaching from service lines into people's homes but did not purposely mislead federal officials about the lack of corrosion control.

Doug Ringler, citing a memo issued last month by the U.S. Environmental Protection Agency, concluded that the Michigan Department of Environmental Quality erred in not requiring the city to immediately combat corrosion when it switched from Detroit's system to the Flint River in April 2014 in a cost-cutting move while under state financial management. State officials interpreted federal rules to mean Flint could make the transition and then test the new water for lead over two six-month intervals to determine potential corrosion treatment.

Flint children have been found to have elevated levels of lead in their blood since the water change. Gov. Rick Snyder's administration initially downplayed concerns but later committed funding to reconnect Flint to Detroit and to provide filters, testing and other services.

Ringler was already conducting an audit of Michigan's Office of Drinking Water and Municipal Assistance when the Flint corrosion issue arose. At the request of Senate Minority Leader Jim Ananich, he answered questions specific to Flint's lead contamination, including concerns that state regulators misled federal environmental regulators.

In February, a DEQ water supervisor told the EPA that Flint had a corrosion control program in place. But in April, an EPA official confirmed through another DEQ official that the city was not practicing corrosion treatment, according to emails.

The EPA apparently interpreted the word "program" to mean treatment, while the DEQ meant it as testing to determine if corrosion controls would be needed in the future.

"Based on our review of this and other emails, we have no specific reason to believe that DEQ willfully misrepresented the information to the EPA," Ringler wrote in a letter dated Wednesday and made public Monday.

The auditor concluded, however, that regardless of confusion over the federal rule, the state should have required Flint to start pursuing corrosion treatment in March after the first six months of testing showed too-high lead levels instead of waiting until August after a second six-month period. He also said the DEQ did not verify that Flint was correctly sampling water from houses only with lead pipes or lead service lines. He suggested that the department consider doing so.

"We agreed with the findings in the Auditor General's review," DEQ spokesman Brad Wurfel said. "The findings align with our internal department review. We appreciate the Auditor General's work to provide a fair and well considered look at some key issues."

The Republican governor has come under scrutiny for the Flint fiasco. Spokesman Dave Murray said the letter "includes some criticisms, but also reflects that state officials were following accepted protocols, or in one case, an interpretation of the corrosion control program that the EPA later clarified. But

we need to do better in ensuring Flint residents have safe water and tracking children affected by elevated lead levels."
Ananich, D-Flint, said "there are serious failings in our system that must be addressed" and again called for GOP leaders to schedule legislative hearings. They have rejected the requests, citing the work of a task force formed by Snyder.
The auditor's letter did not provide clarity on who specifically decided to use the Flint River for water. It was supposed to be an interim source until the city could join a new system getting water from Lake Huron.
Ringler noted that the city council voted in March 2013 to support moving to the Karegnondi Water Authority but was "silent" on using the river temporarily. Flint was being run by a Snyder-appointed manager until this past April and remains under some state oversight.

BREAKING: DEQ Director Resigns Over Flint Water Crisis (West Bloomfield Patch)
Gov. Rick Snyder apologizes to Flint, pledges to help officials address public health crisis surrounding dangerous lead levels in water.
http://patch.com/michigan/westbloomfield/breaking-deq-director-resigns-over-flint-water-crisis
West Bloomfield, MI

By BETH DALBEY (Patch Staff) December 29, 2015

LANSING, MI – The director of the Michigan Department of Environmental Quality has resigned over the Flint water debacle, Gov. Rick Snyder said Tuesday.
DEQ Director Dan Wyant “has offered his resignation, and I’ve determined that it’s appropriate to accept it,” Snyder said in a statement.

The governor said he will be “making other personnel changes at MDEQ” as well.

State officials encouraged officials in Flint, where the mayor has asked for federal emergency reliefto deal with a public health crisis resulting from high lead levels in water, to understate the results, according to e-mails obtained by the American Civil Liberties Union of Michigan and Marc Edwards, a Virginia Tech researcher who helped bring the water crisis to the forefront.

After the testing revealed dangerous lead levels in June, the Michigan Department of Environmental Quality wrongly indicated the water was safe to drink, according to the e-mails.

Related

Erin Brockovich Keeping an Eye on Flint’s ‘Poop Water’
Pediatrician Exposed Crisis of Lead in Flint Water

State Delayed Action on Lead in Flint Water
The financially struggling city of Flint turned off the taps to water from Detroit, which gets its supply from Lake Huron, and switched to water from the Flint River in a money-saving move in 2014. Flint was under the control of a state-appointed emergency manager at the time.

The e-mail trail suggests state officials were aware of the impending water crisis well ahead of a study released in September by West Bloomfield pediatrician Dr. Mona Hanna-Attisha, pediatric residency director at Flint's Hurley Children's Hospital.

More from West Bloomfield Patch
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Opioid Addicts Younger Than Ever: Study

The study showed the proportion of children with above-average levels of lead in their blood had nearly doubled since the city began getting its water from the Flint River.
The consequences of lead poisoning are serious and long lasting.

Lead's trail is virtually invisible, discoverable only through finger-prick blood test or when children begin showing signs of learning disabilities, reduced IQ, behavioral changes, anti-social behavior, anemia, hypertension, renal impairment, immunotoxicity and a plethora of other neurological and behavioral problems that are thought to be irreversible, according to theWorld Health Organization.

The e-mails showed that DEQ district coordinator Stephen Busch told the U.S. Environmental Protection Agency in February that Flint had "an optimized corrosion control program" to prevent lead from getting into the water system when, in fact, the city had no corrosion control program at all.

In his statement, the governor apologized to the residents of Flint and to residents of other cities with aging infrastructure.

"I want the Flint community to know how very sorry I am that this has happened. And I want all Michigan citizens to know that we will learn from this experience, because Flint is not the only city that has an aging infrastructure," he wrote.

Changes in leadership and staff aren't enough, Snyder said. The statement continued:

"I understand there can be disagreements within the scientific community. That is why I have directed both the departments of Environmental Quality and

Health and Human Services to invite every external scientist who has worked on this issue to be our partners in helping us improve Flint water.

“Let’s share research on water and blood lead level testing so we can arrive at accurate and mutually supported conclusions,” he wrote. “Together, we should work to affirm that we’re using the very best testing protocols to ensure Flint residents have safe drinking water and that we’re taking steps to protect their health over the short and long term.

“I know many Flint citizens are angry and want more than an apology. That’s why I’m taking the actions today to ensure a culture of openness and trust. We’ve already allocated $10 million to test the water, distribute water filters, and help in other ways. Last week, I called Flint Mayor Karen Weaver, and we’re going to meet soon to discuss other ways the state can offer assistance.

“These are only initial steps — we fully expect to take more actions following the recommendations of our task force. When it comes to matters of health and quality of life, we’re committed to doing everything we can to protect the well-being of our citizens.”

MDEQ Director Wyant resigns over Flint water crisis, Snyder apologizes (Michigan Radio)
http://michiganradio.org/post/mdeq-director-wyant-resigns-over-flint-water-crisis-snyder-apologizes#stream/0
By JAKE NEHER • 16 HOURS AGO
SHARETwitter Facebook Google+ Email
Former MDEQ director Dan Wyant
CREDIT STEVE CARMODY / MICHIGAN RADIO
UPDATED AT 5:37 PM ON 12/29/15

The head of the Michigan Department of Environmental Quality (MDEQ) has resigned over the drinking water crisis in Flint.

Gov. Rick Snyder has also now apologized to the community of Flint for his administration’s involvement in the situation.

“I want the Flint community to know how very sorry I am that this has happened,” said Snyder in a statement on Tuesday. “And I want all Michigan citizens to know that we will learn from this experience, because Flint is not the only city that has an aging infrastructure.”

“I know many Flint citizens are angry and want more than an apology. That’s why I’m taking the actions today to ensure a culture of openness and trust.”

MDEQ Director Dan Wyant will step down immediately. The resignation comes after Snyder received initial findings from the task force he appointed to investigate the situation. A number of reports have pointed to mistakes the department made that resulted in elevated lead levels in the city's water.

The governor says he plans to make additional personnel changes in the department – although he hasn't announced what those will be. And he says he'll meet with Flint Mayer Karen Weaver to discuss further actions the state could take to help the city.

Also resigning from the MDEQ today was spokesman Brad Wurfel.

Letter says the state department is at fault in Flint Water Crisis (WLNS News 6)
http://wlns.com/2015/12/30/letter-says-the-state-department-is-at-fault-in-flint-water-crisis/
6 News StaffPublished: December 30, 2015, 6:11 am
Photo: MLive
LANSING, MI. (WLNS) – At the state capital, a letter sent to Governor Snyder from his Flint Water Crisis task force says there's a state department to blame for the city's water problems.

In the letter the task force says the Department of Environmental Quality must be held accountable for failing to ensure the safe drinking water for people of Flint.

It says Flint residents were exposed to toxic levels of lead in their water because of a culture of passive compliance.

In addition to the letter, Dan Wyant stepped down as director of the department

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To: Hedman, Susan[hedman.susan@epa.gov]; Kaplan, Robert[kaplan.robert@epa.gov]; Hyde, Tinka[hyde.tinka@epa.gov]
Cc: Kelley, Jeff[kelley.jeff@epa.gov]; Rowan, Anne[rowan.anne@epa.gov]; Beckmann, Ronna Erin[beckmann.ronna@epa.gov]; Harrison, Melissa[Harrison.Melissa@epa.gov]; Abrams, Dan[Abrams.Dan@epa.gov]; Poy, Thomas[poy.thomas@epa.gov]; Singer, Joshua[Singer.Joshua@epa.gov]; Arcaute, Francisco[Arcaute.Francisco@epa.gov]; Cannon, Phillippa[Cannon.Phillippa@epa.gov]; Deamer, Eileen[deamer.eileen@epa.gov]; Fortin, Denise[Fortin.Denise@epa.gov]; Nowotarski, Allison[nowotarski.allison@epa.gov]; Reshkin, Karen[Reshkin.Karen@epa.gov]; Loop, Travis[Loop.Travis@epa.gov]; Purchia, Liz[Purchia.Liz@epa.gov]; Henry, Timothy[henry.timothy@epa.gov]; Lee, Monica[Lee.Monica@epa.gov]; Grantham, Nancy[Grantham.Nancy@epa.gov]; Peterson, John[peterson.john@epa.gov]; Davis, CatherineM[Davis.CatherineM@epa.gov]
From: Cassell, Peter
Sent: Thur 12/31/2015 2:26:50 PM
Subject: Flint Water Clips Dec. 31, 2015 - happy new year!

Flint Drinking Water Clips
Prepared by R5 Pete Cassell on Dec. 31

Shakeup roils DEQ in wake of Flint water crisis (Detroit News)

Snyder names DNR chief Keith Creagh to head DEQ (Detroit Free Press)

State board rejects recall petitions for Snyder, senators (AP)

POLITICS

Shakeup roils DEQ in wake of Flint water crisis (Detroit News)

Jim Lynch, The Detroit News21 hours ago

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Steve Perez / The Detroit News

Keith Creagh

Michigan's Department of Environmental Quality remained in flux Wednesday after a change in leadership at the top and ongoing questions about whether any rank-and-file

staffers may get disciplined because of the Flint water contamination crisis.

Department of Natural Resources Director Keith Creagh became the interim head of the DEQ on Wednesday after Gov. Rick Snyder accepted Tuesday the resignation of agency director Dan Wyant — just over five years after he was named to the post. Creagh's former deputy, Bill Moritz, is taking the reins at the DNR.

It is unclear if additional personnel changes are in the offing for the DEQ after an independent review panel singled out the agency as having "primary responsibility for what happened in Flint." The city's drinking water has prompted a year and a half of complaints about the odor, taste and smell, as well as the findings in August of elevated lead levels in some of Flint's children.

On Wednesday, a Snyder spokesperson would say "There will be other personnel changes at DEQ, but those are not resolved yet."

Some of the harshest critics of the DEQ's handling of the Flint water situation have said Wyant was hamstrung by bad information provided to him by subordinates.

Creagh's interim appointment is a natural move because the Natural Resources and Environmental Quality departments used to be a single unit before the Republican governor separated them when he took office in 2011.

Snyder has vowed to search for a long-term replacement to lead the environmental protection agency. Wyant's departure was applauded by some critics and came on the heels of problems with lead contamination in Flint's drinking water after the city switched its source to the Flint River from the Detroit water system's Lake Huron for cost reasons.

The water switch by Flint, which was run by a state-appointed emergency manager from December 2011 until April, was meant to buy time until the city could finish a new regional authority in 2016. The stakes rose dramatically in August and September when testing and health studies showed a link between the switch to the corrosive river water and a rise in lead levels in the blood of city children.

Flint reconnected to the Detroit Water and Sewerage Department, and Snyder soon appointed a Flint Water Advisory Task Force to evaluate what went wrong. The task force sent Snyder a summary of its findings Tuesday that zeroed in on the Department of Environmental Quality's handling of the switchover.

"Although many individuals and entities at state and local levels contributed to creating and prolonging the problem, (DEQ) is the government agency that has responsibility to ensure safe drinking water in Michigan," the task force summary reads. "It failed in that responsibility and must be held accountable for that failure."

Task force members highlighted several areas where state oversight of the Flint situation failed.

■DEQ's Office of Drinking Water and Municipal Assistance focused too much on "technical compliance" with the federal Lead and Copper Rule. The mindset resulted in a "failure to recognize a number of indications that switching the water source in Flint would — and did — compromise both water safety and water quality."

■DEQ's public response to rising concerns among Flint residents and researchers was characterized by task force members as one of "aggressive dismissal, belittlement and attempts to discredit these efforts and the individuals involved." The department "seems to have been more determined to discredit the work of others — who ultimately proved to be right — that to pursue its own oversight responsibility."

■DEQ staff members were also identified as being behind a decision not to provide immediate corrosion controls, such as phosphorus, to prevent lead from leaching into the water, during the switch to the Flint River. "The decision not to require (corrosion controls) ... led directly to the contamination of the Flint system," according to the initial report.

Chris Kolb, a task force co-chair and president of the Michigan Environmental Council, said after Wyant's Tuesday resignation that the DEQ's faulty approach in some areas was glaring.

"The key reality is that no one seemed to have asked the question, 'What happens if we don 't continue using corrosion controls?'" Kolb said. "If someone would have asked that question and thought about it, the answer would have been 'You'll see corrosion and the leaching of metals into the water' — exactly what you saw in Flint."

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http://www.detroitnews.com/story/news/politics/2015/12/30/snyder-taps-dnrs-creagh-interim-deq-chief/78075004/.

MICHIGAN

Snyder names DNR chief Keith Creagh to head DEQ (Detroit Free Press)

Paul Egan, Detroit Free Press Lansing Bureau15 hours ago

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Keith Creagh

LANSING -- Gov. Rick Snyder named state Department of Natural Resources Director Keith Creagh as the interim head of the Michigan Department of Environmental Quality on Wednesday, one day after he accepted the resignation of Dan Wyant as part of the fallout from the Flint drinking water crisis.

"Keith has an unparalleled passion for Michigan's environment, working closely with the DEQ during his years with both the DNR and the Michigan Department of Agriculture and Rural Development," Snyder said in a news release. "I am confident his knowledge and experience will help ensure a seamless transition while we work to identify a long-term director for the DEQ."

The appointment is effective Monday.

Creagh has served as DNR director since July 2012 and was previously director of the Michigan Department of Agriculture and Rural Development. Before that, Creagh served as director of industry affairs for Lansing-based Neogen, which provides food and animal safety solutions to the agri-food industry. He received a bachelor's degree from Michigan Technological University.

An unknown number of Flint residents were poisoned by lead in their drinking water in 2014 and 2015 after the city, while under the control of a state-appointed emergency manager, switched its water supply source from Lake Huron to the Flint River as a cost-cutting move. Wyant acknowledged the DEQ failed to require the city to add needed corrosion-control chemicals and that the corrosive Flint River water caused lead from pipes, joints and fixtures to leach into the water. The DEQ has also been faulted for its role in a round of lead-in-water tests that wrapped up in June and for initially dismissing reports of an increase in lead levels in the blood of Flint children.

Lead can cause irreparable brain damage in children and has been linked to behavioral problems.

A letter Tuesday from the Flint Water Advisory Task Force, appointed by Snyder to investigate the lead contamination of Flint's drinking water, said the DEQ has "primary responsibility" for what happened and that the agency had developed a culture geared toward minimal and technical compliance, rather than doing whatever is needed to assure safe drinking water.

The task force also criticized the tone and substance of DEQ communications with the public, saying they were marked by a "persistent tone of scorn and derision."

The DEQ's communications director, Brad Wurfel, announced his resignation Tuesday.

Snyder, who apologized Tuesday to the people of Flint, said more personnel changes are on the way.

Bill Moritz, the natural resources deputy at the DNR who previously served as chief and assistant chief of the wildlife division and as a deer research specialist, will serve as interim DNR director, Snyder said.

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State board rejects recall petitions for Snyder, senators (AP)

- 23 hrs ago

  http://www.michigansthumb.com/news/article_056048b2-aef0-11e5-8bdf-3b1e8c38a0b0.html

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LANSING (AP) — People attempting longshot efforts to recall Gov. Rick Snyder and two lawmakers from office will have to try again with state election officials.

The Board of State Canvassers on Tuesday rejected recall petitions for the Republican governor, Republican Senate Majority Leader Arlan Meekhof and Republican Sen. Wayne Schmidt of Traverse City, ruling the petitions did not factually and clearly state reasons to recall the elected officials.

Detroit resident Angelo Brown is trying to remove Snyder over his administration's handling of Flint's drinking water crisis.

Some residents in Meekhof and Schmidt's districts are angry over their votes in November for fuel tax and vehicle registration fee increases designed to improve roads. It appears likely they will return to Lansing with revised petition language.